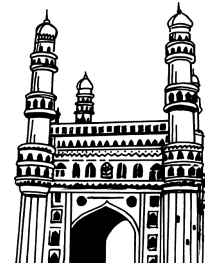


Rahul's ✓
Topper's Voice



B.Com.

III Year VI Semester

Latest 2022 Edition

COST CONTROL AND MANAGEMENT ACCOUNTING

- ☞ Study Manual
- ☞ FAQ's & Important Questions
- ☞ Exercise Problems
- ☞ Short Question & Answers
- ☞ Choose the Correct Answers
- ☞ Fill in the blanks
- ☞ Solved Previous Question Papers
- ☞ Solved Model Papers

- by -

WELL EXPERIENCED LECTURER



Rahul Publications™

Hyderabad. Ph : 66550071, 9391018098

All disputes are subjects to Hyderabad Jurisdiction only

B.Com.

III Year VI Semester

COST CONTROL AND MANAGEMENT ACCOUNTING

Inspite of many efforts taken to present this book without errors, some errors might have crept in. Therefore we do not take any legal responsibility for such errors and omissions. However, if they are brought to our notice, they will be corrected in the next edition.

© No part of this publications should be reporduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording and/or otherwise without the prior written permission of the publisher

Price ` . 199/-

Sole Distributors :

☎ : 66550071, Cell : 9391018098

VASU BOOK CENTRE

Shop No. 2, Beside Gokul Chat, Koti, Hyderabad.

Maternity Hospital Opp. Lane, Narayan Naik Complex, Koti, Hyderabad.

Near Andhra Bank, Subway, Sultan Bazar, Koti, Hyderabad -195.

COST CONTROL AND MANAGEMENT ACCOUNTING

STUDY MANUAL

FAQ's & Important Questions	V - XV
Unit - I	1 - 68
Unit - II	69 - 118
Unit - III	119 - 198
Unit - IV	199 - 234
Unit - V	235 - 268

SOLVED MODEL PAPERS

Model Paper - I	269 - 272
Model Paper - II	273 - 277
Model Paper - III	278 - 281

SOLVED PREVIOUS QUESTION PAPERS

September / October - 2020	282 - 284
September / October - 2019	285 - 287
May / June - 2019	288 - 290

SYLLABUS

UNIT - I

INTRODUCTION TO MANAGEMENT ACCOUNTING & MARGINAL COSTING:

Meaning and Importance of Management Accounting – Marginal Cost Equation – Difference between Marginal Costing and Absorption Costing – Application of Marginal Costing – CVP Analysis – Break Even Analysis: Meaning – Assumptions – Importance - Limitations. Marginal Costing for Decision Making-Make or Buy – Add or Drop Products – Sell or Process Further – Operate or Shut-down – Special Order Pricing – Replace or Retain.

UNIT - II

BUDGETARY CONTROL AND STANDARD COSTING:

Budget: Meaning – Objectives – Advantages and Limitations – Essentials of Budgets - Budgetary Control - Classification of Budgets - Preparation of Fixed and Flexible Budgets. Standard Costing: Meaning – Importance – Standard Costing and Historical Costing - Steps involved in Standard Costing. Variance Analysis: Material variance - Labour variance - Overhead variance.

UNIT - III

TECHNIQUES OF FINANCIAL STATEMENT ANALYSIS:

Meaning – Objectives - Techniques: Comparative Statement, Common Size Statement, Trend Analysis. Ratios- Meaning, Objectives and Classification—Computation of Activity, Liquidity, Solvency and Profitability Ratios.

UNIT - IV

FUNDS FLOW ANALYSIS:

Concept of Funds – Meaning and Importance – Limitations – Statement of Changes in Working Capital – Statement of Sources and Application of Funds.

UNIT - V

CASH FLOW ANALYSIS (AS-3):

Meaning – Importance – Differences between Funds Flow and Cash Flow Statements – Procedure for preparation of Cash Flow Statement.

Contents

UNIT - I

Topic	Page No.
1.1 Management Accounting	1
1.1.1 Meaning	1
1.1.2 Importance of Management Accounting	5
1.2 Marginal Costing	11
1.2.1 Marginal Cost Equation	14
1.3 Absorption Costing	15
1.3.1 Difference between Marginal Costing and Absorption Costing	16
1.4 Application of Marginal Costing	17
1.5 CVP Analysis	17
1.6 Break Even Analysis	18
1.6.1 Meaning, Assumptions	18
1.6.2 Importance	19
1.6.3 Limitations	22
1.6.4 Contribution	23
1.6.5 P/V Ratio	24
1.6.6 Margin of Safety	25
1.7 Marginal Costing for Decision Making	37
1.7.1 Make or Buy	39
1.7.2 Add or Drop Products	42
1.7.3 Sell or Process Further	48
1.7.4 Operate or Shut-down	48
1.7.5 Special Order Pricing	53
1.7.6 Replace or Retain	54
➤ Exercise Problems	56 - 58
➤ Short Question and Answers	59 - 64
➤ Choose the Correct Answers	65 - 66
➤ Fill in the Blanks	67 - 68

UNIT - II

Topic	Page No.
2.1 Budget	69
2.1.1 Meaning	69
2.1.2 Essentials of Budgets	70
2.2 Budgetary Control	71
2.2.1 Essentials	72
2.2.2 Advantages and Limitations	74
2.3 Classification of Budgets	75
2.3.1 Preparation of Fixed and Flexible Budgets	78
2.4 Standard Costing	83
2.4.1 Meaning	83
2.4.2 Importance	85
2.4.3 Standard Costing and Historical Costing	87
2.4.4 Steps Involved in Standard Costing	87
2.5 Variance Analysis	90
2.5.1 Classification of Variance	91
2.5.1.1 Material Variance	92
2.5.2 Labour Variance	96
2.5.3 Overhead Variance	101
➤ Exercise Problems	109 - 110
➤ Short Question and Answers	111 - 114
➤ Choose the Correct Answers	115 - 116
➤ Fill in the Blanks	117 - 118

UNIT - III

3.1 Financial Statement Analysis	119
3.1.1 Meaning	119
3.1.2 Objectives	120

Topic	Page No.
3.2 Techniques of Financial Statement	123
3.2.1 Comparative Statement	125
3.2.2 Common Size Statement	133
3.2.3 Trend Analysis	139
3.3 Ratios Analysis	141
3.3.1 Meaning	141
3.3.2 Objectives	142
3.4 Classification of Ratio Analysis	146
3.4.1 Computation of Activity Ratios	147
3.4.2 Computation of Liquidity Ratios	153
3.4.3 Computation of Solvency Ratios	159
3.4.4 Computation of Profitability Ratios	162
➤ Exercise Problems	190 - 191
➤ Short Question and Answers	192 - 195
➤ Choose the Correct Answers	196 - 197
➤ Fill in the Blanks	198 - 198
UNIT - IV	
4.1 Concept of Funds	199
4.1.1 Meaning and Importance	199
4.1.2 Limitations	201
4.2 Procedure for Preparing a Funds Flow Statement	202
4.2.1 Statement of Changes in Working Capital	202
4.2.2 Statement of Sources and Application of Funds	209
➤ Exercise Problems	228 - 229
➤ Short Question and Answers	230 - 232
➤ Choose the Correct Answers	233 - 233
➤ Fill in the Blanks	234 - 234

Topic	Page No.
UNIT - V	
5.1 Cash Flow Analysis (AS-3)	235
5.1.1 Meaning	235
5.1.2 Importance	236
5.2 Procedure for Preparation of Cash Flow Statement	237
5.3 Differences between Funds Flow and Cash Flow Statements	241
➤ Exercise Problems	263 - 264
➤ Short Question and Answers	265 - 266
➤ Choose the Correct Answers	267 - 267
➤ Fill in the Blanks	268 - 268

Frequently Asked & Important Questions

UNIT - I

1. Define Management Accounting. Discuss the nature and scope of Management Accounting.

Ans : (Oct.-20, Oct.-19, June-19)

Refer Unit-I, Q.No. 1

2. Explain the functions of Management Accounting.

Ans : (Oct.-19, Imp.)

Refer Unit-I, Q.No. 3

3. Explain the need and Importance of Management Accounting.

Ans : (Oct.-20, Imp.)

Refer Unit-I, Q.No. 4

4. How does management accounting differ from financial accounting.

Ans : (June-19, Imp.)

Refer Unit-I, Q.No. 7

5. Define Cost Accounting. Distinguish between cost and management accounting.

Ans : (Oct.-19, Imp.)

Refer Unit-I, Q.No. 8

6. What is CVP Analysis? State the assumptions of CVP Analysis.

Ans : (Oct.-20, Imp.)

Refer Unit-I, Q.No. 17

7. The following data are available from the records of a Company: Sales Rs. 1,00,000; Variable Cost Rs. 60,000; Fixed Cost Rs. 20,000.

You are required to calculate P/V Ratio; BEP and Margin of Safety. Also study the impact of change in the following variable on P/V ratio; BEP and Margin of Safety.

(i) Increase in selling price by 10%

(ii) Decrease in Fixed Cost by Rs. 5,000.

Sol : (June-19, Imp.)

Refer Unit-I, Prob. No. 8

8. The following data is given :

Fixed Expenses Rs. 10,00,000; Variable Expenses Rs. 10 per unit.

Selling price Rs. 15 per unit.

Indicate the number of units to be manufactured and sold.

(i) To Breakeven

(ii) To earn a profit of Rs. 10,000

(iii) What additional units would be necessary to increase the above profit by Rs. 15,000

Sol : (Oct.-19, Imp.)

Refer Unit-I, Prob. No. 9

9. From the following particulars, find;

(a) Fixed Costs

(b) Break Even sales

(c) Total Sales and

(d) Profit

Margin of Safety ` 10,000 which represents 40% of Sales: P/v ratio 50%.

Sol : (Oct.-20, Imp.)

Refer Unit-I, Prob. No. 11

10. Abhishek Ltd manufactures a product whose cost details are given below:

Material Rs. 35; Labour Rs. 12.50; Factory OH (50% Fixed) Rs. 62.50; Sales Overhead (25% Variable) Rs. 8.00; 60,000 Units of Rs. 118.00.

The Company sells 60,000 units of the product at Rs. 143 per unit in the domestic market. It received an order to supply 20,000 units of the product at Rs. 98 per unit, which will be sold in the Foreign Market. There is sufficient spare capacity available (with the company). Should the company accept or reject the offer?

Sol : (Oct.-20, June-19)

Refer Unit-I, Prob. No. 24

UNIT - II

1. Describe the essential steps of a budgetary control system.

Ans : (Imp.)

Refer Unit-II, Q.No. 8

2. State the Advantages and Limitations of budgetary control system.

Ans : (Imp.)

Refer Unit-II, Q.No. 9

3. Excellent Engineering works had prepared its budget for 2018, based on the production of one lakh units of their only product as follows :

	(Rs. in '000's)
a) Raw Materials	252
b) Direct Labour	75
c) Direct Expenses	10
d) Works Overhead (60% Fixed)	225
e) Administration Overheads	40
f) Selling Overheads (50% Fixed)	20

For want of demand, the actual production for that period was only 60,000 units. Calculate the budgeted cost per unit under both the original plan and under actual performance.

Sol :

(Oct.-19, Imp.)

Refer Unit-II, Prob. No. 3

4. A factory is currently working at 50% capacity and produces 10000 units. Estimate the profits or the company when it works at 60% and 80% capacity.

At 60% working raw material cost increases by 2% and selling price falls by 2%. At the 80% working, raw material cost increases by 5% and selling price falls by 5%.

At 50% capacity working the product costs ` 180 per unit and is sold at ` 200 per unit.

The unit cost of ` 1.80 is made up as follows:

Particulars	`
Material	100
Labour	30
Factory Overhead	30 (40% Fixed)
Administrative Overhead	20(50% Fixed)

Sol :

(Oct.-20, Imp.)

Refer Unit-II, Prob. No. 4

5. What are the advantages and limitations of standard costing?

Ans :

(Oct.-20, Imp.)

Refer Unit-II, Q.No. 17

6. Compare and contrast Historical Cost and Standard Cost.

Ans :

(Oct.-20, Imp.)

Refer Unit-II, Q.No. 18

7. From the data given below, calculate each of the three wage variance for the two departments:

Particulars	Dept. - A	Dept. - B
Actual Gross Wages	Rs. 1,968	Rs. 1,789
Std. Hours produced	8,000	6,000
Std. Rate per hour	0.30 P	0.35 Paise
Actual Hours worked	8,200	5,800

Sol :

(Oct.-19, Imp.)

Refer Unit-II, Prob. No. 11

8. Calculate Overhead Variances :

Particulars	Standard	Actual
No. of Units	4,000	3,800
Working Days	20	21
Fixed Overhead	Rs.40,000	Rs. 39,000

Sol :

(June-19, Imp.)

Refer Unit-II, Prob. No. 13

UNIT - III

1. What do you mean by Financial Statements? Explain the nature of Financial Statements.

Ans :

(Imp.)

Refer Unit-III, Q.No. 1

2. How far financial statements are helpful to the parties interested to know the position of the enterprise?

Ans :

(Imp.)

Refer Unit-III, Q.No. 4

3. Explain the various techniques of financial statement analysis.

Ans :

(Imp.)

Refer Unit-III, Q.No. 6

4. Explain the utility of ratio analysis.

Ans :

(Imp.)

Refer Unit-III, Q.No. 15

5. Explain the limitations of ratio analysis.

Ans :

(Imp.)

Refer Unit-III, Q.No. 16

6. Calculate :

- (i) Gross Profit Ratio
- (ii) Net Profit Ratio
- (iii) Operating Ratio
- (iv) Operating Profit Ratio.

Particulars	₹
Sales	10,00,000
Cost of goods sold	6,00,000
Operating Expenses	2,00,000
Non-operating Expenses	40,000

Sol :

(Imp.)

Refer Unit-III, Prob. No. 19

7. Following is the Profit and Loss Account to Electro Matrix Ltd. for the year ended 31st December, 2011:

Particulars	₹	Particulars	₹
To Opening Stock	1,00,000	By Sales	5,60,000
To Purchases	3,50,000	By Closing Stock	1,00,000
To Wages	9,000		
To Gross Profit c/d	2,01,000		
	6,60,000		6,60,000
To Administrative expenses	20,000	By Gross Profit b/d	2,01,000
To Selling and Distribution Expenses	89,000	By Interest on Investments (Outside business)	10,000
To Non-operating expenses	30,000	By Profit on Sale of Investments	8,000
To Net Profit	80,000		
	2,19,000		2,19,000

You are required to calculate :

- 1. Gross Profit Ratio
- 2. Net Profit Ratio
- 3. Operating Ratio
- 4. Operating Profit Ratio
- 5. Administrative Expenses Ratio

Sol :

(Imp.)

Refer Unit-III, Prob. No. 20

8. The following is the Trading and P&L A/c for the year ended 31st March, 2013 and the Balance Sheet on that date of ABC Ltd.

Particulars	₹	Particulars	₹
To Opening Stock	9,950	By Sales	85,000
To Purchases	54,525	By Closing Stock	14,900
To Wages	1,425		
To Gross Profit	34,000		
	99,900		99,900
To Administration Expenses	15,000	By Gross Profit	34,000
To Selling expenses	3,000	By Interest	300
To Financial expenses	1,500	By Profit on sale of shares	600
To Loss on sale of Assets	400		
To Net Profit	15,000		
	34,900		34,900

Balance Sheet

Liabilities	₹	Assets	₹
Share Capital	20,000	Land & Buildings	15,000
Reserves	9,000	Plant & Machinery	8,000
Current Liabilities	13,000	Stock	14,900
P&L A/c	6,000	Debtors	7,100
Cash at Bank	3,000		
	48,000		48,000

Calculate :

- | | |
|------------------------|----------------------------|
| (i) Gross profit ratio | (ii) Net profit ratio |
| (iii) Operating ratio | (iv) Current ratio |
| (v) Acid test ratio | (vi) Stock turnover ratio. |

Sol :

(Imp.)

Refer Unit-III, Prob. No. 21

9. From the following information, make out a statement of proprietors fund with as many details as possible:
- Current ratio = 2.5
 - Liquid ratio = 1.5
 - Proprietary ratio = 0.75 (Fixed Assets/Proprietary Fund)
 - Working capital = ₹ 60,000

(e) Reserves and surplus = ₹ 40,000

(f) Bank O.D. = 10,000.

Note: There are no long term loans or investments in fictitious assets.

Sol.:

(Imp.)

Refer Unit-III, Prob. No. 23

10. From the following details, make out the Balance Sheet with as many detail as possible.

Stock Velocity	6	Gross profit Turnover Ratio	20%
Capital turnover Ratio	2	Debtors velocity	2 months
Fixed Assets Turnover	4	Creditors Velocity	73 days

The gross profit was ₹ 60,000, Reserves and surplus amounts to ₹ 20,000, Closing stock was ₹ 5,000 in excess of opening stock.

Sol.:

(Imp.)

Refer Unit-III, Prob. No. 25

UNIT - IV

1. Define a fund flow statement. Write a note on the importance of funds flow statement.

Ans.:

(Imp.)

Refer Unit-IV, Q.No. 2

2. Draw the proforma of statement of schedules of changes in working capital.

Ans.:

(Imp.)

Refer Unit-IV, Q.No. 7

3. Explain the format of adjusted profit and loss account.

Ans.:

(Imp.)

Refer Unit-IV, Q.No. 9

4. From the following condensed balance sheets of Abhishek Ltd. for the year ending 31st March, 2012 and 2013, draw out a Funds Flow Statement and a Statement of Changes in Working Capital.

Liabilities	2012 (₹)	2013 (₹)	Assets	2012 (₹)	2013 (₹)
Equity Share Capital	3,00,000	4,00,000	Goodwill	60,000	55,000
6% Red. Pref. Shares Capital	80,000	50,000	Land & Buildings	1,25,000	85,000
Capital Reserve	-	20,000	Plant & Machinery	1,20,000	2,25,000
General Reserve	30,000	40,000	Furniture	15,000	12,000
P&LA/c	26,000	35,000	Trade Investment	12,000	48,000
Sundry Creditors	30,000	58,000	Sundry Debtors	65,000	1,05,000
BIP	12,000	8,000	Inventories	90,000	84,000
O/S Expenses	6,000	5,000	B/R	16,000	30,000
Prop. Dividend	30,000	42,000	Cash	13,000	20,000
Provision for Taxation	32,000	36,000	Bank	15,000	20,000
			Preliminary Expenses	15,000	10,000
	<u>5,46,000</u>	<u>6,94,000</u>		<u>5,46,000</u>	<u>6,94,000</u>

Additional information :

- (i) A piece of land has been sold out in 2013 and the balance has been revalued. Profit on sale and revaluation being transferred to capital reserve account.
- (ii) Depreciation on Plant and Machinery has been written off ` 24,000 in 2013.
- (iii) No depreciation is charged on land and buildings.
- (iv) A machinery was sold for ` 16,000 (WDV Being ` 20,000)
- (v) No furniture is sold out in the year 2013.
- (vi) An interim dividend of ` 20,000 has been paid.
- (vii) ` 3000 has been received as dividend on trade investments.

Sol/:

(Imp.)

Refer Unit-IV, Prob. No. 10

5. From the following Balance Sheets of Pioneers Ltd as on 31.3.12 and 31.3.2013, prepare

- (i) A funds flow statement
- (ii) A schedule of changes in the working capital.

Liabilities	2012 (`)	2013 (`)	Assets	2012 (`)	2013 (`)
Share capital	4,00,000	4,00,000	Goodwill	48,000	48,000
General Reserve	56,000	72,000	Building	1,60,000	1,44,000
P & L A/c	64,000	62,000	Plant	1,48,000	1,44,000
Sundry Creditors	32,000	11,600	Investments	40,000	48,000
Bills payable	4,800	3,200	Bills receivable	8,000	8,800
Provision for taxation	64,000	72,000	Stock	1,20,000	93,600
Provision for Doubtful debts	1,600	2,400	Debtors	72,000	76,000
			Cash at Bank	26,400	60,800
	<u>6,22,400</u>	<u>6,23,200</u>		<u>6,22,400</u>	<u>6,23,200</u>

Additional Information:

- (i) Depreciation on plant ` 32,000
- (ii) Provision for taxation of ` 76,000 was made during the year 2013
- (iii) Interim Dividend paid ` 32,000

Sol/:

(Imp.)

Refer Unit-IV, Prob. No. 11

6. Following are the Balance Sheets of Rani Exports Ltd. for the years 2009 and 2010. You are required to prepare funds flow statement.**Balance Sheet**

Liabilities	2009 (`)	2010 (`)	Assets	2009 (`)	2010 (`)
Creditors for goods	80,000	1,25,000	Stock	1,00,000	1,35,000
Creditors for expenses	5,000	6,000	Sundry Debtors	1,12,500	1,22,500
Bills payable	50,000	55,000	Cash	20,000	32,500

Share Capital	2,75,000	3,10,000	Prepaid expenses	12,500	11,000
Securities premium	25,000	40,000	Plant and Machinery	3,50,000	4,40,000
Profit & Loss Account	50,000	1,00,000	Goodwill	50,000	35,000
Debentures	1,50,000	1,00,000	Investments	90,000	90,000
General Reserve	1,00,000	1,30,000			
	7,35,000	8,66,000		7,35,000	8,66,000

Sol.:

(Imp.)

Refer Unit-IV, Prob. No. 12

UNIT - V

1. Describe the advantage and limitations of cash flow statement.

Ans.:

(Imp.)

Refer Unit-V, Q.No. 4

2. Explain the procedure for preparing cash flow statement.

Ans.:

(Imp.)

Refer Unit-V, Q.No. 5

3. Compare and contrast funds flow statement and cash flow statement.

Ans.:

(Imp.)

Refer Unit-V, Q.No. 7

4. The balance sheets of Wesern Manufacturers Ltd. as on 1st April, 2005

Liabilities	1st April (2005) Rs.	31st March (2006) Rs.	Assets	1st April (2005) Rs.	31st March (2006) Rs.
Share Capital :	2,50,000	2,50,000	Land and Buildings	1,50,000	1,50,000
5% Debentures	1,00,000	80,000	Machinery	82,000	90,000
Sundry Creditors	1,15,000	1,08,000	Stock in Trade	1,00,000	1,14,000
Profit & Loss Account	20,000	27,000	Sundry Debtors	85,000	81,000
Depreciation Fund Reserve for	40,000	44,000	Cash and Bank Balance Temporary	60,000	55,000
Contingencies	70,000	55,000	Investments	1,31,000	95,000
Outstanding Expenses	15,000	24,000	Prepaid Expenses	2,000	3,000
	6,10,000	5,88,000		6,10,000	5,88,000

The following additional information is also available

- (a) New machinery was purchased for Rs. 30,000 but old machinery costing Rs. 15,000 was sold for Rs. 5,000 accumulated depreciation was Rs. 8,000.
- (b) Rs. 20,000, 5% debentures were redeemed by purchase from open market @ Rs. 96.

- (c) Rs. 36,000 investments were sold at book value.
 (d) 12% dividend was paid in cash.
 (e) Rs. 15,000 was debited to contingency reserve for settlement of previous tax liability.
 You are required to prepare Cash Flow Statement by Indirect Method.

Sol :

(Imp.)

Refer Unit-V, Prob. No. 7

5. From the following information, prepare cash flow statement :

Balance - Sheet

Liabilities	1-1-2012	31-12-2-12	Assets	1-1-2012	31-12-2012
Share Capital	2,00,000	2,00,000	Cash	8,000	10,000
Profit & Loss	50,000	90,000	Bank	22,000	20,000
Bank Loan	10,000	-	Debtors	10,000	20,000
Outstanding Expenses	5,000	1,000	Stock	25,000	15,000
Creditors	15,000	20,000	Non-current asset	2,35,000	2,75,000
Provision for tax	20,000	25,000			
Unclaimed Dividend	-	4,000			
	3,00,000	3,40,000		3,00,000	3,40,000

Net profit for the year 2012 after providing Rs. 20,000 as depreciation was Rs. 60,000. During the year 2012, company declared equity dividend @ 10% and paid Rs. 15,000 as Income-tax.

Sol :

(Imp.)

Refer Unit-V, Prob. No. 9

6. From the following details, prepare a cash flow statement.

Balance Sheets

Liabilities	2017 (₹)	2018 (₹)	Assets	2017 (₹)	2018 (₹)
Share Capital	10,000	15,000	Land	4,000	4,000
P & L A/c	5,000	8,000	Machinery	3,000	5,000
General Reserve	4,000	6,000	Stock	10,000	12,000
Creditors	8,000	12,000	Debtors	10,000	15,000
Bills payable	5,000	3,000	Cash	5,000	8,000
	32,000	44,000		32,000	44,000

Additional Information :

During the year depreciation charged on machinery for ₹ 1,000 and dividend paid ₹ 2,000.

Sol :

(Jan.-19, Imp.)

Refer Unit-V, Prob. No. 14

7. From the following information prepare cash flow statement by indirect method of Ram Business Corporation.

Liabilities and Capital	Jan.-1, 2015	31-12-2015	Assets	Jan.-1, 2015	31-12-2015
Share capital	35,000	43,500	Cash and bank	40,000	44,400
Surplus	15,000	19,500	Accounts receivable	10,000	20,700
Bonds payable	22,000	22,000	Inventories	15,000	15,000
Bonds payable discount	(2,000)	(1,800)	Land and building	4,000	4,000
Current liabilities	30,000	20,000	Business premises	20,000	16,000
Bank loan	-	12,000	Plant and equipment	15,000	17,000
			Accumulated depreciation	(5,000)	(2,800)
			Patents and trademarks	1,000	900
	1,00,000	1,15,200		1,00,000	1,15,200

Additional Information

- (i) A building that costs ₹ 4,000 and which had a book value at ₹ 1,000 was sold for ₹ 1,400.
- (ii) The depreciation charge for the period was ₹ 800.
- (iii) There was a ₹ 5,000 issue of capital stock.
- (iv) Cash dividend of ₹ 2,000 and stock dividend of ₹ 3,500 were declared.

Sol :

(Aug.-18, Imp.)

Refer Unit-V, Prob. No. 15

UNIT I

Introduction to Management Accounting & Marginal Costing:

Meaning and Importance of Management Accounting – Marginal Cost Equation – Difference between Marginal Costing and Absorption Costing – Application of Marginal Costing – CVP Analysis – Break Even Analysis: Meaning – Assumptions – Importance - Limitations. Marginal Costing for Decision Making-Make or Buy – Add or Drop Products – Sell or Process Further – Operate or Shut-down – Special Order Pricing – Replace or Retain.

1.1 MANAGEMENT ACCOUNTING

1.1.1 Meaning

Q1. Define Management Accounting. Discuss the nature and scope of Management Accounting.

Ans : (Oct.-20, Oct.-19, June-19)

Meaning

Management Accounting is the presentation of accounting information in such a way as to assist management in the creation of policy and the day-to-day operation of an undertaking. Thus, it relates to the use of accounting data collected with the help of financial accounting and cost accounting for the purpose of policy formulation, planning, control and decision-making by the management. Management accounting links management with accounting as any accounting information required for taking managerial decisions is the subject matter of management accounting. Some leading definitions of Management Accounting are given below :

Definitions

- (i) **According to R.N. Anthony** "Management Accounting is concerned with accounting information that is useful to management."
- (ii) **According to Batty** "Management Accounting is the term used to describe accounting methods, systems and techniques which coupled with special knowledge and ability, assists management in its task of maximising profits or minimising losses. Management Accountancy is the blending together into a coherent whole, financial accounting, cost accountancy and all aspects of financial management."

(iii) **According to CIMA. London** "Management Accounting is the application of professional knowledge and skill in the preparation of accounting information in such a way as to assist management in the formulation of policies and in the planning and control of the operations of the undertaking."

(iv) **According to American Accounting Association** Management Accounting is "the application of appropriate techniques and concepts in processing historical and projected economic data of an entity to assist management in establishing plans for reasonable economic objectives and in the making of rational decisions with a view towards these objectives".

From the above it is clear that management accounting uses all techniques of financial accounting, cost accounting and statistics to collect and process data for making it available to management so that it can take decisions in a scientific manner.

Nature

The following points may be noted in this respect:

(i) Technique of selective nature

Management Accounting is a technique of selective nature. It takes into consideration only that data from the income statement and position statement which is relevant and useful to the management. Only that information is communicated to the management which is helpful for taking decisions on various aspects of the business.

(ii) Provides data and not the decisions

The management accountant is not taking any decision but provides data which is helpful to the management in decision-making. It can inform but cannot prescribe. It is just like a map which guides the traveller where he will be if he travels in one direction or another. Much depends on the efficiency and wisdom of the management for utilising the information provided by the management accountant.

(iii) Concerned with future

Management Accounting unlike the financial accounting deals with the forecast with the future. It helps in planning the future because decisions are always taken for the future course of action.

(iv) Analysis of different variables

Management accounting helps in analysing the reasons as to why the profit or loss is more or less as compared to the past period. Moreover, it tries to analyse the effect of different variables on the profits and profitability of the concern.

(v) No set formats for information

Management accounting will not provide information in a prescribed proforma like that of financial accounting. It provides the information to the management in the form which may be more useful to the management in taking various decisions on the various aspects of the business.

Scope

The scope of management accounting is very wide and broad-based. It includes all information which is provided to the management for financial analysis and interpretation of the business operations. The following field of activities are included in the scope of this subject:

(i) Financial accounting

Financial accounting though provides historical information but is very useful for future planning and financial forecasting. Designing of a proper financial accounting

system is a must for obtaining full control and co-ordination of operations of the business.

(ii) Cost accounting

It provides various techniques of costing like marginal costing, standard costing, differential and opportunity cost analysis, etc., which play a useful role in the operation and control of the business undertakings.

(iii) Budgeting and forecasting

Forecasting on the various aspects of the business is necessary for budgeting. Budgetary control controls the activities of the business through the operations of budget by comparing the actuals with the budgeted figures, finding out the deviations, analysing the deviations in order to pinpoint the responsibility and take remedial action so that adverse things may not happen in future. Both the techniques are necessary for management accountant.

(iv) Cost control procedures

These procedures are integral part of the management accounting process and includes inventory control, cost control, labour control, budgetary control and variance analysis, etc.

(v) Reporting

The management accountant is required to submit reports to the management on the various aspects of the undertaking. While reporting, he may use statistical tools for presentation of information as graphs, charts, pictorial presentation, index numbers and other devices in order to make the information more impressive and intelligent.

(vi) Methods and procedures

It includes in its study all those methods and procedures which help the concern to use its resources in the most efficient and economical manner. It undertakes special cost studies and estimations and reports on cost volume profit relationship under changing circumstances.

(vii) Tax accounting

It is an integral part of management accounting and includes preparation of

income statement, determination of taxable income and filing up the return of income etc.

(viii) Internal financial control

Management accounting includes the internal control methods like internal audit, efficient office management, etc.

(ix) Interpretation

Management accounting is closely related to the interpretation of financial data to the management and advising them on decision-making.

(x) Office services

The management accountant may be required to maintain and control office services in some organizations. This function includes data processing, reporting on best use of mechanical and electronic devices, communication, etc.

(xi) Evaluating the performance of the management

Management accounting provides methods and techniques for evaluating the performance of the management. It evaluates the performance of the management in the light of the objectives of the organization. Thus, it helps in the implementation of the principle of management by exception. It, therefore, can be said that management accounting services not only as a tool in the hands of the management for evaluating the performance of its subordinates, but also provides methods and techniques for evaluating the performance of the management itself.

Q2. Explain the features of management accounting.

Ans :

(June-19)

The important features of management or managerial accounting are as follows,

1. Facilitates Internal Reporting

Managerial accounting is very useful for the managers in taking decisions of the internal

matters of the organization. It facilitates in internal reporting.

2. Offers Useful Information

Managerial accounting gathers information, categorizes it and then provides the data according to the needs of the management and managers.

3. Uses Cause and Effect Relationship

Managerial accounting makes use of the cause and effect relationship and helps in finding out the reasons for loss or profit of the business.

4. Organized Activity

Management is not an isolated activity but is essentially a teamwork in formally organized groups.

5. Follows No Special Methods and Rules

Managerial accounting does not follow any particular set rules and methods. It basically follows special rules and methods according to the suitability of the management.

6. Provides Future Information

Managerial accounting basically provides future oriented information which helps in taking decisions to the management.

7. Maintains Confidentiality

Managerial accounting allows only the top executives of the management to go through the financial reports of the business. It is mainly concerned with confidential financial reports.

8. Implements on Special Procedures/Methods

Managerial accounting implements special methods and concept which are helpful to organization. The methods used in managerial accounting are standard costing, marginal costing, financial analysis and planning and so on.

Q3. Explain the functions of Management Accounting.

Ans : (Oct.-19, Imp.)

The main functions of management accounting are :

(i) Forecasting and planning

One of the important functions of management accounting is to provide necessary information and data for making short-term and long-term forecasts and planning the operations of the business. For doing this, the management accountant uses techniques of statistics, like probability, trend study of correlation and regression; budgeting and standard costing; capital budgeting; marginal costing and funds flow statement etc. These are important tools in the hands of management accountant for the planning of the business.

(ii) Organising

The management accountant helps the management in organising the human and non-human resources of the business by analysing different functions and assigning specific responsibilities. He tries to organise the accounting and finance function of the business on the modern lines.

(iii) Co-ordinating

The management accountant increases the efficiency of organization and maximise its profits by providing different tools of coordination as budgeting, financial reporting, financial analysis and interpretation etc. It helps the management by reconciling the cost and financial accounts, by preparing budgets and setting the standard costs and in analysing variances in costs to facilitate management by exception.

(iv) Controlling performance

The management accountant helps in controlling the performance of the organization by using standard costing, budgetary control, accounting ratios, cash

and funds flow statements, cost reduction programmes and evaluating the capital expenditure proposals and return on investment.

(v) Financial analysis and interpretation

The management accountant analyses the data and presents it before the management in non-technical manner along with his comments and suggestions so that the owners and the top personnels in the management may understand it and take decisions without any difficulty.

(vi) Communication

The management accountant prepares various reports to communicate the results to the superior, to motivate the employees, to exercise effective control on their activities and to enable the management to take sound decisions. He also communicates with the outside world about the progress of the business through published accounts and returns.

(vii) Special studies

The management accountant tries to maximise the profits of the concern by conducting various cost and economic studies on regular basis. He tries to determine the needs of long-term and short-term capital, recommend appropriate capitalisation for the enterprise, evaluation of alternative capital expenditure proposals and their impact on the return and profits of the concern.

(viii) Protection of business assets

The management accountant will be responsible for the protection of business assets. He is to see that sufficient funds are available for repairs, maintenance and replacement of fixed assets so that production capacity of the enterprise may not be badly affected. He is also to see that business assets are properly insured.

(ix) Tax policies

The management accountant is responsible for tax policies and procedures. He will make available the reports required by various

authorities. He will make proper provision for taxation and he is to ensure that quarterly payments of taxes paid in advance as required by the Income Tax Act are made in time to avoid penal interest payment on delayed payment of tax.

(x) Miscellaneous functions

Besides the above functions, the management accountant supplies useful information to different functional authorities, provides necessary accounting information and advice for price determination and pricing decisions and helps to make strategic decisions as seasonal or temporary suspension of production, make or buy decisions, replacement decisions and expansion or closure of particular division or department, etc.

1.1.2 Importance of Management Accounting

Q4. Explain the need and Importance of Management Accounting.

Ans : (Oct.-20, Imp.)

1. Helps In Making Plans

Management accounting assists organization in making better plans for future activities. It supplies all financial and non-financial data to management on a regular basis. Managers through the availability of all these information are able to perform better analysis and forecasting which enables them in framing proper plans.

2. Assist In Decision Making

Efficient decision making is a major role played by management accounting. It collects and analyses all financial information available within organization and present them in simplified charts, tables (or) graphs. Management gets better understanding regarding organization affairs and is able to take correct decisions at right time.

3. Measures The Performance

Management accounting monitors and measures the overall performance of

organization. It uses various tools like variance analysis which measures the company performance with pre-established standards for finding out the deviations. Managers by identifying all variations in performance of company are able to take corrective measures accordingly for removing them.

4. Increases The Efficiency

This accounting branch aims at raising the overall efficiency of business organizations. Management accounting sets target for each division in advance and checks whether they fulfill all targets. It ensures that all resources are fully utilized which helps in improving the efficiency.

5. Better Service To Customers

Management accounting focuses on better service to customers by providing them quality goods at fair prices. It helps in controlling the prices of products by employing cost control devices. In addition to that, it sets various quality standards to be met by organization for producing their goods.

6. Raises The Profitability

It has an efficient role in enhancing the profitability of organizations. It makes companies cost conscious and assist in avoiding all extra expenditures. Management accounting uses techniques such as budgetary control and capital budgeting for reducing the expenses which helps in earning better profits.

7. Provides Reliability

Management accounting adds reliability to management decisions by providing them genuine information. It uses proper scientific tools and techniques for analysis purposes which helps managers in the proper management of business operations.

Q5. What are the objectives of Management Accounting.

Ans : (June-19)

The primary objective of management accounting is to enable management to maximise profits or minimise losses. This is done through the

presentation of statements in such a way that management is able to take correct policy decisions. The following are the important objectives of management accounting :

1. Planning and Policy Formulation

The object of management accounting is to supply necessary data to the management for formulating plans. Planning is essentially related to taking decisions for future. It also includes forecasting, setting goals and deciding alternative courses of action. Management accountant prepares statements of past results and gives estimations for the future. He also gives his assessment of various facets and gives his preference for a particular alternative. The figures supplied and opinion given by the management accountant help management in planning and policy formation.

2. Helpful in Controlling Performance

Management accounting devices like standard costing and budgetary control are helpful in controlling performance. The work is divided into different units and separate goals are set up for each unit. The performance of every unit is made the responsibility of a particular person. The required authority for getting the work done is also delegated to the concerned persons. The actual results are compared with predetermined objectives. The management is able to find out the deviations and take necessary corrective measures. Different departmental heads are associated with preparing budgets and setting up goals. The management accountant acts as a coordinating link between different departments and he also monitors their performance to the top management. The management is able to control performance of each and every individual with the help of management accounting devices.

3. Helpful in Organising

Organization is related to the establishment of relationship among different individuals in the concern. It also includes the delegation of authority and fixing of responsibility. Management accounting is connected with the establishment of cost centers, preparation of budgets, preparation of cost control accounts and fixing of responsibility for different functions. All these aspects are helpful in setting up an effective and efficient organizational framework.

4. Helpful in Interpreting Financial Information

The main objective of management accounting is to present financial information to the management in such a way that it is easily understood. Financial information is of a technical nature and managerial personnel may not be able to understand the significance and utility of various financial statements. Management accountant explains these statements to the management in a simple language. If necessary, he uses statistical devices like charts, diagrams, index numbers, etc. so that the information is easily followed.

5. Motivating Employees.

Management accounting helps the management in selecting best alternatives of doing the things. Targets are laid down for the employees. They feel motivated in achieving their targets and further incentives may be given for improving their performance.

6. Helpful in Making Decisions

The management has to take certain important decisions. A decision may have to be taken about the expansion or diversification of production. There may be a question of replacement of labour with machine or introduction of latest technological

devices. Management accountant prepares a report on the feasibility of various alternatives and makes an assessment of their financial implications. The information provided by the accountant helps management in selecting a suitable alternative and taking correct decisions.

7. Reporting to Management

One of the primary objectives of management accounting is to keep the management fully informed about the latest position of the concern. This helps management in taking proper and timely decisions. The management is kept informed through regular financial and other reports. The performance of various departments is also regularly communicated to the top management.

8. Helpful in Co-ordination

Management accounting provides tools which are helpful in coordinating the activities of different sections or departments. Co-ordination is done through functional budgeting. Management accountant acts as a co-ordinator and reconciles the activities of different sections.

9. **Helpful in Tax Administration.** The complexities of tax system are increasing every day. Management accounting helps in assessing various tax liabilities and depositing correct amount of taxes with the concerned authorities. Various tax returns are to be filed under different tax laws. Tax administration is carried on with the advice and guidance of the management accountant.

Q6. Explain the advantages and limitations of Management Accounting.

Ans :

(Oct.-19)

Advantages

1. It facilitates the management in controlling the business operations effectively with the help of techniques like standard costing and budgetary control.

2. It helps the management in planning and forecasting the firm's activities.
3. It guides the management in taking adequate actions as per the changing economic environment of business.
4. It assists the management in coordinating the activities of different departments with the help of techniques like budgeting, reporting and interpretation. This in turn helps in achieving the organizational objectives.
5. It assists the management in organizing the firm's activities.
6. It facilitates the management in evaluating the financial performance of the business.
7. It also creates employment opportunities for management accountants.
8. Financial accounting, cost accounting, statistics, economics and sociology are the related subjects of management accounting.

Limitations

Though management accounting is helpful in providing guidelines for planning, directing and controlling functions, still its effectiveness is limited by a number of reasons. Limitations of management accounting are explained as follows :

1. Based on Accounting Information

Management accounting is based on data supplied by financial and cost accounting. Historical data is used to make future decisions. The correctness and effectiveness of managerial decisions will depend upon the quality of data on which these decisions are based. If financial data is not reliable then management accounting will not provide correct analysis. Because management accounting has to depend upon the information collected by other sources, its effectiveness is limited to the reliability of those sources.

2. Lack of Knowledge

The use of management accounting requires the knowledge of a number of related subjects. Management should be conversant with accounting principles, statistics, economics, principles of management, etc., and only then management accounting can be effectively utilised. Deficiency in knowledge of any of these subjects limits the use of management accounting. So the application of management accounting will be useful if persons connected with decision-making process have proper understanding not only of management accounting but also of related subjects.

3. Intuitive Decisions

Though management accounting provides scientific analysis of various situations and enables decision taking based on facts and figures, there is a tendency to make decisions intuitively. Management may avoid a lengthy course of deciding things and may take an easy course of arriving at decisions using intuition. Intuitive decisions limit the usefulness of management accounting.

4. Not an Alternative to Administration

Management accounting does not provide an alternative to administration. The tools and techniques of management accounting provide only information and not decisions. Decisions are to be taken by the management and their implementation is also done by management. So management accounting has supplementary service function and has no final say either in taking decisions or in their implementation.

5. Top Heavy Structure

The installation of a management accounting system needs an elaborate organisational system. A large number of rules and regulations are also required to make this system workable and effective, introduction of management accounting system is a costly affair and can be used by big concerns only. Smaller units cannot afford to use this system because of heavy cost.

6. Evolutionary Stage

Management accounting is only in a developmental stage, it has not yet reached a final stage. The techniques and tools used by this system give varying and differing results. The conclusions taken from analysis and interpretation are not the same. It will take some time before management accounting takes a final shape.

7. Personal Bias

The interpretation of financial information depends upon the capability of interpreter as one has to make a personal judgement. There is every likelihood of personal bias in analysis and interpretation. Personal prejudices and bias affect the objectivity of decisions.

8. Psychological Resistance

The installation of management accounting involves basic change in organizational set up. New rules and regulations are also required to be framed which affect a number of personnel and hence there is a possibility of resistance from some quarters or the other.

Q7. How does management accounting differ from financial accounting.

Ans :

(June-19, Imp.)

S.No.	Nature	Financial Accounting	Management Accounting
1.	Object	The object is to record various transactions and to know the financial position and to find out profit or loss at the end of the financial year.	The main objective is to provide information to management for formulating policies and plans.
2.	Nature	It is mainly concerned with historical data. It records only those transactions which have already taken place.	It deals with projection of data for the future. It uses historical data only for taking decisions for the future.
3.	Subject Matter	It is concerned with assessing the results of the business as a whole.	It deals separately with different units, departments and cost centres.
4.	Legal Compulsion	The preparation of financial accounts is compulsory in certain undertakings while these are necessity in others.	It is not compulsory. It is only a service function and is helpful in administration of the business.
5.	Precision	In financial accounting only actual figures are recorded with perfect accuracy and precision.	In management accounting, no emphasis is given to actual figures, the approximate figures are considered more useful.
6.	Reporting	Financial reports are prepared not only for the benefit of the concern but also for outsiders.	Management accounting reports are meant for internal use only.
7.	Description	It records only those transactions which can be measured in monetary terms.	It uses both monetary and non-monetary events or information.
8.	Quickness	Reporting of financial accounting is slow and time consuming.	Reporting of management accounting is very quick.
9.	Accounting Principles	It is governed by generally accepted principles and conventions.	No set principles are followed in management accounting.
10.	Period	Financial accounts are prepared for a particular period.	It supplies information from time to time during the whole year.
11.	Publication	Financial statements are published for the benefit of the public.	Management accounting statements are not published.
12.	Audit	Financial accounts can be got audited, under company law, audit is compulsory.	Management accounts cannot be audited.

Q8. Define Cost Accounting. Distinguish between cost and management accounting.

Ans :

(Oct.-19, Imp.)

Meaning

Costing is a specialised branch of accounting. It has been developed because of limitations of financial accounts. In the present day it is absolutely necessary that a business concern should operate its activities with utmost efficiency and at the lowest cost. The need for determination and control of costs necessitated new set of principles of accounting and thus emerged 'cost accounting' as a specialised branch of accounting.

The term 'cost' has a wide variety of meanings. Different people use this term in different senses for different purposes. For example, while buying a book, you generally ask, "how much does it cost"? Here the word cost means price. But in management terminology, the term cost refers to expenditure and not the price. For our purposes, cost is not the same as price.

Definitions

- (i) The costing terminology of the Institute of Cost and Works Accountants, London defines cost as "the amount of expenditure (actual or notional) incurred on or attributable to a given thing." Thus, cost refers to something that must be sacrificed to obtain a particular thing.

Costing is the technique and process of ascertaining costs. It consists of the principles and rules which are used for ascertaining the costs of products and services.

- (ii) **According to Harold J. Wheldon**, "costing is the classifying and appropriate allocation of expenditure for the determination of the cost of products or services, and for the presentation of suitably arranged data for purposes of control and guidance of the management."

- (iii) In simple words, costing is a systematic procedure of determining the unit cost of product/ service.

S.No.	Nature	Cost Accounting	Management Accounting
1.	Objective	The objective of cost accounting is to record the cost of producing a product or providing a service.	The purpose of management accounting is to provide information to the management for planning coordinating, decision making and control.
2.	Scope	The scope is limited as it deals primarily with cost ascertainment.	The scope is very wide. It includes financial accounting, cost accounting, budgeting, tax planning, etc.
3.	Nature	Cost accounting uses both past figures.	and present It is generally concerned with the projection of figures for the future.
4.	Data used	Only quantitative aspect is recorded.	It uses both quantitative and qualitative information.
5.	Development	The development of cost accounting is related to industrial revolution, it evolved as supplementary accounting method.	It has developed only in the last forty years.
6.	Principles followed	Certain principles and procedures are followed for recording cost of different products.	No specific rules and procedures are followed in reporting management accounting.

Q9. Describe various tools and techniques of management accounting.

Ans :

Management Accounting use different tools and techniques to operate efficiently. Some of the techniques are,

1. Financial Accounting

It acts as a backbone of management accounting as it provides accounting information to management accountant. This information is rearranged and used for reporting to management.

2. Cost Accounting

Information relating to cost of production is provided by cost accounting which is used by management accounting for comparing actual cost with standard cost.

3. Cost Control Techniques

Many cost control techniques like marginal costing, differential costing, budgetary control and standard costing are used by management accounting to analyze the efficiency of business.

4. Analysis of Financial Statements

The various techniques of analysis and interpretation like comparative financial statements, common size statements, funds flow statement, cash flow statement and ratio analysis are used by management accounting to focus on the performance of business.

5. Financial Management

Different techniques of financial management are used by management accounting like degree of trading on equity, proportion of equity, loan capital and preference share, sources of capital, analyzing alternate investment proposals.

1.2 MARGINAL COSTING**Q10. What is Marginal Costing? Explain its characteristics and assumptions.**

Ans :

Definition

The Institute of Cost and Management Accountants, London, has defined Marginal Costing as "the ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs". "In this technique of costing only variable costs are charged to operations, processes or products, leaving all indirect costs to be written off against profits in the period in which they arise."

Thus, in this context, marginal costing is not a system of costing such as process costing, job costing, operating costing, etc. but a technique which is concerned with the changes in costs and profits resulting from changes in the volume of output. Marginal costing is also known as 'variable costing'.

Characteristics

The technique of marginal costing is based on the distinction between product costs and period costs. Only the variable costs are regarded as the costs of the products while the fixed costs are treated as period costs which will be incurred during the period regardless of the volume of output.

The main characteristics of marginal costing are as follows :

1. It is a technique of analysis and presentation of costs which help management in taking many managerial decisions and is not an independent system of costing such as process costing or job costing.

2. All elements of cost production, administration and selling and distribution are classified into variable and fixed components. Even semi-variable costs are analysed into fixed and variable.
3. The variable costs (marginal costs) are regarded as the costs of the products.
4. Fixed costs are treated as period costs and are charged to profit and loss account for the period for which they are incurred.
5. The stocks of finished goods and work-in-process, are valued at marginal costs only.
6. Prices are determined on the basis of marginal cost by adding 'contribution' which is the excess of sales or selling price over marginal cost of sales.

Assumptions

The technique of marginal costing is based upon the following assumptions :

1. All elements of cost production, administration and selling and distribution can be segregated into fixed and variable components.
2. Variable cost remains constant per unit of output irrespective of the level of output and thus fluctuates directly in proportion to changes in the volume of output.
3. The selling price per unit remains unchanged or constant at all levels of activity.
4. Fixed costs remain unchanged or constant for the entire volume of production.
5. The volume of production or output is the only factor which influences the costs.

Q11. Explain in detail the importance of marginal costing.

Ans :

(Oct.-20)

Marginal costing technique plays a significant role in making the following important decisions,

1. Acceptance or Rejection of Orders

Marginal costing helps an organization to take correct decisions i.e., whether to accept or reject

orders which are being offered. This technique helps the organization in identifying its capacity to produce such orders. On the basis of which the organization may accept or reject the order.

2. Make or Buy Decisions

Management sometimes may be confronted with the problem of making a choice between manufacturing the component parts of product or buying them from outside.

Such a problem will arise when the firm has the idle capacity and the technical capacity of manufacturing the component parts. In arriving at such a make or buy decision, qualitative and quantitative factors relating to the problem will be taken into consideration. So make or buy decisions very important to marginal cost.

3. Pricing Decisions

Although prices are more controlled by market conditions and other economic factors than by decision of the management, yet fixation of selling price is one of the most important function of the management. This function is to be performed,

- (a) Under normal circumstances
- (b) In times of competitions
- (c) In times of trade depression
- (d) In accepting additional orders for utilizing idle capacity
- (e) In exporting and exploring new markets
- (f) Quotations in a jobbing undertaking.

In normal circumstances, the price fixed must cover total costs otherwise profits cannot be earned. It can also be fixed on the basis of marginal cost by adding a high margin to marginal cost which may be sufficient to contribute towards fixed expenses and profits.

4. Drop-down of Product

If a firm is engaged in producing a wide range of product in a product line the management needs to take certain important decisions with respect to the production of all products or to drop those products which are not contributing towards the firm's profitability or incurring losses. The decisions regarding dropping out a product or product line

are usually based on the comparative study of margin of contribution of each product.

Firms usually can take two types of decisions in this respect,

- (i) Firstly, either to drop the product that incurs loss and introduce another product which would contribute significantly towards the fixed costs.
- (ii) Secondly, to drop the product and emphasize more on other product of the firm's product line which possess greater contribution margin.

5. Shut-down Decisions

Marginal costing is usually used in taking decisions with respect to continue a plant/unit or to shut down it. The shutting down of a plant is basically of two types,

- (a) Temporary shut down
- (b) Permanent shut down (or) complete shut down.

6. Product Mix Decisions

Decisions regarding product mix are quite important in the firms which are engaged in producing multiple products. One needs to be very careful while taking decisions regarding suitable product mix that leads to maximum profitability. Thus, management must make use of marginal costing technique in order to serve the purpose of taking decisions with respect to determination of most profitable product mix, by comparing profitability or contribution of various products of the firm. Marginal costing also takes into consideration the limiting factors in terms of their contribution/unit while taking decisions regarding the suitable product mix.

Q12. Explain the advantages and limitations marginal costing.

Ans :

Advantages

The following are the main advantages of marginal costing :

- 1. It is simple to understand and easy to operate.
- 2. The valuation of closing stock under marginal

costing is done at marginal cost and thus prevents the illogical carry forward of fixed costs of one period to the next one as part of value of closing stock.

3. There is no problem of computing fixed overhead recovery rates and their under or over recovery as fixed overheads are charged against the contribution.
4. In marginal costing, it is established that profit is a function of sale and not of production as profit depends on sales volume and not on production volume. This can be verified by preparing a profit statement under marginal costing.
5. It facilitates control over variable costs by avoiding arbitrary apportionment or allocation of fixed costs.
6. It is a very useful tool of profit planning. It guides the management about the profitability of earning profit at various levels of production and sales.
7. It is very valuable technique in decision-making. It provides information to management in making-decisions like make or buy, selling price fixation, export decision etc.
8. It provides the management with useful techniques like break even analysis, P/V ratio etc.
9. It helps in cost control by concentrating on variable cost as the fixed cost is non-controllable in the short period.
10. It helps in evaluation of performance of different departments, divisions and salesmen.
11. It is a valuable adjunct to standard costing and budgetary costing.

Limitations

Marginal costing technique has certain limitations which must be kept in mind while making use of this technique.

1. The separation of expenses into fixed and variable presents certain technical difficulties whereas marginal costing technique assumes

that all expenses can be divided into fixed and variable. In fact, no variable cost is completely variable and no fixed cost is completely fixed. Actually, most of the expenses are semi-variable and it is difficult to segregate them into fixed and variable.

2. Time taken for the completion of jobs is not given due attention because marginal cost excludes fixed expenses which are connected with time. Fixed expenses should be considered if the suitable comparison of two jobs is to be made.
3. With the development of technology, fixed expenses have increased and their impact on production is much more than that of variable expenses. So, a system of costing which ignores fixed expenses is less effective because a significant portion of the cost representing fixed expenses is not taken care of.
4. It is possible that a concern using marginal costing technique may value work-in-progress and finished stock at marginal cost. The arguments against valuing these items at marginal costs are as follows :
 - (a) Balance Sheet will not exhibit a true and fair view because work-in-progress and finished stock will be shown at marginal costs which do not include fixed expenses. Thus, finished stock and work-in-progress will be understated in the Balance Sheet.
 - (b) In case of loss by fire, full loss on account of stock destroyed by fire cannot be recovered from the insurance company because marginal costing technique of valuation of stock will not take fixed expenses into consideration.
5. Marginal costing technique does away with the difficulties involved in the apportionment of overheads because fixed expenses are deducted from total contribution. But the problem of apportionment of variable costs still arises.

1.2.1 Marginal Cost Equation

Q13. Explain Marginal Cost Equation with an example.

Ans :

For the sake of convenience, elements of costs can be written in the form of an equation as follows:

$$\text{Sales} = \text{Variable Cost} + \text{Fixed Expenses} \pm \text{Profit/Loss}$$

(or)

$$\text{Sales} - \text{Variable Costs} = \text{Fixed Expenses} \pm \text{Profit/Loss}$$

(or)

$S - V = F \pm P$ where 'S' stands for sales, V for variable costs, F for fixed expenses, + P for profit and - P for loss.

(or)

$S - V = C$ because $F \pm P$, i.e., Fixed Expenses + Profit/Loss = Contribution.

In order to make profit, contribution must be more than the fixed expenses and to avoid any loss, contribution must be equal to the fixed expenses.

Marginal cost equation of $S - V = F \pm P$ is very useful to find any of the four factors, i.e., S, V, F or P if three of these factors are known.

Illustration

Determine the amount of fixed expenses from the following particulars :

Sales Rs. 2,40,000 : Direct Materials Rs. 80,000; Direct Labour Rs. 50,000; Variable Overheads Rs. 20,000 and Profit Rs. 50,000.

Sol:

The Marginal Cost Equation is

$$S - V = F + P$$

S or Sales = Rs. 2,40,000

V or Variable Costs = Rs. 80,000 + Rs. 50,000 + Rs. 20,000 = Rs. 1,50,000

(Direct Materials + Direct Labour + Variable Overheads)

P or Profit = Rs. 50,000 F or Fixed Expenses = ? (not given)

Applying the figures in the equation, we get

$$\text{Rs. } 2,40,000 - \text{Rs. } 1,50,000 = F + \text{Rs. } 50,000$$

$$\text{Or Rs. } 2,40,000 - \text{Rs. } 1,50,000 - \text{Rs. } 50,000 = F$$

$$\text{Or Rs. } 40,000 = F$$

$$\therefore \text{Fixed Expenses} = \text{Rs. } 40,000.$$

1.3 ABSORPTION COSTING

Q14. What is Absorption Costing? State the advantages and limitations of Absorption Costing.

Ans :

Meaning

Absorption Costing is a conventional technique of ascertaining cost. It is the practice of charging all costs both variable and fixed to operations, processes or products and is also known as 'full costing' technique. It is the oldest and widely used technique of ascertaining cost. Under this technique of costing, cost is made up of direct costs plus overhead costs absorbed on some suitable basis. Under this technique, cost per unit remains same only when the level of output remains same from time to time. But the level of output cannot remain same from time to time and so does the cost per unit because of fixed costs remaining same inspite of changes in the level of output. The change in cost per unit with a change in the level of output in absorption costing technique poses a problem to the management in taking managerial decisions. Absorption costing is useful if there is only one product, there is no inventory and overhead recovery rate is based on normal capacity instead of actual level of activity.

Advantages

The following are the main advantages of absorption costing :

- (i) It suitably recognises the importance of including fixed manufacturing costs in product cost determination and framing a suitable pricing policy. In fact all costs (fixed and variable) related to production should be charged to units manufactured. Price based on absorption costing ensures that all costs are covered. Prices are well regulated where full cost is the basis.
- (ii) It will show correct profit calculation in case where production is done to have sales in future (e.g., seasonal sales) as compared to variable costing.
- (iii) It helps to conform with accrual and matching concepts which require matching cost with revenue for a particular period.
- (iv) It has been recognised by various bodies as FASB (USA), ASC (UK), ASB (India) for the purpose of preparing external reports and for valuation of inventory.
- (v) It avoids the separation of costs into fixed and variable elements which cannot be done easily and accurately.
- (vi) It discloses inefficient or efficient utilisation of production resources by indicating underabsorption or overabsorption of factory overheads.
- (vii) It helps to make the managers more responsible for the costs and services provided to their centres/ departments due to correct allocation and apportionment of fixed factory overheads.
- (viii) It helps to calculate the gross profit and net profit separately in income statement.

Limitations

The following are the main limitations of absorption costing :

1. **Difficulty in comparison and control of cost:** Absorption costing is dependent on level of output ; so different unit costs are obtained for different levels of output. An increase in the volume of output normally results in reduced unit cost and a reduction in output results in an increased cost per unit due to the existence of fixed expenses. This makes comparison and control of cost difficult.

2. **Not helpful in managerial decisions:** Absorption costing is not very helpful in taking managerial decisions such as selection of suitable product mix, whether to buy or manufacture, whether to accept the export order or not, choice of alternatives, the minimum price to be fixed during the depression, number of units to be sold to earn a desired profit etc.
3. **Cost vitiated because of fixed cost included in inventory valuation:** Under absorption costing, a portion of fixed cost is carried forward to the next period because closing stock is valued at cost of production which is inclusive of fixed cost,
4. **Fixed cost inclusion in cost not justified:** Many accountants argue that fixed manufacturing, administration and selling and distribution overheads are period costs and do not produce future benefits and, therefore, should not be included in the cost of product.
5. **Apportionment of fixed overheads on arbitrary methods:** The validity of product costs under this technique depends on correct apportionment of overhead costs. But in practice many overhead costs are apportioned by using arbitral methods which ultimately make the product costs inaccurate and unreliable.
6. **Not helpful for preparation of flexible budget:** Under absorption costing no distinction is made between the fixed and variable costs. It is not possible to prepare flexible budget without making this distinction.

1.3.1 Difference between Marginal Costing and Absorption Costing

Q15. Compare and contrast Marginal Costing and Absorption Costing.

(OR)

Distinguish between absorption costing and marginal costing.

Ans :

(Oct.-20)

The following are the various points of difference between absorption costing and marginal costing.

S.No.	Absorption Costing	S.No.	Marginal Costing
1.	All costs fixed and variable are included for ascertaining the cost.	1.	Only variable costs are included. Fixed costs are recovered from contribution.
2.	Different unit costs are obtained at different levels of output because of fixed expenses remaining same.	2.	Marginal cost per unit will remain same at different levels of output because variable expenses vary in the same proportion in which output varies.
3.	Difference between sales and total cost is profit.	3.	Difference between sales and marginal cost is contribution and difference between contribution and fixed cost is profit or loss.
6.	Apportionment of fixed expenses on an arbitrary basis gives rise to over or under absorption of overheads which ultimately makes the product cost inaccurate and unreliable.	6.	Only variable costs are charged to products, marginal cost technique does not lead to over or under absorption of fixed overheads.
7.	Absorption costing is not very helpful in taking managerial decisions- such as whether to accept the export order or not, whether to buy or manufacture, the minimum price to be charged during the depression etc.	7.	Technique of marginal costing is very helpful in taking managerial decisions because it takes into consideration the additional cost involved only assuming fixed expenses remaining constant.
8.	Costs are classified according to functional basis such as production cost, office and administrative cost and selling and distribution cost.	8.	Costs are classified according to the behaviour of costs i.e., fixed costs and variable costs.
9.	Absorption costing fails to establish relationship of cost, volume and profit as costs are seldom classified into fixed and variable.	9.	Cost, Volume and Profit (i.e., CVP) relationship is an integral part of marginal cost studies as costs are classified into fixed and variable costs.

1.4 APPLICATION OF MARGINAL COSTING

Q16. Explain the Applications of Marginal Costing.

Ans :

The following are importance areas where managerial problems are simplified by use of the marginal costing.

- (i) **Maintaining a Desired Level of Profits:** Management may be interested in maintaining a desired level of profits, the volume of sales needed to have a desired level of profit can be ascertained by the marginal costing techniques.
- (ii) **Alternative Methods of Production:** When two or more methods of production are available i.e., machine work or hand work, the marginal cost of each method of manufacture should be ascertained. The final decision on the choice of a method depends upon the method which gives the greatest contribution assuming fixed expenses remaining same, keeping of course, the limiting factor in view. Where, however fixed expenses change, the decision will be taken on the basis of profit contributed by each.
- (iii) **Alternative Courses of Action:** When deciding between alternative courses of action, it should be kept in mind that whatever course of action is adopted, certain fixed expenses will remain unaffected.

The criterion therefore, which weighs is the effect of alternative course of action upon the marginal (i.e., variable) costs in relation to the revenue obtained. The course of action which yields the greatest contribution is the most profitable to be followed by the management.
- (iv) **Level of Activity Planning:** Marginal costing may be of great help to the management in planning the level of activity. Maximum contribution at a particular level of activity will show the position of maximum profitability.

(v) **Purchasing or Leasing:** Sometimes the management is required to take decision whether a particular asset say building is to be purchased or may be taken on lease basis. In this case the total cost of the two alternatives is to be compared in order to calculate the annual saving or extra cost involved if the building is purchased as compared to leasing.

(vi) **Choosing a Channel of Distribution for a Product:** Selection of channel of distribution for a product is an important decision, afterall it is necessary to choose a proper channel of distribution for a product, since, channels are revenue generating points. Marginal costing helps management in selecting proper channel in order to cover relevant costs, these distribution costs have then- greater impact on cost of sales, therefore they require proper attention. The cost of sales of a product depends on the selection of type of distribution, channel members, and intermediaries. The shorter the distance between the factory warehouse and point of disposition, the lesser will be the variable costs. The greater the inventory holding capacity of a channel member, the greater will be the profit margin.

1.5 CVP ANALYSIS

Q17. What is CVP Analysis? State the assumptions of CVP Analysis.

Ans :

(Oct.-20, Imp.)

Meaning

Cost-Volume-Profit analysis is a technique for studying the relationship between cost, volume and profit. Profits of an undertaking depend upon a large number of factors. But the most important of these factors are the cost of manufacture, volume of sales and the selling prices of the products.

Definitions

In the words of Herman C. Heiser. "the most significant single factor in profit planning of the average business is the relationship between the volume of business, costs and profits". The CVP

relationship is an important tool used for the profit planning of a business.

The three factors of CVP analysis i.e., costs, volume and profit are interconnected and dependent on one another. For example, profit depends upon sales, selling price to a large extent depends upon cost and cost depends upon volume of production as it is only the variable cost that varies directly with production, whereas fixed cost remains fixed regardless of the volume produced. In cost-volume-profit analysis an attempt is made to analyse the relationship between variations in cost with variations in volume.

The cost-volume-profit relationship is of immense utility to management as it assists in profit planning, cost control and decision making. Cost-volume-profit analysis can be used to answer questions such as :

- How much sales should be made to avoid losses ?
- How much should be the sales to earn a desired profit ?
- What will be the effect of change in prices, costs and volume on profits ?
- Which product or product mix is most profitable ?
- Should we manufacture or buy some product or component? and so on.

Assumptions

- All costs can be divided into fixed and variable costs.
- Fixed costs remain constant whereas the variable costs vary with a change in the output.
- Selling price remains constant.
- The number of units produced and sold will be one and the same.
- There will be no change in the operating efficiency.
- There is only one product or the product mix will remain the same.

1.6 BREAK EVEN ANALYSIS

1.6.1 Meaning, Assumptions

Q18. Define Break Even Analysis. State the assumptions of Break Even Analysis.

Ans :

Meaning

The study of cost-volume profit analysis is often referred to as 'break-even analysis' and the two terms are used interchangeably by many. This is so, because break-even analysis is the most widely known form of cost-volume-profit analysis. The term "break-even analysis" is used in two senses narrow sense and broad sense. In its broad sense, break-even analysis refers to the study of relationship between costs, volume and profit at different levels of sales or production. In its narrow sense, it refers to a technique of determining that level of operations where total revenues equal total expenses, i.e., the point of no profit, no loss.

Assumptions

The break-even analysis is based upon the following assumptions :

- All elements of cost, i.e., production, administration and selling and distribution can be segregated into fixed and variable components.
- Variable cost remains constant per unit of output irrespective of the level of output and thus fluctuates directly in proportion to changes in the volume of output.
- Fixed cost remains constant at all volumes of output.
- Selling price per unit remains unchanged or constant at all levels of output.
- Volume of production is the only factor that influences cost.
- There will be no change in the general price-level.
- There is only one product or in case of multi-products, the sales mix remains unchanged.
- There is synchronisation between production and sales.

The break-even point may be defined as that point of sales volume at which total revenue is equal to total cost. It is a point of no profit, no loss. A business is said to break-even when its total sales are equal to its total costs. The break-even point refers to that level of output which evenly breaks the costs and revenues and hence the name. At this point, contribution, i.e., sales minus marginal cost, equals the fixed costs and hence this point is often called as 'Critical Point' or 'Equilibrium Point' or 'Balancing Point' or no profit, no loss. If production/sales is increased beyond this level, there shall be profit to the organisation and if it is decrease from this level, there shall be loss to the organisation.

Break-even point can be stated in the form of an equation :

$$\text{Sales revenue at break-even point} = \text{Fixed Costs} + \text{Variable Costs}$$

1.6.2 Importance

Q19. Explain the importance of break-even analysis.

Ans :

- (i) Break-even analysis can be used to forecast the future cost and revenue and depending on it future profit can be ascertained.
- (ii) Break-even analysis is of great importance in decision-making regarding 'make or buy' decisions.
- (iii) It serves as a valuable tool in sales projection.
- (iv) By the use of break-even analysis, cost can be controlled.
- (v) It is a vital tool for fixing the prices of the products.
- (vi) Break-even analysis helps in choosing a product mix when there is a limiting factor.
- (vii) It aids in deciding whether a product or a department is to be dropped or to be continued.
- (viii) It helps in planning the future operations of a business firm to achieve maximum profit and to maintain desired profit level.

Q20. Define Break Even Point. How it is computed through algebraic formula method.

Ans :

The break-even point may be defined as that point of sales volume at which total revenue is equal to total cost. It is a point of no profit, no loss. A business is said to break-even when its total sales are equal to its total costs. At this point contribution i.e., sales minus variable cost, equals the fixed costs. If production/sales is increased beyond this level, there shall be profit to the organization and if it is decrease from this level, there shall be a loss to the organization.

Break-even point can be stated in the form of an equation,

$$\text{Sales revenue at break-even point} = \text{Fixed costs} + \text{Variable costs.}$$

Algebraic Formula Method for Computing the Break-even Point

The break-even point can be computed in terms of:

- (a) Units of sales volume.
- (b) Budget total or in terms of money/value.
- (c) As a percentage of estimated capacity.

(a) Break-Even Point in Units

As the break-even point is the point of no profit no loss, it is that level of output at which the total contribution equals the total fixed costs, It can be calculated with the help of following formula :

$\text{Break - Even Point} = \frac{\text{Fixed Cost}}{\text{Selling Price per unit} - \text{Variable Cost per unit}} \text{ (or) } \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$
--

(b) Break-even Point in terms of budget-total (or) money value

At break-even point :

$$\text{Total Sales} = \text{Total Fixed Cost} + \text{Total Variable Cost}$$

$$\text{or } S = F + V$$

(where S = Sales, F = Fixed Cost and V = Variable cost)

$$\text{or } S - V = F$$

$$\text{or } \frac{S - V}{S - V} = \frac{F}{S - V} \quad \text{(Dividing both sides by } S - V \text{)}$$

$$\text{or } 1 = \frac{F}{S - V}$$

$$\text{or } S \times 1 = \frac{F \times S}{S - V} \quad \text{(Multiplying both sides by } S \text{)}$$

$$\text{Hence, break-even sales} = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} \times \text{Sales} = \frac{\text{Fixed Cost}}{\text{Contribution}} \times \text{Sales}$$

$$\text{With the use of P/V Ratio, B.E.P.} = \frac{\text{Fixed Cost}}{\text{P/V ratio}} \left(\text{As, } \frac{\text{Contribution}}{\text{Sales}} = \text{P/V ratio} \right)$$

(c) Break-even Point as a percentage of estimated capacity

Break-even point can also be computed as a percentage of the estimated sales or capacity by dividing the break-even sales by the capacity sales. For example, if a firm has an estimated capacity of 1,00,000 units of products and its break-even point is reached at 50,000 units, then the break-even point is at 50% of capacity (1,00,000/50,000). If information as to total contribution at full capacity is available, the break-even point as a percentage of estimated capacity can be found as under :

$$\text{B.E.P (as \% age of capacity)} = \frac{\text{Fixed Cost}}{\text{Total Contribution}}$$

Q21. How do you compute BEP with graphic method of break-even analysis.*Ans :*

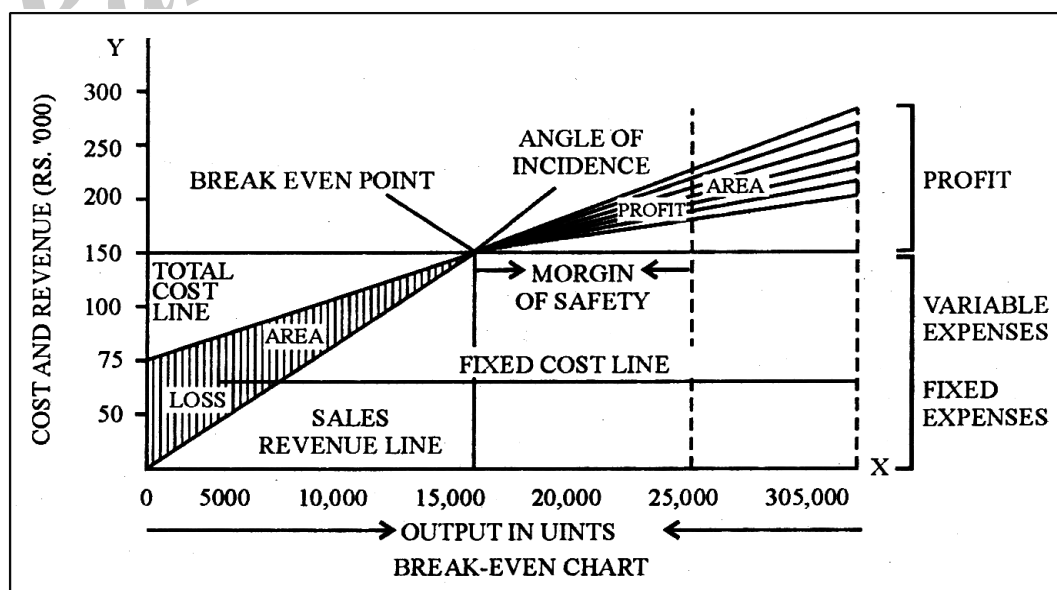
The break-even point can also be computed graphically. A break-even chart is a graphical representation of marginal costing. The break-even chart 'Portrays a pictorial view of the relationships between costs, volume and profits.' It shows the break-even point and also indicates the estimated profit or loss at various levels of output. The break-even point as indicated in the chart is the point at which the total cost line and the total sales line intersect.

There are three methods of drawing a break-even chart. These methods of drawing break-even chart have been explained with the help to the following illustration.

Output (units)	Variable Cost (per unit)	Total Variable Cost	Fixed Expenses	Total Cost	Selling Price (per unit)	Total Sales
0	5	0	75,000	75,000	10	0
5,000	5	25,000	75,000	1,00,000	10	50,000
10,000	5	50,000	75,000	1,25,000	10	1,00,000
15,000	5	75,000	75,000	1,50,000	10	1,50,000
20,000	5	1,00,000	75,000	1,75,000	10	2,00,000
25,000	5	1,25,000	75,000	2,00,000	10	2,50,000
30,000	5	1,50,000	75,000	2,25,000	10	3,00,000

Under this method following steps are taken to draw the break-even chart:

1. Volume of production/output or sales is plotted on horizontal axis, i.e., X-axis. The volume of sales or production may be expressed in terms of rupees, units or as a percentage of capacity.
2. Costs and sales revenue are represented on vertical axis, i.e., Y-axis.
3. Fixed cost line is drawn parallel to X-axis. The line indicates that fixed expenses remain constant at all levels of activity.



4. The variable costs for different levels of activity are plotted over the fixed cost line. The variable cost line is joined to fixed cost line at zero level of activity. As the variable cost line is drawn above the fixed cost line, it represents the total cost at various levels of output/sales.
5. Sales values at various levels of output are plotted and a line is drawn joining these plotted points. This line is called the sales (revenue) line.
6. The point of intersection of total cost line and sales (revenue) line is called the break-even point.
7. The number of units to be produced at break-even point can be determined by drawing a perpendicular to the X-axis from the point of intersection of cost and sales line.
8. The sales revenue at break-even point can be determined by drawing a perpendicular to the X-axis from the point of intersection of cost and sales line.
9. The area below the break-even point represents the loss area as the total sales are less than the total cost and the area above the break-even point indicates the area of profit as the sales revenue exceeds the total cost.

1.6.3 Limitations

Q22. Explain the advantages and limitations of break-even chart.

Ans :

Advantages

Computation of break-even point or presentation of cost, volume and profit relationship by way of break-even charts has the following advantages :

1. Information provided by the break-even chart is in a simple form and is clearly understandable even to a layman. The whole idea of the problem is presented at a glance.
2. The break-even chart is very useful to the management for taking managerial decisions because the chart studies the relationship of cost, volume and profit at various levels of

output. The effects of changes in fixed costs and variable costs at various levels of output and that of changes in the selling price on the profits can be depicted very clearly by way of break-even charts.

3. The break-even charts help in knowing and analysing the profitability of different products under various circumstances.
4. A break-even chart is very useful for forecasting (the costs and profits), planning and growth.
5. The break-even chart is a managerial tool for control of costs as it shows the relative importance of fixed cost in the total cost of a product.
6. Besides determining the break-even point, profits at various levels of output can also be determined with the help of break-even charts.
7. The break-even charts can also be used to study the comparative plant efficiencies of business.

Limitations

Despite many advantages, a break-even chart suffers from the following limitations :

1. A break-even chart is based upon a number of assumptions, discussed above, which may not hold good under all circumstances. For example, fixed costs do not remain constant after a certain level of activity ; variable costs do not always vary in direct proportion to changes in the volume of output because of the laws of diminishing and increasing returns ; selling prices do not remain the same for ever and for all levels of output due to competition and changes in the general price level ; etc.
2. A break-even chart provides only a limited information. We have to draw a number of charts to study the effects of changes in the fixed costs, variable costs and selling prices on the profitability. In such cases, it becomes rather more complicated and difficult to understand.

3. Break-even charts present only cost-volume profit relationships but ignore other important considerations such as the amount of capital investment, marketing problems and government policies, etc.
4. A break-even chart does not suggest any action or remedies to the management as a tool of management decisions.
5. More often, a break-even chart presents only a static view of the problem under consideration.

1.6.4 Contribution

Q23. Define Contribution. Explain the advantages of contribution.

Ans :

Meaning

Contribution is the difference between sales and variable cost or marginal cost of sales. It may also be defined as the excess of selling price over variable cost per unit. Contribution is also known as Contribution Margin or Gross Margin. Contribution being the excess of sales over variable cost is the amount that is contributed towards fixed expenses and profit.

If the selling price of a product is ₹ 20/- per unit and its variable cost is ₹ 15/- per unit, contribution per unit is ₹ 5/- (i.e. ₹ 20 – 15). Further, let us say that the fixed expenses are 50,000 and the total number of units sold is 8,000. This means that the total contribution is 8000×5 or ₹ 40,000 which is not sufficient even to meet the fixed expenses and the result is a loss of ₹ 10,000 (50,000 – 40,000). In case, the output is 10,000 units, then total contribution of ₹ 50,000 equals the fixed cost, and no amount is left for profit. The profit can be earned only when the amount of contribution exceeds the fixed costs. Hence, any output beyond 10,000 units, will give some profit e.g., at a level of output of 15,000 units, the total contribution is $15,000 \times 5 = ₹ 75,000$ while the fixed costs remain ₹ 50,000, thus making a profit of ₹ 25,000.

Contribution can be represented as :

- Contribution = Sales – Variable (Marginal) Cost
- or Contribution (per unit) = Selling Price – Variable (or marginal) cost per unit
- or Contribution = Fixed Costs + Profit (– Loss)

Advantages

The concept of contribution is a valuable aid to management in making managerial decisions. A few benefits resulting from the concept of contribution margin are given below :

1. It helps the management in the fixation of selling prices.
2. It assists in determining the break-even point.
3. It helps management in the selection of a suitable product mix for profit maximization.
4. It helps in choosing from among alternative methods of production; the method which gives highest contribution per limiting factor is adopted.
5. It helps the management in deciding whether to purchase or manufacture a product or a component.
6. It helps in taking a decision as regards to adding a new product in the market.

1.6.5 P/V Ratio

Q24. Explain profit volume analysis.*Ans :*

The Profit/volume ratio, which is also called the 'contribution ratio' or 'marginal ratio', expresses the relation-of-contribution to sales and can be expressed as under :

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

Since Contribution = Sales - Variable Cost = Fixed Cost + Profit, P/V ratio can also be expressed as :

$$\text{P/V Ratio} = \frac{\text{Sales} - \text{Variable cost}}{\text{Sales}} \text{ i.e. } \frac{S - V}{S}$$

$$\text{or, P/V Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}} \text{ i.e. } \frac{F + P}{S}$$

$$\text{or, P/V Ratio} = \frac{\text{Change in profit or Contribution}}{\text{Change in Sales}}$$

This ratio can also be shown in the form of percentage by multiplying by 100. Thus, if selling price of a product is ₹ 20 and variable cost is ₹ 15 per unit, then

$$\text{P/V Ratio} = \frac{20 - 15}{20} \times 100 = \frac{5}{20} \times 100 = 25\%$$

The P/V ratio, which establishes the relationship between contribution and sales is of vital importance for studying the profitability of operations of a business. It reveals the effect on profit of changes in the volume. In the above example, for every ₹ 100 sales, Contribution of ₹ 25 is made towards meeting the fixed expenses and then the profit comparison for P/V ratios can be made to find out which product, department or process is more profitable. Higher the P/V ratio, more will be the profit and lower the P/V ratio, lesser will be the profit. Thus, every management aims at increasing the P/V ratio.

The ratio can be increased by increasing the contribution. This can be done by :

- (i) Increasing the selling price per unit
- (ii) Reducing the variable or marginal cost.
- (iii) Changing the sales mixture and selling more profitable products for which the P/V ratio is higher.

The concept of P/V ratio is also useful to calculate the break-even point, the profit at a given volume of sales, the sales volume required to earn a given (or desired) profit and the volume of sales required to maintain the present profits if the selling price is reduced by a specified percentage.

The formula for the sales volumes required to earn a given profit is :

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

$$\text{or P/V Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}}$$

$$\text{Sales} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{P / V ratio}} = \frac{F + P}{\text{P/V ratio}}$$

1.6.6 Margin of Safety**Q25. Explain the Margin of Safety.***Ans :*

The excess of actual or budgeted sales over the break-even sales is known as the margin of safety.

It is the difference between actual sales minus the sales at break-even point. It represents the amount by which sales revenue can fall before a loss is incurred. As at break-even point there is no profit no loss, sales beyond the break-even point represent margin of safety because any sales above the break-even point will give some profit. Thus,

$$\text{Margin of Safety} = \text{Total Sales} - \text{Sales at Break-Even Point}$$

Margin of safety can also be calculated with the help of the following formula:

$$\text{Margin of Safety (M/S)} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

This is so because margin of safety is the volume of sales beyond break-even point and all sales above the break-even point give some profit which can be calculated as :

$$\text{Profit} = \text{Margin of Safety} \times \text{P/V ratio}$$

$$\text{or M.S.} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

The size of the margin of safety is an important indicator of the strength of a business. The large margin of safety indicates that the business is sound and even if there is a substantial fall in sales, there will still be some profit. On the other hand, small margin of safety indicates that position of the business is comparatively weak and even a small decline in the sales would adversely affect the profit of the business and may result into losses. The margin of safety can be improved by taking the following steps :

1. By increasing the level of production
2. By increasing the selling price
3. By reducing the fixed cost
4. By reducing the variable cost
5. By substituting unprofitable products with profitable products
6. By increasing contribution by changing the sales mix or by dropping unprofitable products.

PROBLEMS

1. Calculate the sales required to earn a profit of Rs. 1,20,000.

Sales Rs. 6,00,000; Variable Cost Rs. 3,75,000, Fixed Cost Rs. 1,80,000.

*Sol :***(June-19)**

Sales required to earn a profit =

$$\frac{\text{Sales required to earn a profit of Rs. 1,20,000} + \text{Fixed Cost}}{\text{Contribution}} \times \text{Sales}$$

Contribution = Sales – Variable Cost

$$= 6,00,000 - 3,75,000$$

$$\text{Contribution} = \text{Rs. } 2,25,000$$

$$= \frac{1,80,000 + 1,20,000}{2,25,000} \times 6,00,000$$

$$= \frac{3,00,000}{2,25,000} \times 6,00,000 = \text{Rs. } 8,00,000$$

2. **Given Margin of Safety Rs. 20,000 (which represents 20% of Sales); P/V Ratio = 50%. Find out the Break-Even Sales and Fixed Cost.**

Sol :

(June-19)

$$\text{Margin of Safety \%} = \frac{\text{Margin of Safety}}{\text{Total Sales}}$$

$$\frac{20}{100} = \frac{20,000}{\text{Total Sales}}$$

$$\text{Total Sales} = \frac{20,000 \times 100}{20} = \text{Rs. } 1,00,000$$

$$\begin{aligned} \text{Contribution} &= \text{Sales} \times \text{P.V. Ratio} \\ &= 1,00,000 \times 50\% = \text{Rs. } 50,000 \end{aligned}$$

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Contribution}} \times \text{Sales}$$

$$\begin{aligned} \text{BEP} &= \text{Total Sales} - \text{MOS} \\ &= 1,00,000 - 20,000 \end{aligned}$$

$$\text{BEP} = \text{Rs. } 80,000$$

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Contribution}} \times \text{Sales}$$

$$80,000 = \frac{\text{F.C}}{50,000} \times 1,00,000$$

$$\therefore \text{FC} = \frac{80,000 \times 50,000}{1,00,000} = \text{Rs. } 40,000.$$

3. **A plant introduces a product in the quantity of 10,000 units at a cost of Rs. 3.00 per unit. If 20,000 units are produced the cost per unit is Rs. 2.50. What is the variable cost per unit.**

Sol :

(Oct.-19)

The cost that changes due to change in production is called variable cost. The cost for 10,000 units is Rs. 3 per unit, whereas for 20,000 units it is Rs. 2.5 per unit. Hence variable cost is Rs. 0.50 per unit [3 - 2.50]

4. From the following table, find out the profitability.

	Product A (Rs.)	Product B (Rs.)
Sale Price (Per Unit)	20	200
Variable Cost (Per Unit)	9	110
Contribution	11	90
Mfg. Time-Hours of the Machine	3	20

Sol :

(June-19)

Calculation of Profitability

$$\text{Profitability} = \frac{\text{Contribution}}{\text{Key Factor}}$$

Product - A

$$\begin{aligned}\text{Profitability} &= \frac{11}{3} \\ &= 3.67\end{aligned}$$

Product - B

$$\begin{aligned}\text{Profitability} &= \frac{90}{20} \\ &= 4.5\end{aligned}$$

5. The following particulars are extracted from the records of ABC Ltd.

Particulars	Products	
	R	S
Sales (per unit)	200	250
Material Consumption	5 Kg	6 Kg
Material Cost	Rs. 25	Rs. 30
Direct Wages	Rs. 20	Rs. 22
Direct Expenses	Rs. 6	Rs. 8
Machine Hours (used)	4 Hrs	5 Hrs
Fixed Overheads	Rs. 22	Rs. 25

Direct wages per hour is Rs. 6 Find out the profitability if the key factor is material.

Sol.:

(Oct.-19)

Particulars	Product - R per unit	Product -S per unit
Sales	200.00	250.00
Variable cost per unit		
Material	25.00	30.00
Direct wages	20.00	22.00
Direct expenses	6.00	8.00
Marginal cost	51.00	60.00
Contribution (Sales – Marginal cost)	149.00	190.00
Contribution per unit of sale		
$\left[\frac{\text{Contribution}}{\text{Sales}} \right]$	$\left(\frac{149}{200} \right) 0.75$	$\left(\frac{190}{250} \right) 0.76$
Material Required per unit	5 kgs	6kgs
Contribution per kg of material	$\frac{149}{5} = 29.8$	$\frac{190}{6} = 31.67$
Machine hours used	4hours	5 hours
Contribution per machine hour	$\frac{149}{4} = 37.25$	$\frac{190}{4} = 47.5$

6. The sales and profits during two years are as follows :

Year	Sales (in Rs.)	Profit (Rs.)
2017	3,00,000	30,000
2018	4,00,000	50,000

You are required to calculate Breakeven point and Margin of Safety.

Sol.:

(Oct.-19)

$$\text{BEP in sales} = \frac{\text{Fixed cost}}{\text{Contribution}} \times \text{Sales}$$

$$\text{Change in sales} = 4,00,000 - 3,00,000 = 1,00,000$$

$$\text{Change in profits} = 50,000 - 30,000 = 20,000$$

$$\text{P/V Ratio} = \frac{\text{Change in profits}}{\text{Change in sales}} \times 100$$

$$\text{P/V Ratio} = \frac{20,000}{1,00,000} \times 100 = 20\%$$

$$\text{Contribution} = \text{Sales} \times \text{P/V Ratio}$$

$$\text{Contribution} = 4,00,000 \times 20\% = \text{Rs. } 80,000$$

$$\begin{aligned} \text{Fixed cost} &= \text{Contribution} - \text{Profit} \\ &= 80,000 - 50,000 \end{aligned}$$

$$\therefore \text{Fixed cost} = \text{Rs } 30,000$$

$$\therefore \text{BEP} = \frac{30,000}{80,000} \times 4,00,000 = \text{Rs } 1,50,000$$

$$\begin{aligned} \text{Margin of safety} &= \text{Actual Sales} - \text{BEP Sales} \\ &= 4,00,000 - 1,50,000 \\ &= \text{Rs } 2,50,000 \end{aligned}$$

7. The following figures are extracted from the books of Vijay Irons Ltd. for the year 2018 and 2019 March, whose capacity is 10,000 irons per year.

Direct Materials	Rs. 3.50 per unit
Direct Labour	Rs. 0.50 per unit
Fixed overhead	Rs. 2.00 per unit
Selling Price per unit	Rs. 8.00

	2018	2019
Production in Units	10,000	10,000
Sales in Units	8,000	12,000

Prepare Cost Statements assuming that the Company uses Marginal Costing.

Sol :

(June-19)

Cost Statement

Particulars	2018 (8000 units)	2019 (12000 units)
Sales (8 ` per unit)	64,000	96,000
(-) Variable Cost (4 ` per unit)	32,000	48,000
	32,000	48,000
(-) Fixed Cost	16,000	24,000
Profit →	16,000	24,000

8. The following data are available from the records of a Company: Sales Rs. 1,00,000; Variable Cost Rs. 60,000; Fixed Cost Rs. 20,000.

You are required to calculate P/V Ratio; BEP and Margin of Safety. Also study the impact of change in the following variable on P/V ratio; BEP and Margin of Safety.

- (i) Increase in selling price by 10%
(ii) Decrease in Fixed Cost by Rs. 5,000.

Sol.:

(June-19, Imp.)

$$\begin{aligned} \text{Contribution} &= \text{Sales} - \text{Variable Cost} \\ &= 1,00,000 - 60,000 \\ \therefore \text{Contribution} &= \text{Rs. } 40,000 \\ (1) \text{ P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{40,000}{1,00,000} \times 100 = 40\% \\ (2) \text{ BEP} &= \frac{\text{Fixed Cost}}{\text{P / V ratio}} \\ &= \frac{20,000}{40\%} = 20,000 \times \frac{100}{40} \\ &= 50,000 \\ (3) \text{ Margin of safety} &= \text{Actual Sales} - \text{BEP Sales} \\ &= 1,00,000 - 50,000 \\ &= 50,000 \end{aligned}$$

If Sales increase by 10% impact of change an P/V Ratio, BEP & MOS

Actual Sales	1,00,000
(+) Increased by 10%	10,000
Revised sales →	<u>1,10,000</u>

$$\begin{aligned} \text{Contribution} &= \text{Sales} - \text{Variable Cost} \\ &= 1,10,000 - 60,000 \\ &= 50,000 \\ \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{50,000}{1,10,000} \times 100 = 45.45\% \end{aligned}$$

$$\begin{aligned}
 \text{Break even point} &= \frac{\text{Fixed Cost}}{\text{P / V ratio}} \\
 &= \frac{20,000}{45.45\%} \Rightarrow 20,000 \times \frac{100}{45.45} \\
 &= \text{Rs. } 44,000 \\
 \text{MOS} &= 1,10,000 - 44,000 \\
 &= \text{Rs. } 66,000
 \end{aligned}$$

If fixed cost decreased by Rs. 5000 impact of change in P/V Ratio, BEP & MOS

$$\text{Contribution} = \frac{\text{Sales} - \text{Variable Cost}}{1,00,000 - 60,000} = 60,000$$

$$\text{Contribution} = \text{Rs. } 40,000$$

$$\begin{aligned}
 \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\
 &= \frac{40,000}{1,00,000} \times 100 \\
 &= 40\%
 \end{aligned}$$

Fixed Cost (given)	20,000
(-) Decreased	5,000
New Fixed Cost →	15,000

$$\text{BEP} = \frac{15,000}{40\%} = 15,000 \times \frac{100}{40} = 37,500$$

$$\text{MOS} = 1,00,000 - 37,500 = 62,500$$

9. The following data is given :

Fixed Expenses Rs. 10,00,000; Variable Expenses Rs. 10 per unit.

Selling price Rs. 15 per unit.

Indicate the number of units to be manufactured and sold.

(i) To Breakeven

(ii) To earn a profit of Rs. 10,000

(iii) What additional units would be necessary to increase the above profit by Rs. 15,000

Sol :

(Oct.-19, Imp.)

$$(i) \text{ BEP in units} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

$$\begin{aligned}
 \text{Contribution per unit} &= \text{Selling Price per unit} - \text{Variable cost per unit} \\
 &= 15 - 10
 \end{aligned}$$

∴ Contribution per unit = Rs. 5

$$\begin{aligned}\therefore \text{BEP in units} &= \frac{10,00,000}{5} \\ &= 2,00,000 \text{ units}\end{aligned}$$

(ii) No. of units to be sold to earn a profit of Rs. 10,000

$$\begin{aligned}&= \frac{10,00,000 + 10,000}{5} = \frac{10,10,000}{5} \\ &= 2,02,000 \text{ units}\end{aligned}$$

(iii) No. of units to be sold to earn a profit of Rs. 15,000

$$\begin{aligned}&= \frac{10,00,000 + 15,000}{5} = \frac{10,15,000}{5} \\ &= 2,03,000 \text{ units.}\end{aligned}$$

10. A company produces only one product, which had the following costs :

Variable manufacturing costs Rs. 4 per unit

Fixed Manufacturing cost Rs. 1,00,000 per annum

The normal capacity is set at 1,00,000 units

There are no work - in - process inventories. Fixed overhead rate is Rs. 1 per unit.

In 2018, the company produced 1,00,000 units and sold 90,000 units at a price of Rs. 8 per unit. In 2019, the company produced 1,10,000 units and sold 1,15,000 units at the same price.

You are required to prepare Income statement for 2018 and 2019 based on Absorption costing and Marginal costing.

Sol :

(Oct.-19)

Profit when 90,000 units are sold

Sales [90,000 × 8]	7,20,000
(-) Variable cost [90,000 × Rs 4]	<u>3,60,000</u>
Contribution	3,60,000
(-) Fixed cost	<u>1,00,000</u>
profit	<u>2,60,000</u>

Profit when 1,15,000 units are sold

Sales [1,15,000 × Rs 8]	9,20,000
(-) Variable cost [1,15,000 × Rs 4]	<u>4,60,000</u>
Contribution	4,60,000
(-) Fixed cost	<u>1,00,000</u>
Profit	<u>3,60,000</u>

Profit when 1,00,000 units are sold

Sales [1,00,000 units × Rs 8]	8,00,000
(-) Variable cost [1,00,000 × Rs 4]	4,00,000
Contribution	4,00,000
(-) Fixed cost	1,00,000
Profit	3,00,000

When 1,15,000 units are sold gives highest profit

11. From the following particulars, find;

- (a) Fixed Costs
- (b) Break Even sales
- (c) Total Sales and
- (d) Profit

Margin of Safety ` 10,000 which represents 40% of Sales: P/v ratio 50%.

Sol:

(Oct.-20, Imp.)

(a) Calculation of Fixed Cost

$$\begin{aligned}
 \text{Fixed Cost} &= \text{Contribution} - \text{Profit} \\
 &= 12,500 - 5,000 \\
 &= 7,500.
 \end{aligned}$$

(b) Calculation of Break Even Sales

$$\begin{aligned}
 &= \frac{\text{Fixed Cost}}{\text{P/V Ratio}} \\
 &= \frac{7,500}{50\%}
 \end{aligned}$$

$$\begin{aligned}
 &= 7,500 \times \frac{100}{50} \\
 &= 15,000
 \end{aligned}$$

(c) Calculation of Total Sales

$$\begin{aligned}
 \text{Total Sales} &= \frac{\text{MOS}}{\text{Sales}} \times 100 \\
 &= \frac{10,000}{40} \times 100 \\
 &= 25,000.
 \end{aligned}$$

Calculation of Contribution

$$\text{Contribution} = \text{Sales} \times \text{P/V Ratio}$$

$$= 25,000 \times \frac{50}{100}$$

$$= 12,500$$

(d) Calculation of Profit

$$\text{Margin of safety} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

(or)

$$\text{Profit} = \text{Margin of safety} \times \text{P/V Ratio}$$

$$= 10,000 \times \frac{50}{100}$$

$$= 5,000$$

12. From the following particulars calculate,**(i) Contribution****(ii) P/V ratio****(iii) Breakeven point in units and rupees****(iv) What will be the selling price per unit if the break even point is brought down to 25,000 units?**

Particulars	(₹)
Fixed expenses	1,50,000
Variable cost per unit	10
Selling price per unit	15

*Sol.:***(i) Contribution**

$$\text{Contribution (per unit)} = \text{Selling price} - \text{Variable cost per unit}$$

$$= 15 - 10$$

$$= ₹ 5$$

(ii) P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales or selling price}}$$

$$= \frac{5}{15}$$

$$= 0.3333$$

(iii) Break-even point in Units and Rupees

$$\begin{aligned}
 \text{Break-even point (in units)} &= \frac{\text{Fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}} \\
 &= \frac{1,50,000}{15 - 10} \\
 &= \frac{1,50,000}{5} \\
 &= 30,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Break-even point (in rupees)} &= \frac{\text{Fixed cost}}{\text{P/v ratio}} \\
 &= \frac{1,50,000}{0.3333} \\
 &= 4,50,045
 \end{aligned}$$

(iv) When Break-even Point brought down to 25,000 Units Selling Price Per Unit Would be,

$$\begin{aligned}
 \text{Break-even point (in units)} &= \frac{\text{Fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}} \\
 25,000 &= \frac{1,50,000}{\text{sp} - 10} \\
 (25,000) \times (\text{SP} - 10) &= 1,50,000 \\
 \text{SP} - 10 &= 6 \\
 \text{SP} - 10 &= 6 + 10 \\
 \text{SP} &= 6 + 10 \\
 \text{SP} &= ₹ 16 \\
 \therefore \text{Selling price per unit} &= ₹ 16
 \end{aligned}$$

- 13. From the following particulars, find the minimum number of units required to be sold so that no cash loss is incurred. Selling Price ₹ 20; Variable Cost per unit ₹ 10; Administration Expenses ₹ 10,000; Depreciation ₹ 6,000.**

Sol:

(Oct.-20)

The minimum number of units required to be sold can be calculated with the help of following formulae.

$$\begin{aligned}
 \text{Break-even Point (BEP) (in units)} &= \frac{\text{Fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}} \\
 \text{Fixed cost} &= \text{Administration expenses} + \text{Depreciation} \\
 &= 10,000 + 6,000 \\
 &= 16,000
 \end{aligned}$$

$$\begin{aligned}\therefore \text{BEP (in units)} &= \frac{16,000}{20 - 10} \\ &= \frac{16,000}{10} \\ &= 1,600 \text{ units}\end{aligned}$$

14.

Year	Sales	Profit
2015	3,00,000	40,000
2016	4,50,000	85,000

Using the above information, calculate :

(i) P/V Ratio

(ii) Fixed cost

(iii) BEP

(iv) Sales required to earn a profit of Rs. 1,00,000.

Sol :

$$\begin{aligned}\text{(i) P/V Ratio} &= \frac{\text{Change in profit}}{\text{Change in sales}} \times 100 \\ &= \frac{45,000}{1,50,000} \times 100 = 30\%\end{aligned}$$

$$\begin{aligned}\text{(ii) Fixed Cost} \\ \text{Contribution} &= \text{Fixed Cost} + \text{Profit} \\ \text{Contribution} &= \text{Sales} \times \text{P/V Ratio} \\ 2015 &= 3,00,000 \times \frac{30}{100} \\ &= 90,000 \\ \text{Contribution} &= \text{Fixed Cost} + \text{Profit} \\ 90,000 &= \text{Fixed Cost} + 40,000 \\ \text{Fixed Cost} &= 90,000 - 40,000 \\ &= 50,000\end{aligned}$$

$$\begin{aligned}\text{(iii) BEP} &= \frac{\text{Fixed Cost}}{\text{P/V Ratio}} \\ &= \frac{50,000}{30\%} \\ &= 50,000 \times \frac{100}{30} = 1,66,666\end{aligned}$$

(iv) Sales required to earn a profit of Rs. 1,00,000

$$\begin{aligned}
 &= \frac{\text{Fixed Cost} + \text{Profit}}{\text{P/V Ratio}} \\
 &= \frac{50,000 + 1,00,000}{30\%} \\
 &= 1,50,000 \times \frac{100}{30} \\
 &= 5,00,000
 \end{aligned}$$

1.7 MARGINAL COSTING FOR DECISION MAKING

Q26. Define Decision Making. State the various steps involved in Decision Making.

Ans :

Meaning

Decision making is a process of identification and selection of an action from a number of alternative courses of action for resolving a problem in the organization.

Decision making acts as the basis for planning an activity in the organization. It is one of the important managerial functions. Decision making must be rational for achieving the set goals successfully. It is very important to take the decisions at every stage of the organization. The decisions which are taken by top management are called strategic decisions and the decisions which are related to the normal day-to-day activities of organization are called as tactical or operational decisions.

Process

The process of decision making deals with a series of activities which results in the best solution to a problem. The decision making process involves certain steps which are as follows,

- Step 1: Defining the problem
- Step 2: Specifying the objectives
- Step 3: Identifying the problem
- Step 4: Generating alternatives
- Step 5: Evaluation of alternatives
- Step 6: Selection of the best alternative
- Step 7: Implementation of the action and
- Step 8: Evaluating the results.

Step 1: Defining the Problem

The first step in decision making is to find out the correct problem. It should be seen what is causing the trouble and what will be its possible solutions.

Step 2: Specifying the Objectives

The second step in the decision making process is to specify the objectives or goals of organization. Based on these objectives, the decisions relating to the actions which need to be taken by managers to accomplish the set of objectives are taken.

Step 3: Identifying the Problem

The third step of decision making process is the identification of the problem. In this step, the management collects adequate information about the organizational processes and processes the information to diagnose and identify the problem. It is very important for managers to diagnose the real problem in the situation as this helps in resolving the problem easily and taking an effective decision. The manager should analyse it. He should collect all possible information about the problem.

Step 4: Generating Alternatives

After identifying and defining the actual problem, the manager has to gather appropriate information about the problem. Based on the gathered information, the manager can generate alternatives to solve a problem by analyzing it thoroughly. The information also helps in anticipating the results for each alternative. The manager has to find maximum possible alternatives which are available to resolve the problem. The alternatives should be clear, understandable and specific and should be able to produce a best solution for the problem identified. Every problem has a number of solutions. If there is only one solution then there is no need for decision making.

Step 5: Evaluation of Alternatives

After generating the alternatives, the manager should evaluate them for selecting the best alternative or that alternative which gives maximum economy should be selected. The possible alternatives can be evaluated by using the following methods,

(a) Stakeholder Analysis

In stakeholder analysis, the key aspects involved in the problem are identified and the impact of each alternative on the problem is considered.

(b) Marginal Analysis

In marginal analysis, the alternatives are evaluated by comparing the additional revenues generated with respect to the additional costs. The factors other than costs and revenues can also be used for evaluation.

(c) Cost-benefit Analysis

Marginal analysis is a traditional method and is cost consuming while cost benefit analysis is a variation of marginal analysis. In this method, the manager compares the costs and the anticipated benefits of each potential course of action. The alternative which involves low cost and high profits can be selected by the manager.

(d) Quantitative and Qualitative Factors

Evaluation of alternatives can also be done by considering the qualitative and quantitative factors. Qualitative factors are intangible in nature such as labor relations, risk of technological change etc., whereas quantitative factors are tangible such as the costs and benefits. These factors can be measured in terms of numbers but qualitative factors cannot be expressed in numerical terms.

By rating and comparing the outcomes of these factors, the managers can determine the importance of each alternative in solving the problem.

Step 6: Selection of the Best Alternative

In this stage, the actual decision is made by selecting one best course of action from the various alternatives. The managers mostly make use of three approaches for selecting the best alternative. These approaches are as follows,

(a) Experimentation

In this approach, the manager selects the best alternative by testing all the proposed alternative courses of action. It is the most expensive technique as it requires huge amount of money for conducting the experiments.

(b) Experience

In this approach, the manager selects the best alternative based on his past experience. The degree of success depends on the experience of the manager in selecting the best alternative.

(c) Research and Analysis

In this approach, the best alternative is selected by using various models. The important step in this approach is to build a simulation model to find the best solution among the various alternatives for the problem.

Step 7: Implementation of the Action

Implementation is the realization of an application or execution of plan and idea. The implementation of an action needs the active support of the organization and employees at all levels of the organization.

Implemented solution can be failed to solve the problem when it was developed. Therefore the results of implementing a solution should be monitored and evaluated.

This stage can have an effect on all the above stages. The errors in this stage can occur due to the lack of active participation of all the staff of the organization. This can be avoided by involving the right and capable workers and managers in the decision making.

Step 8: Evaluation of Results

Evaluation results are used to improve programs, sustain position outcomes and improve the community's over all plan. After implementation, it is necessary to evaluate the results obtained from the action. If the results are in accordance with the specified objectives, then the decision is a successful decision. The manager should evaluate the results for controlling the performance of the organization and for measuring the performance of the decision.

1.7.1 Make or Buy**Q27. What do you mean by Make or Buy decisions?**

Ans :

Sometimes a concern has to decide whether a certain product or a component should be made in the factory-itself (having unused production facilities) or bought from outside from a firm which specialises in it. In taking such a 'make or buy' decision, the technique of marginal costing is of immense help. While deciding to 'make or buy' a distinction must be made between fixed cost and variable cost, and the variable cost of manufacturing it should be compared with the price at which this component or product can be bought from outside. It is advisable to make than to buy if the variable (marginal) cost of the product or component is lower than the purchase price. But if the purchase price is lower than the marginal cost, it would be better to buy than to make itself. However, this decision is based upon the assumptions that fixed expenses do not increase and production facilities cannot be employed more profitably. Further, the irregularity of supply from outside, disclosure of business secrets and non-availability of surplus capacity, etc. may force a concern to make rather than to buy".

Q28. Describe the pros and cons of make (or) buy decision.

Ans :

Following are the pros of make or buy decision,

Pros / Benefits of Make Decisions

1. Make decisions help in reducing the production cost.
2. It makes sure that products are supplied adequately.
3. Make decision helps in avoiding the misleading and deceptive suppliers.
4. It makes effective utilization of excess resources. The managers role is to establish the conditions for an in additional capacity.
5. Make decisions help the firms to produce desired quality product.
6. It helps in avoiding the supplier collusion.
7. Make decisions help the firm in,
 - Producing unique products which are difficult to buy.
 - Protecting the intellectual properties.
 - Expand its size.

Pros / Benefits of Buy Decisions

1. Buy decisions help in reducing the acquisition cost.
2. It helps in sustaining the commitment of supplier.
3. It helps in obtaining superior capabilities,
4. Buy decisions help the firms to avoid making investments Buy decisions relate to autonomy effective group-decision outcome and its always an advantage to be able to choose among more than one option.
5. Buy decisions help in decreasing the inventory costs.
6. Buy decisions assure that the supply of items is constant and continuous.
7. Buy decisions help the firm in,
 - Buying the products which are protected by patents.
 - Emphasizing more on core competency.

Cons of Make or Buy Decision

Pros of "make" decision are the cons of buy decision and pros of "buy" decision are the "cons" of make decision.

PROBLEMS

- 15. A manufacturing company finds that while the cost of making a component No. 0.51 in shown workshop is ₹ 8.00 each, the same is available in market at ₹ 6.50 with an assurance of continuous Supply. Give your suggestion whether to make or buy this component. Give also your views in case the supplier reduces the price from ₹ 6.50 to ₹ 5.50. The cost data is as follows :**

	₹
Materials	3.00
Direct labour	2.00
Other Variable Expenses	1.00
Depreciation and other Fixed Expenses	2.00
	8.00

Sol :

Since fixed costs are to be incurred whether we manufacture this component or not, the decision depends upon the marginal cost of making the component which is calculated as follows:

Marginal Cost of Component 0.51 (per unit)	
Materials	3.00
Direct Labour	2.00
Other Variable Expenses	1.00
	6.00

It is advisable to make the component itself if the marginal cost of making the component is lower than the purchase price because every component produced will give some contribution to the company. But in case the marginal cost is higher than the purchase price, it is better to buy the component from outside than to make it.

In the above example, if the purchase price is ₹ 6.50, it is not advisable to buy the component from outside. We should rather make the component of our own because every component manufactured will give a contribution of 50 paise. But the company should not manufacture the component if it is available at ₹ 5.50 from outside. In that case it is better to buy than to make.

16. The cost of manufacturing of 8000 units of 'X' product is given below:

Direct Materials Rs. 8,000; Direct Labour Rs. 64,000; Variable Overheads Rs. 32,000. Fixed Overheads Rs. 40,000; Fixed Overheads is inclusive of Rs. 24,000 that continues regardless of the decision. The same product is available in the market for Rs. 16 per unit. Should the company make or buy the product.

Sol :

(June-19)

Calculation of Marginal Cost

Particulars	Per unit
Direct Materials $\left[\frac{8,000}{8,000} \right]$	1.00
Direct Labour $\left[\frac{64,000}{8,000} \right]$	8.00
Variables Overheads $\left[\frac{32,000}{8,000} \right]$	4.00
	13.00

It is better to make the product, because it cost Rs. 13.00 to make it, where as it is market price is Rs. 16.

17. Following is the information related to Coromandel Company Ltd. Producing washing machines. Cost (per unit) Materials Rs. 50; Labour Rs. 25; Direct Expenses Rs. 15 ; Fixed expenses Rs. 10; Profit Rs. 20; Selling price Rs. 120.

The production capacity of the factory is 10,000 units. At present, a supplier has offered to sell the same item for Rs. 95. Should the company produce the item or buy it from the supplier? Give reasons.

Sol.:

(Oct.-20, Oct.-19)

Calculation of Marginal cost

Materials	50.00
Labour	25.00
Direct expenses	15.00
	<u>90.00</u>

It is advisable for the company to make the product because it is Less than the market price of Rs.

95

1.7.2 Add or Drop Products**Q29. Explain in detail about how to add a new product in a product line.**

(OR)

How can a manager diversify the products using the technique marginal costing?*Ans.:*

When a firm plans to add new products (diversification) in the product line for utilizing the idle capacities of the inputs or for entering in new markets, then the management of the firm should take the decisions regarding the profitability and production of that new product. In such situations, marginal costing technique can be used for taking effective decisions.

Under marginal costing for the calculation of profits for individual products, departments, no attempt is made only calculation of individual contribution is done. However, while taking the decisions about the production of a new product, the firm should consider the following factors,

- (i) The production of new product should not increase the fixed costs of the firm.
- (ii) The information regarding the costs of production should be given under marginal costing method.

The management should also consider the variable costs during diversification i.e., price of the product should cover all the variable costs incurred in the production of the new products and should contribute towards the firm's profitability.

If the production of new product involves some specific fixed costs then the firm should firstly deduct these costs from the contribution margin of the product and then the decisions are to be taken about the production of the new product. The general fixed costs apart from specific costs will be charged to the products which the firms are currently producing.

Q30. Explain briefly about factors to be consider before taking a decision about the dropping of a product line.*Ans.:*

1. The contribution given by the product, This contribution is different from profit. Profit is arrived at after deducting fixed cost from contribution. Fixed costs are apportioned over different products on some reasonable basis which may not be very much correct. Hence, contribution gives a better idea about the profitability of a product as compared to profit.
2. The capacity utilization, i.e. whether the firm is working to full capacity or below normal capacity. In case a firm is having idle capacity, the production of any product which can contribute toward the recovery of fixed costs can be justified.

3. The availability of product to replace the product which the firm wants to discontinue and which is already accounting for a significant proportion of the total capacity.
4. The long-term prospects in the market for the product.
5. The effect on sale of other products. In some cases, discontinuance of one product may result in heavy decline in sales of other products affecting the overall profitability of the firm.

PROBLEMS

18. XY Ltd, is engaged in manufacturing and selling of a product 'A' whose selling price is ₹ 20/unit and variable cost is ₹ 10/- per unit.
- (a) If the fixed costs for this year are 4,00,000/- and annual sales are at 60% margin of safety. Calculate the rate of net return on sale, assuming an income tax level of 40%.
 - (b) For the next year, it is proposed to add another product line 'B' whose selling price would be ₹ 40/- unit and variable cost ₹ 8/- per unit. The total fixed costs are estimated at 6,00,000. The sale mix of A and B would be 6 : 4. At what level of sales next year, would mars Ltd break even? Give separately for both A and B the break even sales in rupees and quantity?

Sol :

- (a) Statement showing contribution per unit of product 'A'.

Particulars	₹
Selling price	20
Less: Variable cost/unit	10
Contribution/unit	10

$$\text{Break even point} = \frac{\text{Fixed costs}}{\text{Contribution/unit}}$$

$$= \frac{4,00,000}{20}$$

$$= 20,000 \text{ units}$$

$$\therefore \text{Break even sales (in units)} = 20,000$$

$$\% \text{ Margin of safety} = \frac{\text{Actual sales} - \text{BES}}{\text{Actual sales}}$$

$$60\% = \frac{\text{Actual sales} - 20,000}{\text{Actual sales}}$$

$$\text{Actual sales} = 60\% + 20,000$$

$$(\text{or}) \text{ Actual sales} = \frac{20,000}{40\%} = 50,000 \text{ Units}$$

Particulars	
Total selling price	50,000 × 20 10,00,000
Less: Total variable cost	50,000 × 10 5,00,000
Contribution	5,00,000
Less: Fixed cost	4,00,000
Profit	1,00,000
Less: Income tax (40% on gross profit)	2,40,000
Net Returns	60,000

$$\% \text{ of net return on sales} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

$$= \frac{60,000}{10,00,000} \times 100 = 6\%.$$

- (b) Introduction of new product 'B' into the existing product line.

Particulars	A	B
Selling price /unit	20	40
Less: Variable cost	10	8
Contribution/unit	10	32
P/V Ratio	50%	80%

$$\text{P/V Ratio of 'A'} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{10}{20} \times 100$$

$$= 50\%$$

$$\text{P/V Ratio of 'B'} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{32}{40} \times 100$$

$$= 80\%$$

Contribution margin of products A and B = 6 : 4.

$$A = 50 \times 6 = 300$$

$$B = 80 \times 4 = 320$$

$$\text{Total} = 620 = \frac{620}{10} = 62\%$$

$$\text{Break even sales (\% of)} = \frac{\text{Fixed costs}}{\text{Margin of Safety}}$$

$$= \frac{4,00,000}{62\%} = 6,45,161.2$$

Sales Mix

$$\begin{aligned}\text{Product A} &= 6,45,161.2 \times \frac{6}{10} \\ &= 3,87,096.7\end{aligned}$$

$$\begin{aligned}\text{Product B} &= 6,45,161.2 \times \frac{4}{10} \\ &= 2,58,064.4\end{aligned}$$

In Value

$$\text{Product A} = \frac{3,87,096.7}{20} = 19354.8$$

$$\text{Product B} = \frac{2,58,064.4}{40} = 6451.6$$

19. A firm manufactures two products viz P and Q. The firm wants to drop the product Q as it is yielding less contribution per unit and add the product R. By adding the product R, the new fixed cost is likely to be ₹ 2,50,000/- and the sales volume will increase to ₹ 18,00,000/-. Consider the following information and suggest whether the firm should change the product or not.

Existing Product-mix

Product	Selling price per unit (₹)	Variable cost per unit (₹)	% of Sales
P	80	32	60
Q	100	40	40

The total fixed cost during the year is ₹ 2,00,000/- and sales are ₹ 16,00,000/-

Product	Selling price per unit (₹)	Variable cost per unit (₹)	% of Sales
P	100	40	30
R	120	48	70

Sol.:

Existing Product-mix

Product	Selling price per unit (₹)	Variable cost per unit (₹)	% of Sales
P	80	32	60
Q	100	40	40

The total fixed cost during the year is ₹ 2,00,000/- and sales are ₹ 16,00,000/-

Product	Selling price per unit (₹)	Variable cost per unit (₹)	% of Sales
P	100	40	30
R	120	48	70

New fixed cost is ₹ 2,50,000 and sales are ₹ 18,00,000.

There are two situations i.e., situation I with products P and Q and situation II with products P and R. By comparing the net profit earned in both the situations we can decide which situation is better.

Situation I

(With products P and Q).

Calculation of contribution ratio of each product,

$$\text{Contribution ratio} = \frac{\text{Selling Price} - \text{Variable Cost}}{\text{Selling Price}} \times \% \text{ Share in total sales}$$

Contribution ratio for product,

$$\begin{aligned} P &= \frac{80 - 32}{80} \times 0.6 = \frac{48}{80} \times 0.6 \\ &= 0.6 \times 0.6 = 0.36 \end{aligned}$$

Contribution ratio for product,

$$\begin{aligned} Q &= \frac{100 - 40}{100} \times 0.4 \\ &= \frac{60}{100} \times 0.4 = 0.6 \times 0.4 \\ &= 0.24 \end{aligned}$$

Total of contribution ratios for products P and Q

$$= 0.36 + 0.24$$

$$= 0.60$$

Total contribution = Sales \times Contribution ratio

$$= 16,00,000 \times 0.6$$

$$= ₹ 9,60,000$$

Profit = Contribution – Fixed cost

$$= 9,60,000 - 2,00,000$$

$$= ₹ 7,60,000$$

Situation II

(With products P and Q)

Contribution ratio for product,

$$P = \frac{100 - 40}{100} \times 0.3 \quad \therefore \left(\frac{30}{100} = 0.3 \right)$$

$$= \frac{60}{100} \times 0.3 = 0.6 \times 0.3$$

$$= 0.18$$

$$P = \frac{100 - 40}{100} \times 0.3 \quad \therefore \left(\frac{30}{100} = 0.3 \right)$$

$$= \frac{60}{100} \times 0.3 = 0.6 \times 0.3$$

$$= 0.18$$

Total of the contribution ratios for products P and R

$$= 0.18 + 0.42 = 0.6$$

Total contribution = Sales \times Contribution ratio

$$= 18,00,000 \times 0.6$$

$$= ₹ 10,80,000$$

Profit = Contribution – Fixed cost

$$= 10,80,000 - 2,50,000$$

$$= ₹ 8,30,000$$

\therefore The profit in situation II is higher, hence it is better to drop product Q and add product R in place of product Q.

1.7.3 Sell or Process Further

Q31. Explain briefly about sell or process further.

Ans :

The sell or process further decision is the choice of selling a product or processing it further to earn additional revenue. Most of the manufacturers faces the decisions either to sell products at split-off point or process further. Decision to be choosed between selling a product at split-off or processing further is to be known as short-run operating decision. Value to a product is added by additional processing, which increases the selling price of the product above the price of selling at split-off. A product to be processed further is depended up on whether increase in total revenues surplus the additional costs incurred for processing the product apart from split-off. The sell or process further decision type is mainly applicable to farms and producers of natural resources.

Decision for a product is to be sold or processed further is determined by the two common conditions,

1. Evaluation by the company for the feasibility of processing product apart from split-off and occurrence of equipment costs and other fixed costs in case of additional processing is needed.

This situation is a capital budgeting problem and also cannot determine whether incremental revenues surpass incremental costs. As new investments are involved in machinery and building, rate of return is also considered.

2. A product is already processed by the company apart from split-off and invested in equipment and personnel.

Under this situation, only those costs are relevant costs which are associated to the additional processing of each product apart from split-off point. For further decisions for processing, joints costs are relevant. Additional processing has certain fixed costs such as supervisory salaries. These costs are incremental if removed by selling products at split-off and should be considered under decision analysis. Salary costs are not incremental, incase salaried personnel are assigned on other duties in the company due to discontinuation of additional processing. Incase equipments which were previously used for additional processing are idle, then they are not to be considered for decision analysis. Depreciation expenses are not relevant in short-run operating decisions, as these costs are allocations of costs which incurred in the past.

In order to decide which action to be considered, the company compares the contribution margin from partially processed product's sale with contribution margin of completely processed product's sale.

1.7.4 Operate or Shut-down

Q32. Explain briefly about operate or shut-down of products in marginal costing.

Ans :

Shutdown problems involve the following types of decisions,

1. Whether or not to close down a factory department.
2. If the decision is to shutdown whether the closure should be permanent or temporary.

Operating or shutting down of products with reference to marginal costing also referred as closing down or suspending of activities. A shutdown point is one at which a company experiences not benefit for continuing operations and shutdown temporarily.

Sometimes, it becomes necessary for a firm to temporarily suspend or close the activities of a particular product, department or factory as a whole due to trade recession. The decision to close down or suspend its activities will depend on whether products are making a contribution towards fixed costs or not.

If the products are making a contribution towards fixed costs, it is preferable not to close business or suspend the activities to minimize the losses. If the business is closed down there may be certain fixed costs which could be avoided but there will be certain expenses which will have to be incurred at the time of closing the operation like redundancy payments, necessary maintenance of plant or overhauling of plant on reopening, training of personnel etc.

These types of costs are associated with closing down of the business and must be taken into consideration before taking any decision. However, fixed costs may be general or specific. General fixed costs may or may not remain constant while specific costs will be directly affected by the closing down of the operation.

In general, the excess of contribution over specific fixed costs will ~~have to be~~ compared with reduction in general fixed cost. If the former exceeds the latter it is profitable to continue the activities and close down or suspend activities if the latter exceeds the former. While fixed costs remain during the shutdown, variable cost can be eliminated.

Types

Marginal costing is usually used in taking decisions with respect to continue a plant/unit or to shut down it. The shutting down of a plant is basically of two types,

1. Temporary shut down
2. Permanent shut down or complete shut down.

1. Temporary Shut Down

It results from the combination of output and price where the company earns just enough revenue to cover its total variable cost. Temporary shut down is a short term decision for suspending or closing down the plant operations for a shorter period of time. Management of the firm would usually take up this decision of trade recession with an aim to minimize the effect of recession on the firm's profitability in the future. In such circumstances the firm decides to re-start the plant's operation in the future period of time after recovering from the recessions effect. A firm can continue their plant activities even in recession if the selling price of the product is more than that of marginal cost which would help in compensating the loss. The firm can ignore few of its fixed costs by reducing the number of firm's production operations.

While going for the shutting down decisions in the short run, the firm needs to take into consideration and compare the losses that would incur because of closing down of the plant with that of losses due to the continuation of the plant activities with the help of this comparison the management would be able to come to a conclusion as follows,

- (i) If the loss due to closing down is more than that of continuing the plant then, it is better for the firm to continue the plant's operations.
- (ii) If in case the losses due to shutdown of plant is less than that of its continuation then it is advisable to shut down the plant for a short period.

2. Permanent Shut Down or Complete Shut Down

If the firm is not in a position to make up the adequate rate of return on their investment which would be compensating the risk that is involved in the business, then it is better to shut down the plant completely without giving it a second chance to re-start. The length of a shutdown may be temporary or permanent, depending on the nature of the economic conditions leading to the shutdown.

These decisions are usually taken in the long run. Management of the firm must take into consideration and conduct comparison among the revenues of two different alternatives as follows,

- (i) Revenues from the complete shut down of a plant and sale of the plant.
- (ii) Revenues from the operations in case of continuing the plant's operations.

Soon after the comparison is made between two alternatives the firm will get a strong base for taking effective decision with respect to the shutting down of a plant.

Q33. Explain various factors to be consider shut-down of a plant.

Ans :

A factory may have to case operation for sometime due to various reasons such as labour troubles, Material shortage, Major break down, market depression, etc. this shut down may be of temporary nature and operations are renewed when the situation improves. Shut down costs are classified as follows:

1. Costs incurred on suspension of operations. These include cost of notifying customers about shut down, retrenchment and lay off costs, etc.
2. Costs incurred during continued shut down such as cost of care and custody of plant and machinery and other equipments. etc.
3. Costs incurred on remaining operations after shut down e.g. cost of recruiting and training new workers time lag in picking up production and sales, additional promotional costs etc.

PROBLEMS

20. The management of a company considers that product B, one of its three main lines, is not as profitable as the other two with the result that no particular efforts are being made to push its sales. The selling prices and costs of these products are as follows :

Product	Selling Price	Direct Material	Direct Labour		
			Dept. X	Dept. Y	Dept. Z
A	50	10	4	2	2
B	40	6	2	4	2
C	45	8	2	2	4

Overhead rates for each department per rupee of direct labour are as follows :

Particulars	Dept X	Dept Y	Dept Z
Variable Overhead	1.25	0.50	1.00
Fixed Overhead	1.25	2.00	1.50
	2.50	2.50	2.50

What advice would you give to the management about the profitability of Product B ? Give reasons.

*Sol.:***Comparative Profitability Statement**

Particulars	Product A		Product B		Product C	
Selling Price		50.00		40.00		45.00
Less: Marginal Cost						
Direct Material	10.00		6.00		8.00	
Direct Labour	8.00		8.00		8.00	
Variable Overhead						
Dept. X	5.00		2.50		2.50	
Dept. Y	1.00		2.00		1.00	
Dept. Z	2.00		2.00		4.00	
		26.00		20.50		23.50
Contribution		24.00		19.50		21.50
P/V Ratio		48%		48.75%		47.77%
	$\frac{24.00}{50} \times 100$		$\frac{19.50}{40} \times 100$		$\frac{21.50}{44} \times 100$	

Conclusion : As the P/V Ratio of Product B is the highest, it is the most profitable product line.

21. A businessman produces and sells 95,000 units of a product in a year at its 80% production capacity. The selling price of the product is ₹ 8 per unit. The variable cost is 75% of selling price per unit. The fixed cost is ₹ 3,50,000. The company is continuously incurring losses and the management plans to shut down the plant. The fixed cost is expected to be reduced to ₹ 1,30,000. Additional costs of plant shutdown are expected at ₹ 15,000.

Should the plant be shut down? What is the capacity level of production of shutdown point?

*Sol.:***Calculation of Shutdown Point**

Shutdown Point = Avoidable Fixed Cost/Contribution Per Unit

Calculation of Contribution Per Unit

Contribution P.U = Selling price P.U - Variable cost per unit

Selling Price = ₹ 8 per unit

Variable Cost = 75% of selling price per unit

i.e., ₹ 8 × 75% = ₹ 6

Contribution of P.U = ₹ 8 - ₹ 6 = ₹ 2

Calculation of Avoidable Fixed Cost

Avoidable Fixed Cost = Total fixed cost – Minimum fixed cost – Shutdown cost

$$= 3,50,000 - 1,30,000 - 15,000$$

Avoidable Fixed Cost = 2,05,000 units

$$\therefore \text{Shutdown Point} = \frac{2,05,000}{2} = 1,02,500 \text{ UNITS}$$

Since, present output 95,000 units are less than shutdown point i.e., 1,02,500 units, it is preferable to shutdown the plant.

Calculation of Capacity Level of Production of Shutdown Point

Total Capacity = 95,000 – 5 – 80% = 1,18,750 units

Capacity Level at Shutdown Point,

$$= 1,02,500 - 5 - 1,18,750 \times 100 = 86.31578.$$

- 22. Assume that total fixed costs of a company are Rs. 7.5 lakhs, the selling price per unit of the firm's product is Rs. 50 and the variable cost per unit is Rs. 40. For last several years the firm is incurring losses due to low demand for its product. Should the firm discontinue production till the demand picks up?**

Sol.:

The firm should make an estimate of the costs which can be eliminated by shutting down the plant and compare it with the losses which will be incurred if the production continues. If the avoidable costs are greater than the losses, the production may be suspended. Assume in the example that avoidable costs are estimated at Rs. 3.5 lakhs. If the firm is able to generate contribution at least equal to Rs. 4 lakhs (i.e., Rs. 7 lakhs - Rs. 3.5 lakhs), it should continue its production. In other words, if the firm's sales are Rs. 20 lakhs, it should not shut down. The shut-down sales of Rs. 20 lakhs are found as follows:

$$\begin{aligned} \text{Shut-down sales} &= \frac{\text{Fixed Cost-Avoidable cost on shut-down}}{\text{Contribution ratio}} \\ &= \frac{\text{Rs. 7.5 lakhs} - \text{Rs. 3.5 lakhs}}{1 - \frac{\text{Rs. 40}}{\text{Rs. 50}}} = \frac{\text{Rs. 4 lakhs}}{.20} = \text{Rs. 20 lakhs} \end{aligned}$$

- 23. Anand Ltd., produces 2,00,000 units of a product X at a total cost of Rs. 25,00,000 including Rs. 10 per unit of variable cost. The selling price is Rs. 15 per unit. On account of recession, demand has fallen and Anand Ltd. has to cut the selling price by 20%. The management wants to know if the factory should be shut - down till the demand picks up again ?**

Ans :

Marginal Costing Statement

Sales [2,00,000 × Rs 15]	30,00,000
(-) Variable cost [2,00,000 × Rs 10]	20,00,000
	<u>10,00,000</u>
(-) Fixed cost [25,00,000 – 20,00,000]	5,00,000
Profit	<u>5,00,000</u>
If selling price reduce by 20%	
Actual selling price	15.00
(-) drop 20% (15.00 × 20%)	3.00
New selling price per unit	<u>12.00</u>

1.7.5 Special Order Pricing

Q34. Explain briefly about special order pricing with an example.

Ans :

Special order pricing is a technique used to calculate the lowest price of a product or service at which a special order may be accepted and below which a special order should be rejected. Usually a business receives special orders from customers at a price lower than normal. In such cases, the business will not accept the special order if it can sell all its output at normal price. However when sales are low or when there is idle production capacity, special orders should be accepted if the incremental revenue from special order is greater than incremental costs.

This method of pricing special orders, in which price is set below normal price but the sale still generates some contribution per unit, is called contribution approach to special order pricing. The idea is that it is better to receive something above variable costs, than receiving nothing at all.

The following example is used to illustrate special order pricing:

Example

A company is producing, on average, 10,000 units of product A per month despite having 30% more capacity. Costs per unit of product A are as follows:

Particulars	Rs
Direct Material	8.00
Direct Labor	5.00
Variable Factory Overhead	2.00
Variable Selling Expense	0.50
Fixed Factory Overhead	3.00
Fixed Office Expense	2.00
	<u>20.50</u>

The company received a special order of 2,000 units of product A at 17.00 per unit from a new customer. Should the company accept the special order, provided that the customer has agreed to pay the variable selling expenses in addition to the price of the product?

Sol :

The increment cost per unit for the special order is calculated as:

Direct Material	8.00
Direct Labor	5.00
Variable Factory Overhead	2.00
	15.00

Since the incremental cost per unit is less than the price offered in the special order, the company should accept it. Accepting special order will generate additional contribution of 2.00 unit and 4,000 in total.

1.7.6 Replace or Retain

Q35. Explain briefly about replace or retain of plant.

Ans :

The important decision under decision analysis is to replace or retain plant and equipment, which is need to be done carefully. There are various differential costs which are important in taking replacing or retaining decisions such as loss on old equipment's sales, change in fixed overhead costs, capital investment and associated costs like interest and rate of return relevant costs to making a change to equipment.

Besides differential costs, management is needed to consider differential benefits that they may get such as rise in sales, higher production, realisable value of old machines, savings in operating costs and tax benefits.

Differential analysis facilitates in order to evaluate decision alternatives. The factors that determine alternatives are revenues and relevant costs. Under this, selection of least cost alternative is the main objective. The methods to tackle these kind of problems are profit estimation and cost computations.

The other qualitative factors that need to be given importance in determining business decisions are competition pressure, morale, maintenance of supply sources, marketing outlets and existing personnel organizations.

24. Abhishek Ltd manufactures a product whose cost details are given below:

Material Rs. 35; Labour Rs. 12.50; Factory OH (50% Fixed) Rs. 62.50; Sales Overhead (25% Variable) Rs. 8.00; 60,000 Units of Rs. 118.00.

The Company sells 60,000 units of the product at Rs. 143 per unit in the domestic market. It received an order to supply 20,000 units of the product at Rs. 98 per unit, which will be sold in the Foreign Market. There is sufficient spare capacity available (with the company. Should the company accept or reject the offer?

Sol :

(Oct.-20, June-19)

Cost Statement

Particulars	Period A	Period B	Period C
Fixed Overheads			
(a) Advertisement	5,000	5,000	5,000
(b) Salaries of Sales Dept.	10,000	10,000	10,000
(c) Exp. of Sales Dept.	3,000	3,000	3,000
(d) Counter Salesman Salary	12,000	12,000	12,000
Total (A)	30,000	30,000	30,000
Variable OH			
Travellers Commission (10% an Travellin Sales)	2,000	3,000	4,000
Exp. (5% an Sales)	1,000	1,500	2,000
Total (B)	3,000	4,500	6,000
Total Sales OH (A + B)	33,000	34,500	36,000

Exercise Problems

1. Fixed overhead Rs. 2,40,000

Variable cost per unit Rs. 15

Selling price per unit Rs. 30.

Find out: (a) Break even sales units, and (b) if the selling price is reduced by 10%. What will be the new break even point ?

Ans :

(a) 16,000 units ; (b) Rs. 20,000 units).

2. Profit Rs. 200

Sales Rs. 2,000

Variable cost 75% of sales

(a) Find out Break even sales ; (b) what would be the sales volume to earn a profit of Rs. 500.

Ans :

(a) Rs. 1,200 ; (b) Rs. 3,200.

3. You are required to calculate break even volume using the following data :

Profit Rs. 5,000 (20% of sales)

P/V Ratio 50%.

Ans :

Rs. 15,000.

4. From the following figures, you are required to calculate (i) P/V Ratio, (ii) Break Even Sales Volume (iii) Margin of Safety and (iv) Profit.

Sales Rs. 4,000; Variable cost Rs. 2,000 ; Fixed cost Rs. 1,600.

Ans :

(i) 50% ; (ii) Rs. 3,200 ; (iii) Rs. 800 ; (iv) Rs. 400.

5. Given:

Break even volume Rs. 8,000

Fixed costs Rs. 3,200

Find out profit when sales are Rs. 10,000.

Ans :

Rs. 800

6. For the final assembly of a product in an engineering company, a certain component is required. The company has the options either to produce the component itself or purchase it from the market. The production department which can make the component is currently working to full capacity and earning a contribution of ₹ 10 per hour on an order which will last for another ten months. Repeat orders are very likely. Variable cost of making the component is ₹ 42 and it takes one hour per unit. Market price of the component is ₹ 45 per unit.

What advice will you give to the management of the company ?

Ans :

Component should be purchased from the market because purchase price of ₹ 45 is lower than the variable cost of ₹ 42 + ₹ 10 contribution foregone for 1 hour.

7. A factory operates at full machine capacity to produce an assembly type product with 3 component parts. Data concerning one unit of the product are as follows :

Component Parts	ItemsMachine Hours	Costs		
		Variable	Fixed	Total
A	5	24	8	32
B	8	30	10	40
C	10	30	30	60
Assembly	-	50	20	70
Total		134	68	202
Sales price				250

There is a big demand of the product in the market but the factory is unable to expand due to machine capacity limitation. If any one component is purchased from outside and that capacity is diverted to other component (same machine can produce any component) the factory will be able to sell more assembled products.

If component parts A, B and C can be purchased at ₹ 50, ₹ 60 and ₹ 80 respectively, state which one is to be purchased.

Ans :

Component B should be purchased.

8. You are furnished undernoted data :

	Product A	Product B
Sales	10,000 units @ ₹ 1	7,500 units @ ₹ 1.33
Costs :		
Fixed	₹ 2,000	₹ 5,500
Variable	@ ₹ 0.60 per unit	@ ₹ 0.40 per unit

Determine the effect on profits, if sales of A or B are increased in the mixture of total sales. Assume that idle capacity exists and production of A or B in units can be increased by 50%.

Ans :

Profit is the maximum when sales of B are increased in the mixture of total sales.

9. On the basis of the following information in respect of an engineering company, what is the product mix which will give the highest profit attainable? Do you recommend overtime working upto a maximum of 15,000 hours at twice the normal wages? (Overheads are ignored for the purpose of this question)

Products manufactured	A	B	C
Raw material per unit	10 kgs.	6 kgs.	5 kgs.
Labour hours per unit @ T 1 per hour	15	25	20
Sales price per unit	₹ 125	₹ 100	₹ 200
Maximum production possible	6,000 units	4,000 units	3,000 units

1,00,000 kgs. raw materials are available @ ₹ 10 per kg. Maximum production hours are 1,84,000 with facility for a further 15,000 hours on overtime basis at twice the normal wage rate.

Ans :

Labour is the key factor. A product mix of 6,000 units of A, 1,360 units of B and 3,000 units of C will give maximum contribution of ₹ 4,70,400 ; Overtime is not recommended as it reduces contribution by ₹ 6,000.

Short Question and Answers

1. Distinguish between absorption costing and marginal costing.

Ans :

The following are the various points of difference between absorption costing and marginal costing.

S.No.	Absorption Costing	S.No.	Marginal Costing
1.	All costs fixed and variable are included for ascertaining the cost.	1.	Only variable costs are included. Fixed costs are recovered from contribution.
2.	Different unit costs are obtained at different levels of output because of fixed expenses remaining same.	2.	Marginal cost per unit will remain same at different levels of output because variable expenses vary in the same proportion in which output varies.
3.	Difference between sales and total cost is profit.	3.	Difference between sales and marginal cost is contribution and difference between contribution and fixed cost is profit or loss.
6.	Apportionment of fixed expenses on an arbitrary basis gives rise to over or under absorption of overheads which ultimately makes the product cost inaccurate and unreliable.	6.	Only variable costs are charged to products, marginal cost technique does not lead to over or under absorption of fixed overheads.
7.	Absorption costing is not very helpful in taking managerial decisions- such as whether to accept the export order or not, whether to buy or manufacture, the minimum price to be charged during the depression etc.	7.	Technique of marginal costing is very helpful in taking managerial decisions because it takes into consideration the additional cost involved only assuming fixed expenses remaining constant.
8.	Costs are classified according to functional basis such as production cost, office and administrative cost and selling and distribution cost.	8.	Costs are classified according to the behaviour of costs i.e., fixed costs and variable costs.

2. What is CVP Analysis?

Ans :

Meaning

Cost-Volume-Profit analysis is a technique for studying the relationship between cost, volume and profit. Profits of an undertaking depend upon a large number of factors. But the most important of these factors are the cost of manufacture, volume of sales and the selling prices of the products.

Definitions

In the words of Herman C. Heiser. "the most significant single factor in profit planning of the average business is the relationship between the volume of business, costs and profits". The CVP relationship is an important tool used for the profit planning of a business.

The three factors of CVP analysis i.e., costs, volume and profit are interconnected and dependent on one another. For example, profit depends upon sales, selling price to a large extent depends upon cost and cost depends upon volume of production as it is only the variable cost that varies directly with production, whereas fixed cost remains fixed regardless of the volume produced. In cost-volume-profit analysis an attempt is made to analyse the relationship between variations in cost with variations in volume.

3. Features of Management Accounting.*Ans :*

The important features of management or managerial accounting are as follows,

(i) Facilitates Internal Reporting

Managerial accounting is very useful for the managers in taking decisions of the internal matters of the organization. It facilitates in internal reporting.

(ii) Offers Useful Information

Managerial accounting gathers information, categorizes it and then provides the data according to the needs of the management and managers.

(iii) Uses Cause and Effect Relationship

Managerial accounting makes use of the cause and effect relationship and helps in finding out the reasons for loss or profit of the business.

(iv) Organized Activity

Management is not an isolated activity but is essentially a teamwork in formally organized groups.

(v) Follows No Special Methods and Rules

Managerial accounting does not follow any particular set rules and methods. It basically follows special rules and methods according to the suitability of the management.

(vi) Provides Future Information

Managerial accounting basically provides future oriented information which helps in taking decisions to the management.

(vii) Maintains Confidentiality

Managerial accounting allows only the top executives of the management to go through the financial reports of the business. It is mainly concerned with confidential financial reports.

4. Functions of Management Accounting.*Ans :*

The main functions of management accounting are :

(i) Forecasting and planning

One of the important functions of management accounting is to provide necessary information and data for making short-term and long-term forecasts and planning the operations of the business. For doing this, the management accountant uses techniques of statistics, like probability, trend study of correlation and regression; budgeting and standard costing; capital budgeting; marginal costing and funds flow statement etc. These are important tools in the hands of management accountant for the planning of the business.

(ii) Organising

The management accountant helps the management in organising the human and non-human resources of the business by analysing different functions and assigning specific responsibilities. He tries to organise the accounting and finance function of the business on the modern lines.

5. Define Management Accounting.*Ans :***Meaning**

Management Accounting is the presentation of accounting information in such a way as to assist management in the creation of policy and the day-to-day operation of an undertaking. Thus, it relates to the use of accounting data collected with the help of financial accounting and cost accounting for the purpose of policy formulation, planning, control and decision-making by the management. Management accounting links management with accounting as any accounting information required for taking managerial decisions is the subject matter of management accounting. Some leading definitions of Management Accounting are given below :

Definitions

(i) According to R.N. Anthony "Management Accounting is concerned with accounting information that is useful to management."

(ii) According to Batty "Management Accounting is the term used to describe accounting methods, systems and techniques

which coupled with special knowledge and ability, assists management in its task of maximising profits or minimising losses. Management Accountancy is the blending together into a coherent whole, financial accounting, cost accountancy and all aspects of financial management."

6. What are the objectives of Management Accounting?

Ans :

The primary objective of management accounting is to enable management to maximise profits or minimise losses. This is done through the presentation of statements in such a way that management is able to take correct policy decisions. The following are the important objectives of management accounting :

(i) Planning and Policy Formulation

The object of management accounting is to supply necessary data to the management for formulating plans. Planning is essentially related to taking decisions for future. It also includes forecasting, setting goals and deciding alternative courses of action. Management accountant prepares statements of past results and gives estimations for the future. He also gives his assessment of various facets and gives his preference for a particular alternative. The figures supplied and opinion given by the management accountant help management in planning and policy formation.

(ii) Helpful in Controlling Performance

Management accounting devices like standard costing and budgetary control are helpful in controlling performance. The work is divided into different units and separate goals are set up for each unit. The performance of every unit is made the responsibility of a particular person. The required authority for getting the work done is also delegated to the concerned persons. The actual results are compared with predetermined objectives. The management is able to find out the deviations and take necessary corrective measures. Different departmental heads are associated with

preparing budgets and setting up goals. The management accountant acts as a coordinating link between different departments and he also monitors their performance to the top management. The management is able to control performance of each and every individual with the help of management accounting devices.

7. Define Cost Accounting.

Ans :

Costing is a specialised branch of accounting. It has been developed because of limitations of financial accounts. In the present day it is absolutely necessary that a business concern should operate its activities with utmost efficiency and at the lowest cost. The need for determination and control of costs necessitated new set of principles of accounting and thus emerged 'cost accounting' as a specialised branch of accounting.

The term 'cost' has a wide variety of meanings. Different people use this term in different senses for different purposes. For example, while buying a book, you generally ask, "how much does it cost"? Here the word cost means price. But in management terminology, the term cost refers to expenditure and not the price. For our purposes, cost is not the same as price.

8. What is Marginal Costing?

Ans :

The Institute of Cost and Management Accountants, London, has defined Marginal Costing as "the ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs". "In this technique of costing only variable costs are charged to operations, processes or products, leaving all indirect costs to be written off against profits in the period in which they arise."

Thus, in this context, marginal costing is not a system of costing such as process costing, job costing, operating costing, etc. but a technique which is concerned with the changes in costs and profits resulting from changes in the volume of output. Marginal costing is also known as 'variable costing'.

9. What is Absorption Costing?*Ans :*

Absorption Costing is a conventional technique of ascertaining cost. It is the practice of charging all costs both variable and fixed to operations, processes or products and is also known as 'full costing' technique. It is the oldest and widely used technique of ascertaining cost. Under this technique of costing, cost is made up of direct costs plus overhead costs absorbed on some suitable basis. Under this technique, cost per unit remains same only when the level of output remains same from time to time. But the level of output cannot remain same from time to time and so does the cost per unit because of fixed costs remaining same inspite of changes in the level of output. The change in cost per unit with a change in the level of output in absorption costing technique poses a problem to the management in taking managerial decisions. Absorption costing is useful if there is only one product, there is no inventory and overhead recovery rate is based on normal capacity instead of actual level of activity.

10. Advantages of Absorption Costing.*Ans :*

- (i) It suitably recognises the importance of including fixed manufacturing costs in product cost determination and framing a suitable pricing policy. In fact all costs (fixed and variable) related to production should be charged to units manufactured. Price based on absorption costing ensures that all costs are covered. Prices are well regulated where full cost is the basis.
- (ii) It will show correct profit calculation in case where production is done to have sales in future (e.g., seasonal sales) as compared to variable costing.
- (iii) It helps to conform with accrual and matching concepts which require matching cost with revenue for a particular period.
- (iv) It has been recognised by various bodies as FASB (USA), ASC (UK), ASB (India) for the purpose of preparing external reports and for valuation of inventory.

- (v) It avoids the separation of costs into fixed and variable elements which cannot be done easily and accurately.
- (vi) It discloses inefficient or efficient utilisation of production resources by indicating underabsorption or overabsorption of factory overheads.

11. Explain the importance of break-even analysis.*Ans :*

- (i) Break-even analysis can be used to forecast the future cost and revenue and depending on it future profit can be ascertained.
- (ii) Break-even analysis is of great importance in decision-making regarding 'make or buy' decisions.
- (iii) It serves as a valuable tool in sales projection.
- (iv) By the use of break-even analysis, cost can be controlled.
- (v) It is a vital tool for fixing the prices of the products.
- (vi) Break-even analysis helps in choosing a product mix when there is a limiting factor.

12. Define Break Even Analysis.*Ans :*

The study of cost-volume profit analysis is often referred to as 'break-even analysis' and the two terms are used interchangeably by many. This is so, because break-even analysis is the most widely known form of cost-volume-profit analysis. The term "break-even analysis" is used in two senses narrow sense and broad sense. In its broad sense, break-even analysis refers to the study of relationship between costs, volume and profit at different levels of sales or production. In its narrow sense, it refers to a technique of determining that level of operations where total revenues equal total expenses, i.e., the point of no profit, no loss.

13. Define Contribution.*Ans :***Meaning**

Contribution is the difference between sales and variable cost or marginal cost of sales. It may

also be defined as the excess of selling price over variable cost per unit. Contribution is also known as Contribution Margin or Gross Margin. Contribution being the excess of sales over variable cost is the amount that is contributed towards fixed expenses and profit.

If the selling price of a product is ₹ 20/- per unit and its variable cost is ₹ 15/- per unit, contribution per unit is ₹ 5/- (i.e. ₹ 20 – 15). Further, let us say that the fixed expenses are 50,000 and the total number of units sold is 8,000. This means that the total contribution is 8000×5 or ₹ 40,000 which is not sufficient even to meet the fixed expenses and the result is a loss of ₹ 10,000 (50,000 – 40,000). In case, the output is 10,000 units, then total contribution of ₹ 50,000 equals the fixed cost, and no amount is left for profit. The profit can be earned only when the amount of contribution exceeds the fixed costs. Hence, any output beyond 10,000 units, will give some profit e.g., at a level of output of 15,000 units, the total contribution is $15,000 \times 5 = ₹ 75,000$ while the fixed costs remain ₹ 50,000, thus making a profit of ₹ 25,000.

Contribution can be represented as :

$$\begin{aligned} \text{Contribution} &= \text{Sales} - \text{Variable (Marginal) Cost} \\ \text{or Contribution (per unit)} &= \text{Selling Price} - \text{Variable (or marginal) cost per unit} \\ \text{or Contribution} &= \text{Fixed Costs} + \text{Profit (- Loss)} \end{aligned}$$

14. Margin of Safety.

Ans :

The excess of actual or budgeted sales over the break-even sales is known as the margin of safety.

It is the difference between actual sales minus the sales at break-even point. It represents the amount by which sales revenue can fall before a loss is incurred. As at break-even point there is no profit no loss, sales beyond the break-even point represent margin of safety because any sales above the break-even point will give some profit. Thus,

$$\text{Margin of Safety} = \text{Total Sales} - \text{Sales at Break-Even Point}$$

Margin of safety can also be calculated with the help of the following formula:

$$\text{Margin of Safety (M/S)} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

This is so because margin of safety is the volume of sales beyond break-even point and all sales above the break-even point give some profit which can be calculated as :

$$\text{Profit} = \text{Margin of Safety} \times \text{P/V ratio Profit}$$

$$\text{or M.S.} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

15. Define Decision Making.

Ans :

Decision making is a process of identification and selection of an action from a number of alternative courses of action for resolving a problem in the organization.

Decision making acts as the basis for planning an activity in the organization. It is one of the important managerial functions. Decision making must be rational for achieving the set goals successfully. It is very

important to take the decisions at every stage of the organization. The decisions which are taken by top management are called strategic decisions and the decisions which are related to the normal day-to-day activities of organization are called as tactical or operational decisions.

16. Need of Management Accounting.

Ans :

The need and importance of managerial accounting are explained as follows,

- (i) Managerial accounting basically provides information on various things like cost, financial gains, specialized i.e., non-technical language and so on which is needed by the management for carrying out the business operations.
- (ii) Managerial accounting highlights and displays the accounting information in a manner which helps the management in policy making process.
- (iii) Managerial accounting is actually much more than numbers which does not need any explanation and can be clearly and easily understood.

Choose the Correct Answers

1. Financial accounting deals with : [b]
(a) Determination of Costs (b) Determination of profits
(c) Determination of prices (d) Determination of sales
2. Financial accounts record only [a]
(a) Actual figures (b) Budgeted figures
(c) Standard figures (d) None of the above
3. The term 'Management Accountancy' was first used in : [c]
(a) 1910 (b) 1939
(c) 1950 (d) 1986
4. Management Accounting relates to : [c]
(a) Recording of accounting data (b) Recording of costing data
(c) Presentation of accounting data (d) All of the above
5. The use of management accounting is : [b]
(a) Compulsory (b) Optional
(c) Obligatory (d) None of the above
6. _____ records by the firm in producing a product or service [b]
(a) Managerial Accounting (b) Cost Accounting
(c) Financial Accounting (d) None of the above
7. Managerial accounting deals with the _____ plans and policies [c]
(a) Current (b) Past
(c) Future (d) None of the above
8. Principles and procedures are not followed in _____. [b]
(a) Cost Accounting (b) Managerial Accounting
(c) Financial Accounting (d) Corporate Accounting
9. Management accountancy is a structure for [c]
(a) Costing (b) Accounting
(c) Decision making (d) Management
10. Who coined the concept of management accounting? [b]
(a) R.N Anthony (b) James H. Bliss
(c) J. Batty (d) American Accounting Association

11. The term contribution refers to... [b]
(a) The difference between selling price and fixed cost
(b) The difference between selling price and variable cost
(c) Profit
(d) None of these
12. Marginal costing technique helps the management in deciding... [d]
(a) Pricing
(b) To accept fresh orders at low price
(c) To make or buy
(d) All of the above
13. The accountant's concept of marginal cost differs from the Economist's concept of marginal cost in the matter of exclusion of... [c]
(a) Variable cost (b) Semi-variable cost
(c) Fixed cost (d) None of these
14. Direct material cost + direct labor cost + other variable costs is equal to... [a]
(a) Contribution (b) Total cost
(c) Marginal cost (d) Sales
15. The other name of marginal costing is... [d]
(a) Direct costing (b) Variable costing
(c) Incremental costing (d) All of the above
16. The term gross margin refers to... [b]
(a) Total profit (b) Contribution
(c) Profit before tax (d) Profit before interest and tax
17. Sales Rs. 100000, variable cost Rs. 60000 and net profit ratio is 10% on sales, find out fixed cost. [c]
(a) 40000 (b) 60000
(c) 50000 (d) The data inadequate
18. Sales Rs. 100000, variable cost Rs. 50000 and net profit ratio is 10% on sales, find out fixed cost. [b]
(a) 50000 (b) 40000
(c) 20000 (d) The data inadequate
19. Profit volume ratio establishes the relationship between... [d]
(a) Contribution and profit (b) Fixed cost and contribution
(c) Profit and sales (d) Contribution and sales value
20. Contribution/sales is equal to... [a]
(a) P/V ratio (b) Net profit ratio
(c) BEP (d) EPS

Fill in the Blanks

1. _____ cost change with the changes in output of production, but the change is not proportionate.
2. The study of cost-volume profit analysis is often referred to as _____.
3. Fixed costs and variable costs are also known as _____ and _____.
4. _____ is the difference between actual sales and the break-even sales.
5. The angle formed at a break-even point by the intersection of total cost line and sales line is called _____.
6. BEP stands for _____.
7. Contribution margin is also known as _____.
8. CVP Stands for _____.
9. Contribution = _____.
10. BEP (in is calculated by using formula) _____.
11. _____ means analyzing different alternatives and arriving at decision in the face of a particular situation about what to do and what not to do.
12. A _____ is essential in all the managerial functions like planning, organizing, staffing, directing, and controlling.
13. The decisions which are taken by the management for resolving the complex, unanticipated and exceptional problems are called _____.
14. _____ may limit the freedom of the (employees) managers as they are taken as per the policies.
15. The decisions are taken by the manager without consulting others in the organization are called _____.
16. The buy side of the decision also is called _____.
17. The decisions which are taken by the heads of two separate departments or the chiefs of all the departments of the organization are called _____.
18. _____ analysis facilitates in order to evaluate decision alternatives.
19. Recovery of _____ costs incurred while accepting special orders.
20. Make (or) buy decisions is also known as _____.

ANSWERS

1. Semi variable
2. Break-even analysis
3. Period cost, engineered costs
4. Margin of safety

5. Angle of incidence
6. Break-even point
7. Gross margin
8. Cost Volume Profit analysis
9. Sales-Variable cost
10.
$$\text{BEP (in Rs)} = \frac{\text{Fixed cost}}{\text{Contribution}} \times \text{Sales}$$
11. Decision-making
12. Decision
13. Non-programmed Decisions
14. Programmed Decisions
15. Personal Decisions
16. Outsourcing
17. Interdepartmental Decisions
18. Differential
19. Incremental
20. Purchasing Decisions

Rahul Publications

UNIT II

BUDGETARY CONTROL AND STANDARD COSTING:

Budget: Meaning – Objectives – Advantages and Limitations – Essentials of Budgets - Budgetary Control - Classification of Budgets - Preparation of Fixed and Flexible Budgets. Standard Costing: Meaning – Importance – Standard Costing and Historical Costing - Steps involved in Standard Costing. Variance Analysis: Material variance - Labour variance - Overhead variance.

2.1 BUDGET

2.1.1 Meaning

Q1. Explain the meaning of budget.

Ans :

Meaning

A budget is a plan that relates to a definite period of time and is expressed in quantitative terms. In other words, it is a predetermined statement that incorporates the policy of the management during a given period and serves as a standard for comparing with the actual results achieved.

Every one is familiar with the idea of a budget because it is essential in every walk of our life national, domestic and business. A budget is prepared to have effective utilization of funds and for the realization of objectives as efficiently as possible. Budgeting is a powerful tool to the management for performing its functions (i.e., formulating plans, coordinating activities and controlling operations etc.) efficiently.

Definitions

(i) **According to The Chartered Institute of Management Accountants, England,** defines a budget as under.

"A plain quantified in monetary terms prepared and approved prior to a defined period of time usually showing planned income to be generated and /or expenditure

to be incurred during that period and the capital to be employed to attain a given objective".

(ii) **According to Dickey,** "A budget a written plan covering projected activities of a firm for a defined period".

(iii) **According to Keller and Ferrara,** "A budget is a plan of action to achieve stated objectives based on predetermined series of related assumptions.

(iv) **According to Gordon and Shilling Law,** a budget is "a Predetermined detailed plan of action developed and distribution as a guide to current operations and as a partial basis for the subsequent evaluation of performance.

Q2. Explain the features of budget.

Ans :

- Financial and quantitative statement of the action plan.
- Laid down prior to the budget period during which it is followed.
- Prepared for specified objective.
- Based on management's policy.
- Regular reviews.
- All the item for saving.
- Accurate income projections.

Q3. What are the steps involved in preparation of budget.

Ans :

Step 1: Setting Objectives

Objectives must be specified clearly. Budgets must be present in written form covering all the aspects clearly and also mentioning the areas which require control in the budget and sources of revenue and expenditure must also be mentioned in the budget clearly. All these would help in making the budget clear to the people who are going to implement the budget successfully.

Step 2: Determining Key Factor

'Key factor' is also known as 'Budget factor'. Key factor refers to that resource which does not have abundant supply and its shortage restricts the organization from enjoying the maximum profit. In order to prepare an effective budget, proper identification and forecasting of key factor is a must.

Step 3: Appointing Budget Committee and Controller

Preparation of a budget needs the full time services of senior executives. In budget preparation, the senior executives are helped by the budget committee. The higher authorities of various departments together forms the budget committee and the managing directors acts as the chairman. The task of coordinating and developing the budget programs and preparing 'Budget Manual' are assigned to the 'controller'.

Step 4: Preparation of Budget Manual

Budget Manual is a schedule (document or booklet) which includes all the budgeting procedures in a written form. Budget manual must be properly prepared with indexes. The copy of budget manual must be sent to the heads of each department for further references and guidance.

Step 5: Deciding Budget Period

Budget period is the period which is being covered under the budget. Usually, calendar year

or financial year is taken as the budget period. The budget period is further divided and categorized into shorter periods like months or quarters.

Step 6: Setting Standards of Activity Levels

On the basis of the past statistical information, the present situations, estimations about future market conditions the known changes in the market, standards of activity levels for future period can be decided. Achieving greater success in the present year when compared to the previous years is an indication of business progress.

2.1.2 Essentials of Budgets**Q4. Explain the essentials of budgets.**

Ans :

The following are the essentials of a budget :

- It is a plan expressed in monetary terms but it can also contain physical units.
- It is prepared prior to a defined period of time (budget period) during which it will operate.
- It is related to a definite future period.
- It is approved by the management for implementation.
- It usually shows the planned income to be generated and expenditure to be incurred.
- It also shows capital to be employed during the period and
- It is prepared for the purpose of implementing the policy formulated by the management and the objective to be achieved during the period.

Thus, a budget fixes a target in terms of rupees or quantities against which the actual performance is measured. A budget can, therefore, be taken as a document which is closely related to both the management function as well as the accounting function of an organization.

Q5. What are the differences between budget and forecasting?

Ans :

S.No.	Nature	Budget	Forecast
1.	Events	It relates to planned events i.e., the policy and programme to be followed followed in a future period under planned conditions.	It is concerned with probable events likely to happen anticipated conditions during a specified period of time.
2.	Period	It is usually planned separately for each accounting period.	It may cover a long period (or) years.
3.	Coverage	It (refer budget) comprises the whole business unit. Sectional budgets are coordinated into a logical whole.	It may cover a limited function (or) activity of business as sales forecast.
4.	Control	Budget is a tool of control as it represents actions which can be shaped according to will be suit conditions which may or may not happen.	It does not connote any sense of control as forecast is merely a statement of future events.
5.	Process	The process of budget starts where forecast ends and converts it not a budget.	The function of forecast ends with the forecast of likely events.
6.	Spheres	It is made in respect of those spheres which are related to business (or) industry.	It is made in several other spheres which may not be connected with the budgeting process.

2.2 BUDGETARY CONTROL

Q6. What is meant by Budgetary Control System?

Ans :

Meaning

Budgetary control is the process of determining various budgeted figures for the enterprises for the future period and then comparing the budgeted figures with the actual performance for calculating variances, if any. First of all budgets are prepared and then actual results are recorded. The comparison of budgeted and actual figures will enable the management to find out discrepancies and take remedial measures at a proper time. The budgetary control is a continuous process which helps in planning and co-ordination. It provides a method control too. A budget is a means and budgetary control is the end-result.

Definitions

- (i) **According to Brown and Howard**, "Budgetary control is a system of controlling costs which includes the preparation of budgets, co-ordinating the department and establishing responsibilities, comparing actual performance with the budgeted and acting upon results to achieve maximum profitability."
- (ii) **According to Wheldon** characterises budgetary control as 'planning in advance of the various functions of a business so that the business as a whole is controlled'.

(iii) According to J. Batty defines it as "A system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities and services."

(iv) According to Welsch budgetary control with-day-to-day control process. "Budgetary control involves the use of budget and budgetary reports, throughout the period to co-ordinate, evaluate and control day-to-day operations in accordance with the goals specified by the budget'.

Q7. What are the objectives of Budgetary Control System?

Ans :

Budgetary control is essential for policy planning and control. It also acts as an instrument of co-ordination. The main objectives of budgetary control are as follows :

1. To ensure planning for future by setting up various budgets. The requirements and expected performance of the enterprise are anticipated.
2. To co-ordinate the activities of different departments.
3. To operate various cost centres and departments with efficiency and economy.
4. Elimination of wastes and increase in profitability.
5. To anticipate capital expenditures for future.
6. To centralise the control system.
7. Correction of deviations from the established standards.

2.2.1 Essentials

Q8. Describe the essential steps of a budgetary control system.

Ans :

(Imp.)

There are certain steps which are necessary for the successful implementation of a budgetary control system. They are as follows :

1. Organisation for Budgetary Control

The proper organisation is essential for the successful preparation, maintenance and administration of budgets. A Budgetary Committee is formed which comprises the departmental heads of various departments. All the functional heads are entrusted with the responsibility of ensuring proper implementation of their respective departmental budgets.

The Chief Executive is the overall incharge of budgetary system. He constitutes a budget committee for preparing realistic budgets. A budget officer is the convener of the budget committee who co-ordinates the budgets of different departments, departmental budgets.

2. Budget Centres

A budget centre is that part of the organisation for which the budget is prepared. A budget centre may be a department, section of a department or any other part of the department. The establishment of budget centres is essential for covering all parts of the organisation. The budget centres are also necessary for cost control purposes. The appraisal of performance of different parts of the organisation becomes easy when different centres are established.

3. Budget Manual

A budget manual is a document which spells out the duties and the also the responsibilities of the various executives concerned with the budgets. It specifies the relations among various functionaries.

A budget manual covers the following matters :

- (i) A budget manual clearly defines the objectives of budgetary control system. It also gives the benefits and principles of this system.
- (ii) The duties and responsibilities of various persons dealing with preparation and execution of budgets are also given in a budget manual. It enables the management to know of persons dealing with various aspects of budgets and clarify their duties and responsibilities.

- (iii) It gives information about the sanctioning authorities of various budgets. The financial powers of different managers are given in the manual for enabling the spending of amount on various expenses.
- (iv) A proper table for budgets including the sending of performance reports is drawn so that every work starts in time and a systematic control is exercised.
- (v) The specimen forms and number of copies to be used for preparing budget reopens will also be stated. Budget centres involved should be clearly stated.
- (vi) The length of various budget periods and control points be clearly given.
- (vi) The procedure to be followed in the entire system should be clearly stated.
- (viii) A method of accounting to be used for various expenditures should also be stated in the manual.

A budget manual helps in knowing in writing the role of every employee, his duties, responsibilities, the ways of, undertaking various tasks etc. it also helps in avoiding ambiguity of any time.

4. Budget Officer

The Chief Executive who is at the top of the organisation, appoints some person as Budget Officer. The budget officer is empowered to scrutinise the budgets prepared by different functional heads and to make changes in them, if the situation so demands. The actual performance of different departments is communicated to the Budget Officer. He determines the deviations in the budgets and takes necessary steps to rectify the deficiencies, if any. He works as a co-ordinator among different departments and monitors the relevant information. He also informs the top management about the performance of different departments. The budget officer will be able to carry out his work fully well only if he is conversant with the working of all the departments.

5. Budget Committee

In small scale concerns, the accountant is made responsible for preparation and implementation of budgets. In large scale concerns a committee known as Budget Committee is formed. The heads of all the important departments are made members of this committee. The committee is responsible for preparation and execution of budgets. The members of this committee put up the case of their respective departments and help the committee to take collective decisions, if necessary. The Budget Officer acts as co-ordinator of this committee.

6. Budget Period

A budget period is the length of time for which a budget is prepared. The budget period depends upon a number of factors. It may be different for different industries or even it may be different in the same industry or business. The budget period depends upon the following considerations :

- (a) The type of budget *i.e.*, sales budget, production budget, raw materials purchase budget, capital expenditure budget. A capital expenditure budget may be for a longer period *i.e.*, 3 to 5 years ; purchase, sale budgets may be for one year.
- (b) The nature of demand for the products.
- (c) The timings for the availability of the finances.
- (d) The economic situation of the cycles.
- (e) The length of trade cycles.

All the above mentioned factors are taken into account while fixing the period of budgets.

7. Determination of Key Factor

The budgets are prepared for all functional areas. These budgets are inter-dependent and inter-related. A proper co-ordination among different budgets is necessary for making the budgetary control a success. The constraints on some budgets may have an effect on other budgets too. A factor which influences all other budgets is known as Key

Factor or Principal Factor. There may be a limitation on the quantity of goods a concern may sell. In this case, sales will be a key factor and all other budgets will be prepared by keeping in view the amount of goods the concern will be able to sell. The raw material supply may be limited ; so production, sales and cash budgets will be decided according to raw materials budget. Similarly, plant capacity may be a key factor if the supply of other factors is easily available.

2.2.2 Advantages and Limitations

Q9. State the Advantages and Limitations of budgetary control system.

Ans : (Imp.)

Advantages

The budgetary control system helps in fixing the goals for the organisation as a whole and concerted efforts are made for its achievements. It enables economies in the enterprise. Some of the advantages of budgetary control are :

1. Maximisation of Profit

The budgetary control aims at the maximisation of profits of the enterprise. To achieve this aim, a proper planning and co-ordination of different functions is undertaken. There is a proper control over various capital and revenue expenditures. The resources are put to the best possible use.

2. Co-ordination

The working of different departments and sectors is properly co-ordinated. The budgets of different departments have a bearing on one another. The co-ordination of various executives and subordinates is necessary for achieving budgeted targets.

3. Specific Aims

The plans, policies and goals are decided by the top management. All efforts are put together to reach the common goal of the organisation. Every department is given a target to be achieved. The efforts are directed towards achieving some specific aims. If there

is no definite aim then the efforts will be wasted in pursuing different aims.

4. Tool for Measuring Performance

By providing targets to various department, budgetary control provides a tool for measuring managerial performance. The budgeted targets are compared to actual results and deviations are determined. The performance of each department is reported to the top management. This system enables the introduction of management by exception.

5. Economy

The planning of expenditure will be systematic and there will be economy in spending. The finances will be put to optimum use. The benefits derived for the concern will ultimately extend to industry and then to national economy. The national resources will be used economically and wastage will be eliminated.

6. Determining Weaknesses

The deviations in budgeted and actual performance will enable the determination of weak spots. Efforts are concentrated on those aspects where performance is less than the stipulated.

7. Corrective Action

The management will be able to take corrective measures whenever there is a discrepancy in performance. The deviations will be regularly reported so that necessary action is taken at the earliest. In the absence of a budgetary control system the deviations can be determined only at the end of the financial period.

8. Consciousness

It creates budget consciousness among the employees. By fixing targets for the employees, they are made conscious of their responsibility. Everybody knows what he is expected to do and he continues with his work uninterrupted.

9. Reduces Costs

In the present day competitive world budgetary control has a significant role to play. Every businessman tries to reduce the cost of production for increasing sales. He tries to have those combinations of products where profitability is more.

10. Introduction of Incentive Schemes

Budgetary control system also enables the introduction of incentive schemes of remuneration. The comparison of budgeted and actual performance will enable the use of such schemes.

Limitations

Despite many good points of budgetary control there are some limitations of this system. Some of the limitations are discussed as follows :

1. Uncertain Future

The budgets are prepared for the future period. Despite best estimates made for the future, the predictions may not always come true. The future is always uncertain and the situation which is presumed to prevail in future may change. The change in future conditions upsets the budgets which have to be prepared on the basis of certain assumptions. The future uncertainties reduce the utility of budgetary control system.

2. Budgetary Revisions Required

Budgets are prepared on the assumptions that certain conditions will prevail. Because of future uncertainties, assumed conditions may not prevail necessitating the revision of budgetary targets. The frequent revision of targets will reduce the value of budgets and revisions involve huge expenditures too.

3. Discourages Efficient Persons

Under budgetary control system the targets are given to every person in the organisation. The common tendency of people is to achieve the targets only. There may be some efficient persons who can exceed the targets but they will also feel contented by reaching the targets. So budgets may serve as constraints on managerial initiatives.

4. Problem of Co-ordination

The success of budgetary control depends upon the co-ordination among different departments. The performance of one department affects the results of other departments. To overcome the problem of co-ordination a Budgetary Officer is needed. Every concern cannot afford to appoint a Budgetary Officer. The lack of co-ordination among different departments results in poor performance.

5. Conflict among Different Departments

Budgetary control may lead to conflicts among functional departments. Every departmental head worries for his department goals without thinking of business goal. Every department tries to get maximum allocations of funds and this raises a conflict among different departments.

6. Depends upon Support of Top Management

Budgetary control system depends upon the support of top management. The management should be enthusiastic for the success of this system and should give full support for it. If at any time there is a lack of support from top management then this system will collapse.

2.3 CLASSIFICATION OF BUDGETS

Q10. Explain in detail the classification of budgets according to :

- (a) Time
- (b) Functions
- (c) Flexibility

(OR)

Describe the various types of budgets.

Ans :

The budgets are usually classified according to their nature. The following are the types of budgets which are commonly used.

(A) Classification According to Time

1. Long-term budgets.
2. Short-term budgets.
3. Current budgets.

(B) Classification on the Basis of Functions

1. Operating Budgets
2. Financial Budgets
3. Master Budget

(C) Classification on the Basis of Flexibility

1. Fixed budget.
2. Flexible budget

(A) Classification According to Time**1. Long Term Budgets**

The budgets are prepared to depict long term planning of the business. The period of long term budgets varies between five to ten years. The long term planning is done by the top level management; it is not generally known to lower levels of management. Long time budgets are prepared for some sectors of the concern such as capital expenditure, research and development, long term finances, etc. These budgets are useful for those industries where gestation period is long *i.e.*, machinery, electricity, engineering, etc.

2. Short-term Budgets

These budgets are generally for one or two years and are in the form of monetary terms. The consumers goods industries like sugar, cotton, textile, etc. use short-term budgets.

3. Current Budgets

The period of current budgets is generally of months and weeks. These budgets relate to the current activities of the business. According to I.C.W.A. London, "Current budget is a budget which is established for use over a short period of time and is related to current conditions."

(B) Classification on the Basis of Functions**1. Operating Budgets**

These budgets relate to the different activities or operations of a firm. The number of such budgets depends upon the size and nature of business. The commonly used operating budgets are :

- (a) Sales Budget
- (b) Production Budget
- (c) Production Cost Budget
- (d) Purchase Budget
- (e) Raw Material Budget
- (f) Labour Budget
- (g) Plant Utilization Budget
- (h) Manufacturing Expenses or Works Overhead Budget
- (i) Administrative and Selling Expenses, Budget, etc.

The operating budget for a firm may be constructed in terms of programmes or responsibility areas, and hence may consist of :

- (i) Programme Budget, and
- (ii) Responsibility Budget.

(i) Programme Budget: It consists of expected revenues and costs of various products or projects that are termed as the major programmes of the firm. Such a budget can be prepared for each product line project showing revenues, costs and the relative profitability of the various programmes. Programme are, thus, useful in locating areas where efforts may be required to reduce costs and increase revenues. They are also useful in determining imbalances and inadequacies in programmes so that corrective action may be taken in future.

(ii) Responsibility Budget: When the operating budget of a firm is constructed in terms of responsibility areas it is called the responsibility budget. Such a budget

shows the plan in terms of persons responsible for achieving them. It is used by the management as a control device to evaluate the performance of executives who are incharge of various cost centres. Their performance is compared to the targets (budgets), set for them and proper action is taken for adverse results, if any. The kinds of responsibility areas depend upon the size and nature of business activities and the organizational structure. However, responsibility areas may be classified under three broad categories ;

- (a) Cost/Expense Centre
- (b) Profit Centre
- (c) Investment Centre.

We have discussed the concept and technique of responsibility budgeting in detail under a separate chapter on 'Responsibility Accounting' latter in this book.

2. Financial Budgets

Financial budgets are concerned with cash receipts and disbursements, working capital, capital expenditure, financial position and results of business operations. The commonly used financial budgets are :

- (a) Cash Budget
- (b) Working Capital Budget
- (c) Capital Expenditure Budget
- (d) Income Statement Budget
- (e) Statement of Retained Earnings Budget
- (f) Budgeted Balance Sheet or Position Statement Budget.

3. Master Budget

Various functional budgets are integrated into master budget. This budget is prepared by the ultimate integration of separate functional budgets. According to I.C.W.A. London, "The

Master Budget is the summary budget incorporating its functional budgets". Master budget is prepared by the budget officer and it remains with the top level management. This budget is used to co-ordinate the activities of various functional departments and also to help as a control device.

(C) Classification on the Basis of Flexibility

1. Fixed Budget

The fixed budgets are prepared for a given level of activity, the budget is prepared before the beginning of the financial year. If the financial year starts in January then the budget will be prepared a month or two earlier, *i.e.*, November or December. The changes in expenditure arising out of the anticipated changes will not be adjusted in the budget. There is a difference of about twelve months in the budgeted and actual figures. According to I.C.W.A. London, "Fixed budget is a budget which is designed to remain unchanged irrespective of the level of activity actually attained." Fixed budgets are suitable under static conditions. If sales, expenses and costs can be forecasted with greater accuracy then this budget can be advantageously used.

2. Flexible Budgets

A flexible budget consists of a series of budgets for different level of activity. It , therefore, varies with the level of activity attained. A flexible budget is prepared after taking into consideration unforeseen changes in the conditions of the business. A flexible budget is defined as a budget which by recognising the difference between fixed, semi-fixed and variable cost is designed to change in relation to the level of activity.

The flexible budgets will be useful where level of activity changes from time to time. When the forecasting of demand is uncertain and the undertaking operates under conditions of shortage of materials, labour etc., then this budget will be more suited?"

2.3.1 Preparation of Fixed and Flexible Budgets

Q11. Define Fixed Budget. State the conditions of fixed budget.

Ans :

According to CIMA, "a fixed budget, is a budget designed to remain unchanged irrespective of the level of activity actually attained".

A fixed budget shows the expected results of a responsibility center for only one activity level.

Once the budget has been determined, it is not changed, even if the activity changes. Fixed budgeting is used by many service companies and for some administrative functions of manufacturing companies, such as purchasing, engineering, and accounting. Fixed Budget is used as an effective tool of cost control. In case, the level of activity attained is different from the level of activity for budgeting purposes, the fixed budget becomes ineffective. Such a budget is quite suitable for fixed expenses. It is also known as a static budget.

Essential Conditions

1. When the nature of business is not seasonal.
2. There is no impact of external factors on the business activities.
3. The demand of the product is certain and stable.
4. Supply orders are issued regularly.
5. The market of the product should be domestic rather than foreign.
6. There is no need of special labour or material in the production of the products.
7. Supply of production inputs is regular.
8. There is a trend of price stability.

Generally, all above conditions are not found in practice. Hence Fixed budget is not important in business concerns.

Merits

1. Very simple to understand
2. Less time consuming

Demerits

1. It is misleading. A poor performance may remain undetected and a good performance may go unrealized.
2. It is not suitable for long period.
3. It is also found unsuitable particularly when the business conditions are changing constantly.
4. Accurate estimates are not possible.

Q12. Define flexible budget. State the uses of flexible budget.

Ans :

Definition

According to CIMA, "a flexible budget is defined as a budget which, by recognizing the difference between fixed, semi-variable and variable costs is designed to change in relation to the level of activity attained." Unlike static(fixed) budgets, flexible budgets show the expected results of a responsibility center for different activity levels.

The budgets are especially useful in estimating and controlling factory costs and operating expenses. It is more realistic and practicable because it gives due consideration to cost behaviour at different levels of activity. While preparing a flexible budget the expenses are classified into three categories viz.

- (i) Fixed,
- (ii) Variable, and
- (iii) Semi-variable.

Semi-variable expenses are further segregated into fixed and variable expenses.

Flexible budgeting may be resorted to under the following situations:

- (i) In the case of new business venture due to its typical nature it may be difficult to forecast the demand of a product accurately.
- (ii) Where the business is dependent upon the mercy of nature e.g., a person dealing in wool trade may have enough market if temperature goes below the freezing point.
- (iii) In the case of labour intensive industry where the production of the concern is dependent upon the availability of labour.

Merits

1. With the help of flexible budget, the sales, costs and profit may be calculated easily by the business at various levels of production capacity.
2. In flexible budget, adjustment is very simple according to change in business conditions.
3. It also helps in determination of production level as it shows budgeted costs with classification at various levels of activity along with sales. Hence the management can easily select the level of production which shows the profit predetermined by the owners of the business.
4. It also shows the quantity of product to be produced to earn determined profit.

Demerits

1. The formulation of flexible budget is possible only when there is proper accounting system maintained, perfect knowledge about the factors of production and various business circumstances is available.
2. Flexible Budget also requires the system of standard costing in business.
3. It is very expensive and labour oriented.

Suitability

1. Seasonal fluctuations in sales and/or production, for example in soft drinks industry;
2. A company which keeps on introducing new products or makes changes in the design of its products frequently;
3. Industries engaged in make-to-order business like ship building;
4. An industry which is influenced by changes in fashion; and
5. General changes in sales.

Q13. Compare and contrast fixed budget and flexible budget.*Ans :*

S.No.	Fixed Budget	S.No.	Flexible Budget
1.	It does not change with actual volume of activity achieved. Thus it is known as rigid or inflexible budget.	1.	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
2.	It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	2.	It consists of various budgets for different levels of activity.
3.	Here as all costs like-fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.	3.	Here analysis of variance provides useful information as each cost is analyzed according to its behaviour.
4.	If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture.	4.	Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations.
5.	Comparison of actual performance with budgeted targets will be meaningless specially when there is a difference between the two activity levels.	5.	It provides a meaningful basis of comparison of the actual performance with the budgeted.

PROBLEMS

1. The expenses for the production of 5,000 units in a factory are given as follows :

Particulars	Per Unit Rs.
Materials	50
Labour	20
Variable Overheads	15
Fixed Overheads (₹ 50,000)	10
Administrative expenses (5% variable)	10
Selling expenses (20% Fixed)	6
Distribution expenses (10% Fixed)	5
Total cost of sales per unit	<u>116</u>

You are required to prepare a budget for the production of 7,000 units.

Sol :

Flexible budget

Particulars	5000 units		7000 units	
	Per unit	Total	Per unit	Total
Material labour	50	2,50,000	50	3,50,000
Labour	20	1,00,000	20	1,40,000
Prime cost	70	3,50,000	70	4,90,000
Factory overheads				
Variable	15	75,000	15	1,05,000
Fixed (50,000)	10	50,000	7.14	50,000
Factor cost	95	4,75,000	92.14	6,45,000
Administrative expenses				
Variable 5% of 10	0.5	2,500	0.5	3,500
Fixed 95% of 10	9.5	47,500	6.78	47,500
Cost of production	105	5,25,000	99.42	6,96,000
Selling expenses:				
Fixed 20% of 6	1.2	6,000	0.85	6,000
Variable 80% of 6	4.8	24,000	4.8	33,000
Distribution overhead				
Fixed 10% of 5	0.5	2,500	0.36	2,500
Variable 90% of 5	4.5	22,500	4.5	31,500
Total cost of sales	116	5,80,000	109.93	7,69,000

2. The following information at 50% capacity is given. Prepare a flexible budget and forecast the profit or loss at 60%, 70% and 90% capacity.

Particulars	Expenses at 50% capacity
Fixed Expenses :	
Salaries	50,000
Rent and Taxes	40,000
Depreciation	60,000
Administrative Expenses	70,000
Variable Expenses :	
Materials	2,00,000
Labour	2,50,000
Others	40,000
Semi-Variable Expenses :	
Repairs	1,00,000
Indirect Labour	1,50,000
Others	90,000

It is estimated that fixed expenses will remain constant at all capacities. Semi-Variable expenses will not change between 45% and 60% capacity, will rise by 10% between 60% and 75% capacity, a further increase of 5% when capacity crosses 75%.

Estimated sales at various levels of capacity are :

Capacity	Sales (₹)
60%	11,00,000
70%	13,00,000
90%	15,00,000

Sol :

Flexible Budget (Showing Profit and Loss at Various Capacities)

Particulars	Capacities			
	50%	60%	70%	90%
Fixed Expenses				
Salaries	50,000	50,000	50,000	50,000
Rent & Taxes	40,000	40,000	40,000	40,000
Depreciation	60,000	60,000	60,000	60,000
Administrative Expenses	70,000	70,000	70,000	70,000
Variable Expenses				
Materials	2,00,000	2,40,000	2,80,000	3,60,000
Labour	2,50,000	3,00,000	3,50,000	4,50,000
Others	40,000	48,000	56,000	72,000
Semi-Variable Expenses				
Repairs	1,00,000	1,00,000	1,00,000	1,15,000
Indirect labour	1,50,000	1,50,000	1,65,000	1,72,500
Others	90,000	90,000	99,000	1,03,500
Total Cost	10,50,000	11,48,000	12,80,000	14,93,000
Profit (+) or Loss (-)		- 48,000	+ 20,000	+ 7,000
Estimated Sales		11,00,000	13,00,000	15,00,000

3. Excellent Engineering works had prepared its budget for 2018, based on the production of one lakh units of their only product as follows :

Particulars	(Rs. in '000's)
a) Raw Materials	252
b) Direct Labour	75
c) Direct Expenses	10
d) Works Overhead (60% Fixed)	225
e) Administration Overheads	40
f) Selling Overheads (50% Fixed)	20

For want of demand, the actual production for that period was only 60,000 units. Calculate the budgeted cost per unit under both the original plan and under actual performance.

Sol :

(Oct.-19, Imp.)

Flexible Budget

Particulars	1,00,000 units		60,000 units	
	Per unit	Rs	Per unit	Rs
Raw materials	252.00	2,52,00,000	252.00	1,51,20,000
Direct Labour	75.00	75,00,000	75.00	45,00,000
Direct Expenses	10.00	10,00,000	10.00	6,00,000
Prime cost	337.00	3,37,00,000	337.00	2,02,20,000
(+) Works an cost				
(a) 60% fixed	135.00	1,35,00,000	225.00	1,35,00,000
(b) 40% variable	90.00	90,00,000	90.00	54,00,000
Total Works cost	562.00	5,62,00,000	652.00	3,91,20,000
(+) Office an cost				
(a) 100% Fixed	40.00	40,00,000	66.67	40,00,000
Total Cost of production	602.00	6,02,00,000	718.67	4,31,20,000
(+) Selling overheads				
(a) 50% Fixed	10.00	10,00,000	16.67	10,00,000
(b) 50% variable	10.00	10,00,000	10.00	6,00,000
Total Cost	622.00	6,22,00,000	745.34	4,47,20,000

4. A factory is currently working at 50% capacity and produces 10000 units. Estimate the profits or the company when it works at 60% and 80% capacity.

At 60% working raw material cost increases by 2% and selling price falls by 2%. At the 80% working, raw material cost increases by 5% and selling price falls by 5%.

At 50% capacity working the product costs ₹ 180 per unit and is sold at ₹ 200 per unit.

The unit cost of ₹ 1.80 is made up as follows:

Particulars	₹
Material	100
Labour	30
Factory Overhead	30 (40% Fixed)
Administrative Overhead	20(50% Fixed)

Sol.:

(Oct.-20, Imp.)

Flexible Budget

Particulars	50%(10000 units)		60%(12000 units)		80%(16000 units)	
	Per Unit	Amount	Per Unit	Amount	Per Unit	Amount
Material	100	10,00,000	102	12,24,00	105	16,80,000
Labour	30	3,00,000	30	3,60,000	30	4,80,000
Factory Overhead:						
Fixed 40%	12	1,20,000	10	1,20,000	7.50	12,0000
Variable 60%	18	1,80,000	18	2,16,000	18	2,88,000
Administrative Overhead:						
Fixed 50%	10	1,00,000	8.33	1,00,000	6.25	1,00,000
Variable 50%	10	1,00,000	10	1,20,000	10	1,60,000
Total cost	180	18,00,000	178.33	2,140,000	176.75	28,28,000
Profits	20	2,00,000	17.67	2,12,000	13.25	2,12,000
Sales	200	20,00,000	196	23,52,000	190	30,40,000

2.4 STANDARD COSTING

2.4.1 Meaning

Q14. Define the following terms :

- (a) Standard Cost
- (b) Standard Costing
- (c) Historical Costing

Ans :

(Oct.-20, Oct.-19)

Meaning

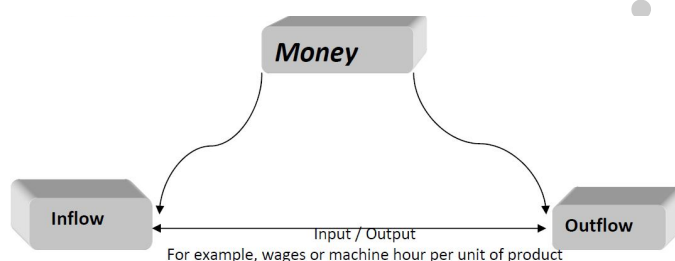
The word standard means a 'norm' or a 'criterion'. Standard cost is thus a criterion cost which may be used as a yardstick to measure the efficiency with which actual cost has been incurred.

There is a constant process of development effected in business through the help of standard costing method since the standard costs set in are sensible, capable of being attained and are revised from time to time in accord with needs and requirements of the business enterprise.

(a) Standard cost

Standard cost is a figure which represents an amount that can be taken as a typical of the cost of an article or other cost factor. It is established on the basis of planned operations, planned cost efficiency levels, and expected capacity utilization.

Standard cost is a predetermined calculation of the presumed cost under the specified conditions. It is built up from an assessment of the value of cost elements. It correlates technical specification of material, labour and other cost to the price or wage rate which have occurred during the period in which the standard cost is to be determined.

**Definitions**

- (i) **According to C.I.M.A. London**, The standard cost is a predetermined cost which is calculated from management standard of efficient operation and relevant necessary expenditure.
- (ii) **According to Brown and Howard**, The standard cost is a predetermined cost which determines what each product or service should cost under given circumstances

(b) Standard Costing**Definitions**

- (i) **According to W.B. Lawrence**, A standard costing system is a method of cost accounting in which standard costs are used in recording certain transaction and the actual costs are compared with the standard cost to learn the amount and reason for variations from the standard.
- (ii) **According to D. Joseph**, Standard costing involves the preparation of cost based on pre-determined standards and continuous comparison of actual with them for the purpose of guidance and control.

(c) Historical Costing

The term 'Historical Cost' is also known as Actual Cost. The meaning of this cost suggests the actual costs of products which have been incurred in their production.

The experts maintain that, the production of products, the expenses like material, labour, overheads etc. should be paid first and then they should be recorded in books. So these total expenses are called historical costs or past costs.

The figures relating to costs obtained at the end of the production process may have some definite value in rectifying past practices if they are properly analyzed.

Q15. What are the objectives of standard costing?

Ans :

Objectives

1. To institute a control mechanism on all the elements of costs that affect production and sales
 2. To measure different operational efficiencies and check the wastages
 3. To improve the delegation of authority and generate a sense of responsibility among the employees
 4. To develop a cost consciousness in the employees
 5. To presume the production costs, sales and profit
 6. To avail the benefits of 'Management by exception.'
 7. To bring about a vivid progressive vision and sagacious decision making at each managerial level.
-

2.4.2 Importance

Q16. Explain the importance of standard costing?

Ans :

Specific uses of standard costing in connection with different activities of organization are summarized below,

1. Accounting Department

- (i) Planning and budgeting
- (ii) Valuation of inventories
- (iii) Cost control
- (iv) Pricing, sales and cost estimates
- (v) Developing monthly operating results.

2. Production Department

- (i) Production planning
- (ii) Matching scheduled production with machine capacity and
- (iii) Preparing reports of business logs in terms of time.

3. Sales Department

- (i) Determining and checking selling prices.
 - (ii) Preparing quotation on special products and
 - (iii) Determining the profitability of specific product lines.
-

Q17. What are the advantages and limitations of standard costing?

(OR)

List out the advantages of standard costing.

Ans :

(Oct.-20, Imp.)

Advantages

1. **Proper Planning:** It helps to apply the principle of "Management by exception". That is, the management need not worry over those activities which proceed in tandem plans. It is only on the issues of exceptions that they have to concentrate.

2. **Efficient Cost Control:** Standard Costing is a tool for the management to gain reduction in the cost and control over it. Under this technique, differences are analyzed and responsibilities are determined.
3. **Motivational Factor:** Labour efficiency is promoted and they are destined to be cost conscious. Standards provide incentives and motivation to work with greater effort. This increases efficiency and productivity.
4. **Comparison of Forecasting and Outcome:** A target of efficiency is set for the employees and the cost consciousness is stimulated. Since the process of standard costing allow an appraisal to be made of personnel, machines and method of working, current inefficiencies come to the notice and get eliminated.
5. **Inventory Control:** Standard costing facilitates inventory control and simplifies inventory valuations. This ensures uniform pricing of stocks in the form of raw materials, work-in-progress and finished goods.
6. **Economical System:** Standard costing system is economical system from the viewpoint that it does not require detailed records. It also does not require a big staff. It results in the reduction in paper work in accounting and needs very few records. Thus, there is saving of time as well as money.
7. **Helpful in Budgeting:** Budgets are prepared on the basis of standard costing. Standards which are set up in respect of materials, labour and overheads, are helpful in preparing various budgets. For example, flexible budget, sales budget, etc.
8. **Helps Formulate Policies:** This technique is a valuable aid to the management in determining prices and formulating production policies. Standard costing equips cost estimates while planning the production of new products.
9. **Helps Distinguish Activities:** Standard costing helps in distinguishing between skilled and unskilled activities. So the skilled worker only gives pays attention to improving the activities of the unskilled workers.
10. **Eliminates Wastage:** Through fixing standard, certain waste such as material wastage, idle time, lost machine hours, etc. are reduced.

Limitations

1. **Costly System:** Because the Standard Costing requires highly skillful and competent personnel, it becomes a costly system too. For the same experts are paid high remuneration.
2. **Difficulties in Fixation of Standard:** It is always difficult to determine precise standard costs in a given situation which will coincide with actual cost when operations are over. Standard cost are determined partly by the past experience and partly by the cost projections based on advanced statistical techniques. Thus, uncertainties revolve around standards.
3. **Constraint for Service Industry:** Standard costing is applied for planning and controlling manufacturing costs. Thus, it cannot be applied in a service industry.
4. **Consistency of Standard:** because the standards of marginal costing fluctuate and vary time to time, it is difficult to always sustain and continue the same standards.
5. **Unsuitable for Non-standardized Products:** Standard costing is expensive and unsuitable for job manufacturing industries as they manufacture non standardized products such as catering, tailoring, printing, etc.
6. **Relatively Fixed Standards:** A business may not be able to keep standards up-to-date. In other words, a business may not revise standards to keep pace with the frequent changes in manufacturing conditions. Firms may avoid revising standards as it is a costly affair.

7. **Difficulties for Small Industries:** Establishment of standards and their implementation involve initial high costs. Standards have to be revised and new standards be fixed involving larger costs. Thus, small firms find it expensive to operate standard costing system. This system is not fit for each type of industries.
8. **Discouragement for Workers:** Sometimes the employees and workers are discouraged when the standards are fixed at a high level. The unreal high standards may adverse by effect the morale of workers rather than working as an incentive for better efficiency.
9. **Inaccurate Diverse Results:** Inaccurate and unreliable standards cause misleading results and thus may not enjoy the confidence of the users of this system.

2.4.3 Standard Costing and Historical Costing

Q18. Compare and contrast Historical Cost and Standard Cost.

Ans :

(Oct.-20, Imp.)

S.No.	Historical Cost	Standard Cost
1.	Historical costs are the actual cost	Standard costs are the pre-determined cost.
2.	It only informs the total cost of a Product or service	Its function is to evaluate managerial performance and deficiency
3.	Historical costs are ascertained after they have been incurred, and therefore are experienced costs of decisions previously made	Standard costs are anticipated costs which tend to state what the cost of production should be
4.	It is related to past	It is related to future
5.	It cannot do the role of Planning and Budgeting	Budgets are prepared on the basis of Standard costs

2.4.4 Steps Involved in Standard Costing

Q19. Explain the Steps Involved in Standard Costing.

Ans :

The following four points are usually considered for setting up a standard cost system in a business:

1. Setting up cost center
2. Classification of Accounts
3. Types of Standards
4. Settings the Standards.

1. Setting up Cost Center

Introducing Standard Cost System is requires first of all to establish cost centers with their well-designed ambit of work. In the process there should be no ambiguity about the responsibility of each cost center so that their responsibility may be identified.

A cost center is a location; people or item of equipments for cost may be ascertained and used for the purpose of cost control.

- I.C.M.A. London

2. Classification of Accounts

Accounts are classified in order to assist collection and analysis. To use the system of standard costing effectively, all accounts have to be classified on the basis of their functions, items of revenue nature, assets and liabilities, etc. Codes are given for each item and each account along with elements of cost with this end in view, codes may be used. A code is a symbolic representation of any particular item of information.

For example,

Direct Material	01-19
Direct Labour	20-29
Direct Expense	30-39
Indirect Expense	40-49
Indirect Labour	50-59
Indirect Expense	60-69

3. Types of Standards

Basically, there are two types of standard:

- (a) Current Standard
- (b) Basic Standard

(a) Current Standard:

It is established for the use over a diminutive period of time and is related to current circumstances. Such a standard remains in operation for a limited period and belongs to the current conditions. These standards are revised at regular intervals. Current standard are of three types like

- i) Ideal standards,
- ii) Expected standards, and
- iii) Normal standards.

(i) Ideal standards: This is a hypothetical standard which is rather not practicable to attain. This ideal is clearly unrealistic and unattainable. It pre-supposes that the performance of men, materials and machines is perfect and thus makes no allowance for the loss of time, accident, wastage of materials and any other type of waste of materials and any other type of waste or loss. Such standards have the advantage of establishing a goal which, however, is not always attainable in practice. As such it is having a little practical value.

The standard which can be attained under the most favourable condition possible.

(ii) Expected (or) Practical standards: Such standards are likely to be expected or utilized in the future period. Such standards are based on expected performance after making a reasonable allowance for unavoidable losses and other inevitable lapses from perfect efficiency. So it is most generally used standard and is best suited for cost control.

This standard can be anticipated as well as attained in future in sync with the specified budget.

- I.C.M.A.

(iii) Normal standards: It is also known as 'Past Performance Standard' because it is based on the average performance in the past. It should be attainable and it provides a challenge to the staff. The aim of such a standard is to eliminate the variations in the cost which arise out of trade cycle.

The average standard can be anticipated as well as attained in a future period of time. Preferably, it should be long enough to cover one trade-cycle.

- I.C.M.A.

(b) Basic standards

This is a standard which is established for use unaltered for an indefinite time. It is similar to an index number against which all results are measured. Variances from basic standards show trends of deviations of the actual cost. However, basic standards are of no practical utility from the point of view of cost control and cost ascertainment. This standard is set on a long-term basis and seldom revised.

It is an underlying standard from which current standard can be developed.

- I.C.M.A.

4. Setting the Standard

The process of setting standard is a valuable activity in itself. The success of standard costing system depends on the reliability, accuracy and acceptance of the standards. If standards have been properly set and maintained, they are a sound basis for determining cost for various purposes. While setting the standards, the following points should be taken into consideration: duration of use of standard, reasonable standard of performance, level of activity. For the given units standard sets for the following items are (i) direct material cost, (ii) direct wage cost, (iii) direct expense, (iv) factory variable overhead cost, (v) selling and distribution variable cost, (vi) selling price and sales margin.

➤ **Standards for Material:** It includes

- (i) Determination of standard quantity of material required, and
- (ii) Determination of standard price per unit of material.

➤ **Material Quantities:** After establishing the standard quality of material, it is more important and necessary to establish the standard regarding quantity of each material. Generally, quantities are expressed in terms of kilograms, feet, units and so forth.

➤ **Standards for Labour:** This standard is determined with regard to the current rate of pay and any anticipated variations. It should be fixed for each grade of labour and for each operation involved. The standard hours are fixed for all categories of labour i.e., for skilled and unskilled labour. In these standards, number of hours and workers are established.

➤ **Material Prices:** This is a forecast of the average prices of material during the future period. This standard is quite difficult to establish because prices are regulated more by the external factors than by the company management. While setting standard prices, the past experiences, existing prices and anticipations should be closely examined. Price of material in the past, current prices and fluctuating trends are the base for determining standard of price.

➤ **Setting for Overheads:** Setting standard for overheads is more complex than the development of material and labour standards. It is estimated for variable overheads and fixed overheads.

➤ **Variable Overheads:** It may be recalled that variable overhead has been defined as a cost which tends to vary directly with the volume of output. It is assumed that the overhead rate per unit is

invariable, irrespective of the quantity produced, so it is necessary to calculate only a standard cost per unit or per hour.

- **Fixed Overheads:** Fixed overhead tends to be unaffected by variations in the volume of output. Therefore it is required to determine total fixed overhead for the period and budgeted production in units.
- **Standard Hour:** Production is usually articulated in physical units such as tons, pounds, gallons, numbers, kilograms, liters, etc. When a company is manufacturing different types of products, it is almost impossible to increase the production, which cannot be expressed in the same unit.

Standard hour means a hypothetical hour, which represents the amount of work that should be performed in one hour under standard conditions.

- I.C.M.A.

2.5 VARIANCE ANALYSIS

Q20. Explain the meaning of Variance Analysis and describe its significant.

Ans :

Meaning

Variance means the deviation of the actual cost or actual sales from the standard cost or profit or sales. Calculation of variances is the main object of standard costing. This calculation shows that whether costs are under controlled or not. A variance may be favourable or adverse.

Definition

The process of computing the amount of variance and isolate the causes of variances between actual and standard.

- C.I.M.A. London

When actual cost is less than standard cost or profit is better than the standard profit, it is known as 'Favourable Variance'. On the other hand, where the actual cost is more than standard cost or profit is better than the standard profit, it is known as 'Unfavourable Variance' or 'Adverse'. A mere knowledge of the variances is not sufficient and useful to the management; the causes responsible for these variances should also be brought to the knowledge of the management of the business. The process of finding out the causes of the variances and evaluating their effect is regarded as 'Analysis of Variance.'

A controllable variance is when a variance is treated as the responsibility of a person with the result that his or her degree of efficiency can be reflected in size. When a variance arises due to some unforeseen factors, it is known as uncontrollable variance. The management should look more carefully at controllable variance, for it is these variances that require examination and possible corrective measures. The uncontrollable variances may be ignored.

Importance

There is a lot importance of analysis of variance. There are many objects fulfilled with their analysis. Without analysis of variance, there is no use of standard costing. The important points of variances are as under:

1. Check and control of wastage is possible.
2. It improves the efficiency of the organization by the use of standard costing.
3. It exercises control over all cost centers including department, individuals and so on.

4. Responsibility of a particular person or department can be fixed.
5. In the prediction of production cost, sales and profit, variance analysis is very useful.
6. On the basis of variance analysis, delegation of authority could be made effective.
7. Variance analysis is easy to introduce, apply and orient result.
8. Various operational efficiencies can be measured.

Q21. State the features of variance analysis.

Ans :

1. **In terms of money:** For post office, all the variance are calculated and expressed in terms of money. They are always monetary values in as much as the physical variations are the concern of industrial engineers.
2. **Standard item:** The minuend should always be the standard item and the subtrahend the actual figure. The remainder between the minuend and the subtrahend is multiplied by the standard index. In fact, minuend is the figure from which something is subtracted and subtrahend is that something which is subtracted from the minuend. In other words if the performance has, on the whole, been costlier, it is unfavourable variance and when it is cheaper than it was envisaged, it is favourable.
3. **Budgeted figure - the Minuend:** Where the prefix 'budget' is used before the variance, the minuend is the budgeted figure based on the normal production. The fixed overhead budget variance is the difference between the budgeted fixed overhead and the actual overhead.

2.5.1 Classification of Variance**Q22. Explain different types of variances.**

Ans :

Variances are classified on the basis of:

1. On the basis of control
2. On the basis of profitability
3. On the basis of elements of cost
 - (i) **On the basis of control:** On the basis of control, variance may be classified as controllable variance and uncontrollable variance.
 - (ii) **On the basis of profitability:** With regard to the profitability or effect, variance may be classified into two: (a) favourable variance and (b) unfavourable variance.

These are also known as credit and debit variance or negative and positive variances.
 - (iii) **On the basis of elements of cost:** Though different types of variances can be calculated, their use may not be much useful. Variance calculated on the basis of different elements of cost. They are as follows:

Total Cost Variance is a difference between the standard cost value of the output achieved in a period and the total cost incurred.

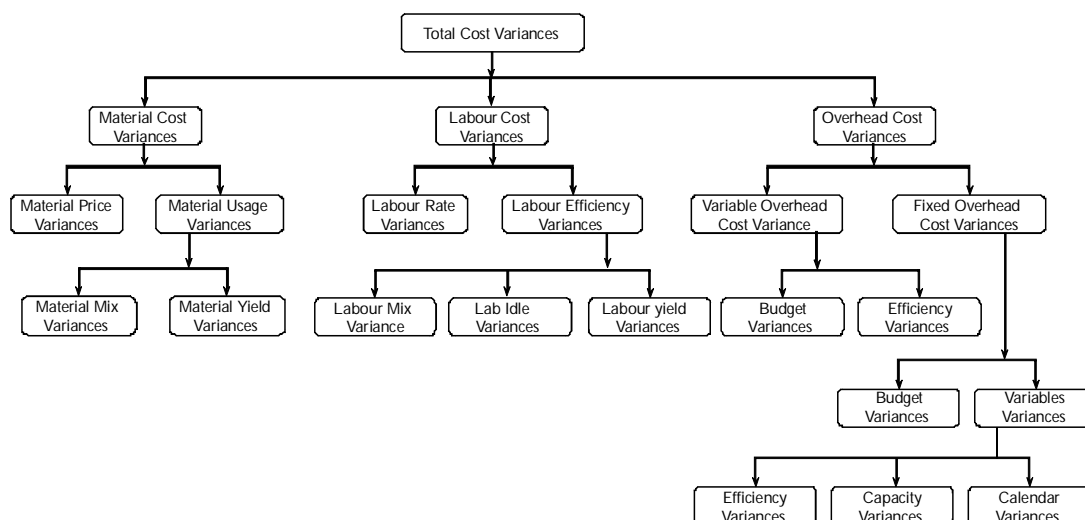


Fig. : Classification of Variances

2.5.1.1 Material Variance

Q23. What is meant by Material Variance? Explain different types of Material Variances.

Ans :

Material Variance is also known as material cost variance. It is the differences between standard variance and actual variance.

Types

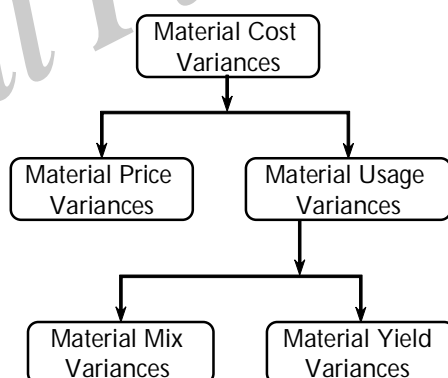


Fig.: Types of Material cost variances

Material Variances (MV)

These variances include Material Cost Variances, Material Price Variances, Material Usage Variances, Material Mix Variances and Material Yield Variances.

- 1. Material Cost Variances (MCV):** It is the difference between the standard cost of material specified for the output achieved and the actual cost of direct materials used.

$$\text{MCV} = (\text{Std. Quantity} \times \text{Std. Price}) - (\text{Actual Quantity} \times \text{Actual Price})$$

$$(\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

2. Material Price Variances (MPV)

It is that portion of the material cost variance which is due to the difference between the standard price specified and the actual price paid.

$$\text{MPV} = \text{Actual Quantity (Std. Price - Actual Price)} \\ \text{AQ (SP - AP)}$$

Where, Price = Rate

3. Material Usage Variances (MUV)

Material usage variance is a part of Direct Material Cost Variance. MUV is determined by difference found between the standard quantity and the use of actual quantity. Later, the difference found is multiplied by the standard price.

$$\text{MUV} = \text{Standard Price (Std. Quantity - Actual Quantity)} \\ \text{SP (SQ - AQ)}$$

4. Material Mix Variances (MMV): It is that portion of direct material usage variance which is the difference between the actual quantities of elements used in a mixture at a standard price and the total quantity of elements used at the weighted average price per unit of element as shown by the standard cost sheet.

$$\text{MMV} = \text{Standard Price (Std. Mix - Actual Mix)} \\ \text{SP (SM - AM)}$$

$$\text{SM} = \frac{\text{Total weight of actual quantity}}{\text{Total weight of standard quantity}} \times \text{Std. Quantity}$$

Note: When the actual weight of quantity and the standard weight of quantity differ from each other, this formula is used to find new quantity.

5. Material Yield Variances (MYV): This is "that portion of the direct materials usage variances which is due to the difference between standard yield specified and the actual yield obtained.

$$\text{MYV} = \text{Standard Yield Price (Std. Yield - Actual Yield)} \\ \text{SYP (SY - AY)}$$

$$\text{SYP} = \frac{\text{Total standard Cost}}{\text{Net Standard Output}}$$

Note: When the actual weight of quantity and the standard weight of quantity differ from each other, this formula is used to find new quantity.

Q24. What are the difficulties in setting up standards.

Ans :

Variance analysis is one of the major part or topic of standard costing. The various difficulties or problems which may arise in setting up the standards of variances are as follows,

1. Difficulties arise while estimating prices of materials when seasonal price variations or discount on bulk purchases are important.
2. Difficulties arise while deciding the quality of material to be used.
3. Difficulties arise while deciding as how to incorporate inflation into planned unit costs.

Thus, setting up standards of anances involves number of difficulties and also it is a time consuming process.

PROBLEMS

5. Calculate Material Price Variance of Product 'A' Standard Price (Rs. Per Unit) 5.00; Actual Price (Rs. Per Unit) 6.00; Units Produced 600.

Sol.:

(June-19)

$$\begin{aligned}
 \text{MPV} &= [\text{SP} - \text{AP}] \text{AQ} \\
 &= [5 - 6] \times 600 \\
 &= -1 \times 600 \\
 &= 600 \text{ (Adverse)}
 \end{aligned}$$

6. The Standard and Actual requirement of material A are as under :

Standard : 10,000 units @ Rs. 4.00 per unit

Actual : 13,000 units @ Rs. 3.80 per unit

Calculate the Material Cost Variance.

Sol.:

(October-19)

$$\begin{aligned}
 \text{MCV} &= [\text{SQ} \times \text{SP}] - [\text{AQ} \times \text{AP}] \\
 &= [10,000 \times 4] - [13,000 \times 3.8] \\
 &= 40,000 - 49,400 \\
 \therefore \text{MCV} &= 9400 \text{ (Adverse)}
 \end{aligned}$$

7. The standard Quantity of material specified for the production of 1 unit of finished goods is 3 Kgs. The actual production is 300 units and the actual quantity of material used is 925 Kgs. The standard price is ₹ 2 per Kg.

Find out Material Quantity variance.

Sol.:

(October-20)

Calculation of Material Quantity Variance (MQV)

The Material Quantity Variance (MQV) is also known as Material Usage Variance (MUV) or Material Volume Variance (MVV).

$$\begin{aligned}
 \text{MQV, MUV or MVV} &= \text{Standard price (Standard Quantity - Actual Quantity)} \\
 &= 2(900 - 925) \\
 &= 2(-25) \\
 &= 50 \text{ (Adverse)}.
 \end{aligned}$$

8. From the given data calculate :

(i) Material Price variance (ii) Material Cost Variance (iii) Material Mix variance

Standards :

(i) 250 kg of Raw material is required for producing 175 kgs of finishing products.

(ii) Price of material per kg. Rs. 4

Actuals :

(i) Production Rs. 52,500 kg

(ii) Materials consumed 70,000 kgs

(iii) Cost of materials Rs. 2,73,000

Sol :

(October-19)

Calculation of standard Quantity based an Actual Production

For 175 kgs – 250 kgs

For 52500 kgs – ?

$$\left[\frac{52500 \times 250}{175} \right] = 75000 \text{ kgs}$$

∴ Standard Quantity = 75000 kgs

SQ	SP	Total	AQ	AP	Total
75000	4.00	3,00,000	70,000	3.90	2,73,000

- MPV = [SP – AP] AQ
 = [4 – 3.90] 70000
 = 0.10 × 70,000 = 7000 (F)
- MCV = [SQ × SP] – [AQ × SP]
 = [75,000 × 4] – [70000 × 3.9]
 = 3,00,000 – 2,73,000 = 27000 (F)
- MMV = [RSQ – AQ] SR
 $RSQ = \frac{SQ}{TSQ} \times TAQ = \frac{75000}{75000} \times 70000$
 RSQ = 70000
 MMV = [70000 – 70000] 4 = 0 × 4 = 0

9. The following standard and actual data relate to a manufacturing concern:

Material	SQ Kgs	SP `	AQ Kgs	AP `
X	40	10	42	8
Y	30	08	35	10

Find the Material Cost Variances.*Sol :*

(Oct.-20)

Calculation of Material Cost Variance (MCV) of Material X

Given that,

Standard Quantity (SQ) of 'X' = 40

Standard Price (SP) of 'X' = 10

Actual Quantity (AQ) of 'X' = 42

Actual Price (AP) of 'X' = 8

$$\begin{aligned}\text{MC V} &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\ &= (40 \times 10) - (42 \times 8) \\ &= 400 - 336 \\ &= 64 \text{ (F)}\end{aligned}$$

Calculation of Material Cost Variance (MCV) of Material Y

Given that,

Standard Quantity (SQ) of 'Y' = 30

Standard Price (SP) of 'Y' = 08

Actual Price (AP) of 'Y' = 10

Actual Quantity (AQ) of 'Y' = 35

$$\begin{aligned}\text{MCV} &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\ &= (30 \times 8) - (35 \times 10) \\ &= 240 - 350 \\ &= 110 \text{ (Unfavourable)}\end{aligned}$$

∴ MCV of 'X' = 64

∴ MCV of 'Y' = 110

Total = 46 (Unfavourable)

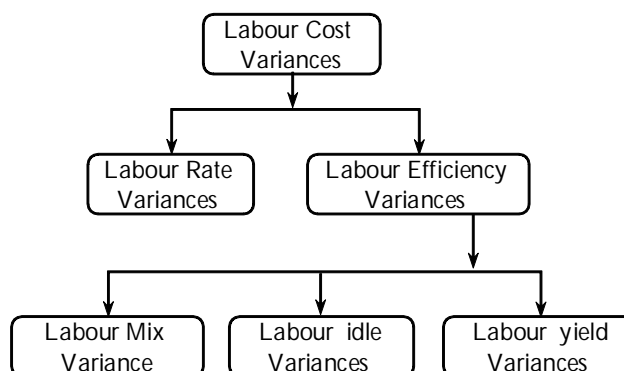
2.5.2 Labour Variance

Q25. What do you understand by labour variances? Explain different types of Labour variances.

Ans :

Meaning

Labour variances occur because of the difference in actual rates and standard rates of labour and the variation in actual time taken by labours and the standard time allotted to them for doing a job. These variances include Labour Cost Variances, Labour Rate Variances, Labour Time or Efficiency Variances, Labour Idle Time Variances, Labour Mix Variances.



1. Labour Cost Variances (LCV):

This is the difference between the standard direct labour cost and the actual direct labour cost incurred for the production achieved.

$$\text{LCV} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

where,

SH = Standard Hours

SR = Standard Rate

AH = Actual Hours

AR = Actual Rate

- (2) Labour Rate Variances (LRV):** This is that portion of the labour cost variance which is due to the difference between the standard rate specified and the actual rate paid.

$$\text{LRV} = \text{AH} (\text{SR} - \text{AR})$$

Note: Actual Time = Actual Hours,

- (3) Labour Time (Efficiency) Variances: (LTV/LEV):** It is defined as the difference between the standard hours (Time) for the actual production achieved and the hours actually worked, valued at the standard labour rate.

$$\text{LTV} = \text{Standard Rate (Std. Time - Actual Time)}$$

$$\text{SR (ST - AT)}$$

- (4) Idle Time Variance (ITV):** ITV comes up because of idle time of workers on account of abnormal causes. The wages paid for the time during which the workers remained idle due to causes like strikes, breakdown on plant, etc. are treated as idle time variances.

$$\text{ITV} = \text{Idle Time} \times \text{Standard Rate}$$

$$\text{IT} \times \text{SR}$$

- (5) Labour Mix Variance / Gang Composition Variance (LMV):** It occurs only when more than one grade of workers is employed and the composition of actual grade of workers differs from those specified.

$$\text{Std. Time} \times (\text{Revised Std. Time} - \text{Actual Time})$$

$$\text{ST} \times (\text{RST} - \text{AT})$$

Where,

$$\text{Revised Standard Time} = \frac{\text{Standard time} \times \text{Total actual time}}{\text{Total standard time}}$$

- (6) Labour yield variance:**

(Actual output–Standard output based on actual hours) × Average Std. labour rate per unit hour

PROBLEMS

10. The details regarding composition and weekly wage rates of labour force engaged on a job scheduled to be completed in 30 weeks are as follows:

Category of workers	Std. No. of Workers	Weekly Wage Rate per Labourer	No. of Workers	Actual Weekly Wage Rate per Labourer
Skilled	75	60	70	70
Semi-Skilled	45	40	30	50
Unskilled	60	30	80	20

The work is actually completed in 32 weeks. Calculate the various labour variances.

Sol :

(June-19)

SH = Std. No. of Workers × Std. Weeks

Skilled = $75 \times 30 = 2,250$

Semi Skilled = $45 \times 30 = 1,350$

Unskilled = $60 \times 30 = 1,800$

AH = Actual No. of Workers × Actual Weeks

Skilled = $70 \times 32 = 2,240$

Semi Skilled = $30 \times 32 = 960$

Unskilled = $80 \times 32 = 2,560$

Workers	SH	SR	Total	AH	AR	Total
Skilled	2,250	60	1,35,000	2,240	70	1,56,800
Semi Skilled	1,350	40	54,000	960	50	48,000
Unskilled	1,800	30	54,000	2,560	20	51,200
	5,400		2,43,000	5,760		2,56,000

- (i) Labour Cost Variable = $[SH \times SR] - [AH \times AR]$

Skilled = $[2,250 \times 60] - [2,240 \times 70]$
 $= 1,35,000 - 1,56,800$ 21,800 (A)

Unskilled = $(1800 \times 30) - (2560 \times 20)$
 $= [54,000] - [51,200]$ 2800 (F)

Semiskilled = $(1350 \times 40) - (960 \times 50)$
 $= [54,000] - [48,000]$ 6,000 (F)
13,000 (A)

- (ii) Labour Rate Variance = $[SR - AR] AH$

Skilled = $[60 - 70] 2,240 = -10 \times 2,240 = 2,240$ (A)

Unskilled = $[40 - 50] 960 = -10 \times 960 = 9,600$ (A)

Semiskilled = $[30 - 20] 2,560 = 10 \times 2,560 = 25,600$ (F)
6,400 (A)

(iii) Labour Efficiency Variance = [SH – AH] SR

$$\text{Skilled} = [2,250 - 2,240] 60 = (10) (60) = 600 \text{ (F)}$$

$$\text{Unskilled} = [1,350 - 960] 40 = (390) 40 = 15,600 \text{ (F)}$$

$$\text{Semiskilled} = [1,800 - 2,560] 30 = (760) (30) = 22,800 \text{ (A)}$$

$$\underline{\underline{6,600 \text{ (A)}}}$$

11. From the data given below, calculate each of the three wage variance for the two departments:

Particulars	Dept. - A	Dept. - B
Actual Gross Wages	Rs. 1,968	Rs. 1,789
Std. Hours produced	8,000	6,000
Std. Rate per hour	0.30 P	0.35 Paise
Actual Hours worked	8,200	5,800

Sol.:

(Oct.-19, Imp.)

Calculation of Actual Rate

$$\text{Department A} = \frac{1968}{8200} = 0.24$$

$$\text{Department B} = \frac{1798}{5800} = 0.31$$

Department	Hours	Standard		Actual		
		Rate	Total	Hours	Rate	Total
A	8000	0.30	2400	8200	0.24	1968
B	6000	0.35	2100	5800	0.31	1798
	14000		4500	14000		3766

(1) Labour cost variance [LCV] = [SH × SR] – [AH × AR]

$$\text{Dept A} = [8000 \times 0.30] - [8200 \times 0.24]$$

$$= 2400 - 1968 \quad 432 \text{ (F)}$$

$$\text{Dept B} = [6000 \times 0.35] - [5800 \times 0.31]$$

$$= 2100 - 1798 \quad 302 \text{ (F)}$$

$$\underline{\underline{734 \text{ (F)}}}$$

(2) Labour Rate Variance [LRV] = [SR – AR] AH

$$\text{Dept A} = [0.30 - 0.24] 8200 = [0.06] [8200] = 492 \text{ (F)}$$

$$\text{Dept B} = [0.35 - 0.31] 5800 = [0.04] (5800) = 232 \text{ (F)}$$

$$\underline{\underline{724 \text{ (F)}}}$$

(3) Labour Efficiency Variance (LEV) [SH – AH] SR

$$\text{Dept A} = [8000 - 8200] 0.30 = [-200] [0.3] = 60 \text{ (A)}$$

$$\text{Dept B} = [6000 - 5800] 0.35 = [200] [0.35] = 70 \text{ (F)}$$

$$\underline{10 \text{ (F)}}$$

12. From the following data, calculate labour variance:

The budgeted labour force for producing product A is :

20 Semi-skilled workers @ 0.75 per hour for 50 hours

10 Skilled workers @ Rs. 1.25 per hour for 50 hours.

The actual labour force employed for producing A is :

22 semi-skilled workers @ 0.80 per hour for 50 hours.

8 skilled workers @ Rs. 1.20 per hour for 50 hours.

Sol :

Working Notes

Workers	Standard Cost			Actual Cost			Standard Cost of Actual Mix Rs.
	Hours	Rate Per unit Rs.	Total Rs.	Hours Rs.	Rate Per unit Rs.	Total Rs.	
Semi-skilled	1,000	0.75	750	1,100	0.80	880	825 (1100×0.75)
Skilled	500	1.25	625	400	1.20	480	500 (400×1.20)
	1,500		1375	1,500		1,360	1,325

(a) Labour Cost Variance

$$(\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

$$\text{Semi-skilled} = (1000 \times 0.75) - (1100 \times 0.80)$$

$$750 - 880$$

$$= 130 = 130 \text{ (A)}$$

$$\text{Semi-skilled} = (500 \times 1.25) - (400 \times 1.20)$$

$$625 - 480 = 145 \text{ (F)}$$

$$\underline{15 \text{ (F)}}$$

(b) Labour Rate Variance

Actual Time (Standard Rate – Actual Rate)

$$\text{Semi-skilled Workers} = 1,100 (0.75 - 0.80) = \text{Rs. } 55 \text{ (A)}$$

$$\text{Skilled Workers} = 400 (1.25 - 1.20) = \text{Rs. } 20 \text{ (F)}$$

$$\underline{\text{Rs. } 35 \text{ (A)}}$$

(c) Labour Efficiency Variance

Standard Rate (Standard Time – Actual Time)

Semiskilled workers = Re. 0.75 (1,000 – 1,100) = Rs. 75 (A)

Skilled Workers = 1.25 (500 – 400) = Rs. 125 (F)

Total Labour Efficiency Variance = Rs. 50 (F)

(d) Labour Mix Variance

Standard Cost of Standard Mix – Standard Cost of Actual Mix

∴ Labour Mix Variance = Rs. 1,375 – Rs. 1,325 = Rs. 50 (F)

Verification

Labour Cost Variance = Rate of Pay Variance + Efficiency Variance

Rs. 15 Favourable = – Rs. 35 + Rs. 50 = Rs. 15 Favourable

2.5.3 Overhead Variance

Q26. What is meant by Overhead Variance? Explain different types of Overhead Variances.

Ans. :

Meaning

Overhead is the aggregate of indirect materials, indirect labour and indirect expenses. Analysis of overhead variances is different from that of direct material and direct labour variances by two reasons.

1. It is difficult to establish Standard overhead rate for fixed overhead because changes in the volume of output will affect the standard overhead rate even if there is no change in the amount of fixed overhead cost.
2. For computing overhead variances, there are quite a few terminological options and methods.

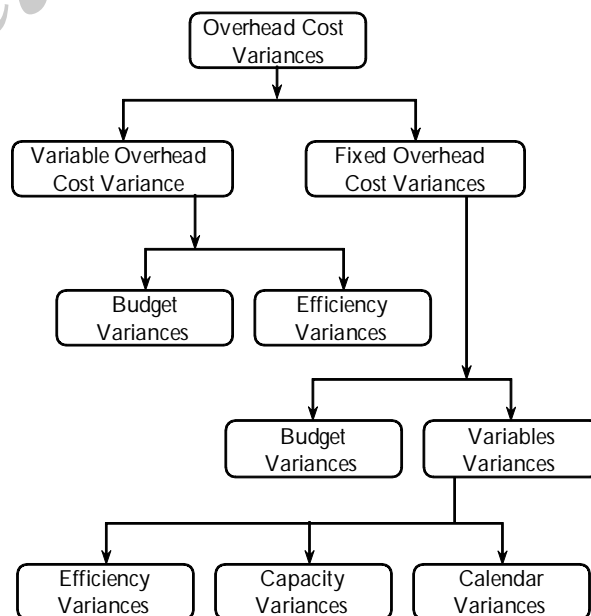


Fig. : Classification of Overhead variance

The overhead variances include fixed overhead variances and variable overhead variances. Moreover, further analysis of overhead variances is also possible according as the available source information. It is significant to know at the beginning that the overhead variance is not anything but under or over absorption of the overhead.

Types

- (a) **Variable Overhead Cost Variance (VOCV):** VOCV is the difference between the standard variable overhead cost for production and the actual variable cost incurred during the period.

$$\text{VOCV} = (\text{Std. hours for actual Output} \times \text{Std. variable overhead rate}) \text{ Actual overhead cost} \\ \text{Absorbed V. O.} - \text{Actual V. O.}$$

1. **Variable Overhead Expenditure Variance (VOEV):** VOEV is known as spending variance or 'Budget Variance'. This variance arises due to the difference between standard variable overhead allowed and actual variable overhead incurred.

$$\text{VOCV} = (\text{Std. Variable Overhead Rate} \times \text{Actual Hours}) \\ \text{Actual overhead cost} \\ \text{Standard V. O.} - \text{Actual V. O.}$$

2. **Variable Overhead Efficiency Variance (VOEV):** VOEV can occur due to the difference between standard hours allowed for actual output and actual hours.

$$\text{VOEV} = (\text{Std. Variable for actual output} - \text{Actual hours}) \times \text{Std. Variable overhead rate} \\ \text{Absorbed V. O.} - \text{Standard V. O.}$$

Check point V. O. Expenditure Variance + V. O. Efficiency Variance

- (b) **Fixed Overhead Cost Variances (FOCV):** FOCV is the difference between standard fixed overhead cost for actual output and actual fixed overhead.

$$\text{FOCV} = (\text{Std. hours for actual output} \times \text{Std. Fixed overhead Rate}) - \text{Actual Fixed overhead} \\ (\text{Absorbed Overhead} - \text{Actual Overhead})$$

- (1) **Fixed Overhead Expenditure Variances (FOEV):** This is known as spending variance or Budget Variance. It arises due to the difference between budgeted fixed overhead and actual fixed overhead.

$$\text{FOEV} = \text{Budgeted Fixed Overhead} - \text{Actual Fixed Overhead}$$

- (2) **Fixed Overhead Volume Variances (FOVV):** It is known as that portion of overhead variance which arises due to the difference between standard cost of overhead absorbed by actual production and the standard allowance for that output.

$$\text{FOVV} = (\text{Std. Time for Actual Output} - \text{Budgeted Time}) \times \text{Std. Rate} \\ \text{Absorbed Overhead} - \text{Budgeted Overhead}$$

- (i) **Efficiency Variances (EV):** It classifies that portion of volume variance which reflects the increased or reduced output arising from efficiency above or below the standard which is expected.

$$\text{EV} = (\text{Std. Time for Actual Output} - \text{Actual Time}) \times \text{Std. Rate} \\ \text{Absorbed Fixed Overhead} - \text{Standard Fixed Overhead}$$

- (ii) **Capacity Variances (CV):** It classifies that portion of the volume variance which is caused by functioning at higher or lower capacity usage than the standard. It is affected by the factors like strikes, power failure, over demand etc.

$$CV = (\text{Actual Time Worked} - \text{Budgeted Time}) \times \text{Std. Rate}$$

$$\text{Std. Fixed Overhead} - \text{Budgeted Overhead}$$

Note: Actual Time = Actual Hours

- (iii) **Calendar Variances (CV):** It classifies that portion of the volume variance which is caused by the difference between the number of working days in the budget period and the number of actual working days in the period to which the budget is applied.

This variance arises only in exceptional circumstances because normal holidays are taken into account while laying down the standard.

$$CV = \text{Actual No. of Working Days} - \text{Std. No. of Working Days} \times \text{Std. Rate per Day}$$

$$(\text{Revised Budgeted Time} - \text{Budgeted Time}) \times \text{Std. Rate per Time}$$

PROBLEMS

13. Calculate Overhead Variances :

Particulars	Standard	Actual
No. of Units	4,000	3,800
Working Days	20	21
Fixed Overhead	Rs.40,000	Rs. 39,000

Sol :

(June-19, Imp.)

$$\begin{aligned} \text{Standard fixed overhead rate per unit} &= \frac{\text{Standard Fixed Overheads}}{\text{Standard Output}} \\ &= \frac{40,000}{4,000} \\ &= ₹ 10 \end{aligned}$$

$$\begin{aligned} \text{Standard production per day} &= \frac{\text{Standard Output (Unit)}}{\text{Standard No. of Working Days}} \\ &= \frac{40,000}{20} \\ &= 200 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{Standard Fixed Overhead Rate Per Day} &= \text{Standard Production Per Day} \times \text{Standard Fixed} \\ &\quad \text{Overhead Rate Per Unit} \\ &= 200 \times 10 = 2,000 \end{aligned}$$

1. Fixed Overhead Cost Variance

$$\begin{aligned}
 \text{Fixed overhead cost variance} &= (\text{Standard fixed overhead rate per unit} \times \text{Actual Output}) \\
 &\quad - \text{Actual fixed overheads} \\
 &= (10 \times 3,800) - 39,000 \\
 &= 38,000 - 39,000 \\
 &= 1,000 \text{ (Unfavourable)}
 \end{aligned}$$

2. Fixed Overhead Expenditure Variance

$$\begin{aligned}
 \text{Fixed overhead expenditure variance} &= \text{Standard fixed overheads} - \text{Actual fixed overheads} \\
 &= 40,000 - 39,000 \\
 &= 1,000 \text{ (Favourable)}
 \end{aligned}$$

3. Fixed Overhead Volume Variance

$$\begin{aligned}
 \text{Fixed overhead volume variance} &= (\text{Standard output} - \text{Actual output}) \times \text{Standard fixed overheads per unit} \\
 &= (4,000 - 3,800) \times 10 \\
 &= 200 \times 10 \\
 &= 2,000 \text{ (Favourable)}
 \end{aligned}$$

4. Fixed Overhead Efficiency Variance

$$\begin{aligned}
 \text{Fixed overhead efficiency variance} &= \text{Standard fixed overhead rate per day} \times \text{Standard time for actual output} - \text{Actual time} \\
 &= 2,000 \times \left(\frac{3,800}{200} - 21 \right) \\
 &= 2,000 \times (19 - 21) \\
 &= 4,000 \text{ (Unfavourable)}
 \end{aligned}$$

5. Fixed Overhead Calender Variance

$$\begin{aligned}
 \text{Fixed overhead calender variance} &= (\text{Actual days} - \text{Standard days}) \times \text{Standard fixed overhead rate per day} \\
 &= (21 - 20) \times 2,000 \\
 &= 1 \times 2,000 \\
 &= 2,000 \text{ (Favourable)}
 \end{aligned}$$

14. From the following data, calculate overhead variances :

	Budgeted	Actual
Output	15,000 units	16,000 units
Number of Working Days	25	27
Fixed Overheads	Rs. 30,000	Rs. 30,500
Variable Overheads	Rs. 45,000	Rs. 47,000

There was an increase of 5% in capacity.

Sol.:

(1) Total Overhead Cost Variance

Actual units × St. Rate – Actual Overhead Cost

$$16,000 \text{ units (Rs. 2 + Rs. 3) – (Rs. 30,500 + Rs. 47,000)}$$

$$= \text{Rs. } 80,000 - \text{Rs. } 77,500 = \text{Rs. } 2,500 \text{ Favourable}$$

$$\text{St. Rate} = \frac{\text{Standard Overheads}}{\text{Standard Output}}$$

$$\therefore \text{St. Rate : Fixed : Rs. } \frac{30,000}{15,000} = \text{Rs. } 2$$

$$\text{– Variable : Rs. } \frac{45,000}{15,000} = \text{Rs. } 3$$

Actual Overhead Cost = Fixed Overheads + Variable Overheads

$$= \text{Rs. } 30,500 + \text{Rs. } 47,000 = \text{Rs. } 77,500.$$

(2) Variable Overhead Expenditure Variance

Actual Units × St. Rate - Actual Variable Overhead Cost

$$16,000 \times \text{Rs. } 3 - \text{Rs. } 47,000 = \text{Rs. } 1,000 \text{ Favourable.}$$

(3) Fixed Overhead Variance

Actual Units × St. Rate (Fixed Overheads) – Actual Fixed Overheads

$$16,000 \times \text{Rs. } 2 - \text{Rs. } 30,500 = \text{Rs. } 1,500 \text{ Favourable}$$

(4) Volume Variance (Part of Fixed Overhead Variance)

Actual Units × St. Rate - Budgeted Fixed Overheads

$$16,000 \times \text{Rs. } 2 - \text{Rs. } 30,000 = \text{Rs. } 2,000 \text{ Favourable}$$

(5) Expenditure Variance (Part of Fixed Overhead Variance)

Budgeted Fixed Overheads – Actual Fixed Overheads

$$= \text{Rs. } 30,000 - \text{Rs. } 30,500 = \text{Rs. } 500 \text{ Unfavourable.}$$

(6) Capacity Variance (Part of Volume Variance)

St. Rate (Revised Budgeted Units – Budgeted Units)

Budgeted units for 25 days = 15,000 units

$$\therefore \text{Budgeted units for 27 days} = \frac{15,000}{25} \times 27 = 16,200 \text{ units}$$

$$\text{Revised budgeted units after 5\% increase in capacity} = 17,010 \text{ i.e., } 16,200 + \frac{5}{100} \times 16,200$$

$$\therefore \text{Capacity Variance} = \text{Rs. } 2 (17,010 - 16,200) = \text{Rs. } 1,620 \text{ Fav.}$$

(7) Calendar Variance (Part of Volume Variance)

Increase or decrease in production due to more or less working days \times St. rate per unit Within 25 days, Standard production = 15,000 units

$$\therefore \text{Within 2 days (27 - 25), production will be increased by} = \frac{15,000 \times 2}{25} = 1,200 \text{ Units}$$

$$\therefore \text{Calendar Variance} = 1,200 \text{ units} \times \text{Rs. 2} = \text{Rs. 2,400 Favourable.}$$

(8) Efficiency Variance (Part of Volume Variance)

Standard Rate (Actual Production – Standard Production)

Standard Production

Budgeted Production = 15,000 units

Production increased due to increase in capacity = 810 units

Production increased due to 2 more working days = 1,200 units

17,010 units

$$\therefore \text{Efficiency Variance} = \text{Rs. 2 (16,000 units - 17,010 units)}$$

$$2(-1010) = 2020 \text{ (A)}$$

15. From the following data, calculate variable overhead variances:

	Budgeted	Actual
Variable overhead	Rs. 2,50,000	Rs. 2,60,000
Output in units	25,000	20,000
Working hours	1,25,000	1,10,000

Sol:

$$\text{Standard variable overhead per unit} = \text{Rs. } \frac{2,50,000}{25,000} = \text{Rs. 10}$$

$$\text{Standard variable overhead per hour} = \text{Rs. } \frac{2,50,000}{1,25,000} = \text{Rs. 2}$$

$$\text{Time allowed per unit of output} = \frac{1,25,000}{25,000} = 5 \text{ hours}$$

(i) Variable Overhead Expenditure Variance

Actual hours worked \times Standard rate per hour – Actual overhead

$$1,10,000 \times \text{Rs. 2} - \text{Rs. 2,60,000} = \text{Rs. 40,000 Adverse}$$

(ii) Variable Overhead Efficiency Variance

Standard time for actual production \times Standard variable overhead rate per hour

Actual hours worked \times Standard variable overhead rate per hour

$$= 1,00,000 \times \text{Rs. } 2 - 1,10,000 \times \text{Rs. } 2 = \text{Rs. } 20,000 \text{ Adverse}$$

Standard time for actual production = Time allowed for 20,000 units of actual output @ 5 hours per unit i.e., 1,00,000 hours.

Total Variable Overhead Variance

Actual output \times Standard rate per unit – Actual overhead

$$20,000 \times \text{Rs. } 10 - \text{Rs. } 2,60,000 = \text{Rs. } 60,000 \text{ Adverse.}$$

16. S.V. Ltd. has furnished you the following data :

	Budgeted	Actual July 2006
Number of working days	25	27
Production in units	20,000	22,000
Fixed overheads	Rs. 30,000	Rs. 31,000

Budgeted fixed overhead rate is Re. 1.00 per hour. In July 2006 the actual hours worked were 31,500.

- Calculate :
- (i) Efficiency variance
 - (ii) Capacity variance
 - (iii) Calendar variance
 - (iv) Volume variance
 - (v) Expenditure variance and
 - (vi) Total overhead variance.

Sol:

Budgeted fixed overheads Rs. 30,000

Budgeted fixed overhead rate per hour Re. 1.00

Therefore, budgeted hours $\left(\frac{\text{Rs. } 30,000}{\text{Re. } 1} \right)$ 30,000 hours

Budgeted production in units 20,000

Therefore, standard time per unit $\left(\frac{\text{Rs. } 30,000}{20,000} \right)$ 1.50 hours

Standard rate per unit $\left(\frac{\text{Budgeted overheads}}{\text{Budgeted output}} \text{ i.e., } \frac{\text{Rs. } 30,000}{20,000 \text{ Units}} \right)$ Rs. 1.50

(i) Efficiency Variance

Standard overhead rate per hour (Standard hours for actual output – Actual hours worked)

Re. 1.00 (33,000 – 31,500) = Rs. 1,500 Favourable.

(Standard hours for actual output = 22,000 units @ 1.5 hours = 33,000 hours).

(ii) Capacity Variance

Standard rate per hour (Actual hours worked – Budgeted hours for 27 days)

Re. 1.00 (31,500 – 32,400) = Rs. 900 Adverse.

(Budgeted hours for 25 days are 30,000, therefore budgeted hours for 27 days are 32,400

$$\text{i.e., } \frac{30,000}{25} \times 27)$$

(iii) Calendar Variance

$\frac{\text{Standard Overheads}}{\text{Standard number of days}}$ (Actual working days – Standard working days)

$$\frac{\text{Rs. } 30,000}{25} (27 - 25) = \text{Rs. } 2,400 \text{ Favourable.}$$

(iv) Volume Variance

Standard rate per unit (Actual output – Standard output)

Rs. 1.50 (22,000 – 20,000) = Rs. 3,000 Favourable.

(v) Expenditure Variance

Budgeted overheads – Actual overheads Rs. 30,000 – Rs. 31,000 = Rs. 1,000 Adverse.

(vi) Total Overhead Variance

Standard overheads for actual output – Actual overheads

or. Standard rate per unit × Actual output – Actual overheads

Rs. 1.50 × 22,000 – Rs. 31,000 = Rs. 2,000 Favourable.

Exercise Problems

1. Calculate :

(a) Material Cost Variance (b) Material Price Variance (c) Material usage Variance

Particulars	Standard	Actual
Quantity (kg)	40	48
Rate per kg (Rs.)	10	12

Ans :

MUV Rs. 80(A)

2. The standard material cost for 100 kg of Chemical X is made up of

Chemical A - 30 kg @ Rs. 4/kg

Chemical B - 40 kg @ Rs.5/kg

Chemical C - 80 kg @ Rs.6/kg

In a batch, 500 kgs of Chemical X was produced from a mix of Chemical A - 140 kg at a cost of Rs.588, Chemical B-220 kg at a cost of Rs. 1,056 and Chemical C-440 kg at a cost of Rs.2,860.

Calculate all Material Variance.

Ans :

MYV Rs. 53.33 (A), MMV Rs. 6.67 (A), MPV Rs. 100.80 (A),

MUV Rs. 60 (A), MCV Rs. 160.80 (A)

3. Quantity of material purchased 800 kg.

Value of material used Rs. 3,400

Standard rate of material Rs. 4/kg

Opening Stock of material 35 kg.

Closing Stock of material 5 kg

Calculate :

(i) Material Price Variance (ii) Material Usage Variance (iii) Material Cost Variance.

Ans :

(i) MPV Rs. 198.75 A, (ii) MUV Rs. 120 A, (iii) MCV Rs. 318.75 A

4. The standard labour requirement per unit of a product was 20 hrs @ Re. 0.50 p per hour. For the production of 500 units, wages paid amounted to Rs. 6,050 for 11,000 hours, including 20 hours idle time due to machine break down. Calculate Labour Variance.

Ans :

(i) LCV Rs.1,050 (A), (ii) LRV Rs.550 (A), (iii) LEV Rs.490 (A), (iv) Idle time Variance Rs.10 (A)

5. The standard labour hours and rates of payment per unit of article 'A' are as follows :

Category of Labour	Hours	Rate per hour (Rs)	Total (Rs)
Skilled	10	3.00	30
Semiskilled	80	1.50	12
Unskilled	16	1.00	16
			58

The actual production was 1,000 articles of 'A' for which the actual hours worked and rates are given below.

Category of Labour	Hours (Rs)	Rate per hour (Rs)	Total
Skilled	9,000	4.00	36,000
Semiskilled	8,400	1.50	12,600
Unskilled	20,000	0.90	18,000
			66,600

Calculate : (a) Labour cost Variance, (b) Labour Rate Variance, (c) Labour Efficiency Variance and (d) Labour Mix Variance

Ans. :

(a) Rs. 8,600 (A), (b) Rs. 7,000 (A), (c) Rs. 1,600 (A), (d) Rs. 4,200 F

Short Question and Answers

1. Compare and contrast Historical Cost and Standard Cost.

Ans :

S.No.	Historical Cost	Standard Cost
1.	Historical costs are the actual cost	Standard costs are the pre-determined cost.
2.	It only informs the total cost of a Product or service	Its function is to evaluate managerial performance and deficiency
3.	Historical costs are ascertained after they have been incurred, and therefore are experienced costs of decisions previously made	Standard costs are anticipated costs which tend to state what the cost of production should be
4.	It is related to past	It is related to future
5.	It cannot do the role of Planning and Budgeting	Budgets are prepared on the basis of Standard costs

2. Budget.

Ans :

Meaning

A budget is a plan that relates to a definite period of time and is expressed in quantitative terms. In other words, it is a predetermined statement that incorporates the policy of the management during a given period and serves as a standard for comparing with the actual results achieved.

Every one is familiar with the idea of a budget because it is essential in every walk of our life national, domestic and business. A budget is prepared to have effective utilization of funds and for the realization of objectives as efficiently as possible. Budgeting is a powerful tool to the management for performing its functions (i.e., formulating plans, coordinating activities and controlling operations etc.) efficiently.

Definitions

- (i) **According to The Chartered Institute of Management Accountants, England,** defines a budget as under.

"A plain quantified in monetary terms prepared and approved prior to a defined period of time usually showing planned income to be generated and /or expenditure to be incurred during that period and the capital to be employed to attain a given objective".

- (ii) **According to Dickey,** "A budget a written plan covering projected activities of a firm for a defined period".

3. Explain the essentials of budgets.*Ans :*

The following are the essentials of a budget :

- It is a plan expressed in monetary terms but it can also contain physical units.
- It is prepared prior to a defined period of time (budget period) during which it will operate.
- It is related to a definite future period.
- It is approved by the management for implementation.
- It usually shows the planned income to be generated and expenditure to be incurred.
- It also shows capital to be employed during the period and
- It is prepared for the purpose of implementing the policy formulated by the management and the objective to be achieved during the period.

4. Budgetary Control System*Ans :***Meaning**

Budgetary control is the process of determining various budgeted figures for the enterprises for the future period and then comparing the budgeted figures with the actual performance for calculating variances, if any. First of all budgets are prepared and then actual results are recorded. The comparison of budgeted and actual figures will enable the management to find out discrepancies and take remedial measures at a proper time. The budgetary control is a continuous process which helps in planning and co-ordination. It provides a method control too. A budget is a means and budgetary control is the end-result.

Definitions

- (i) **According to Brown and Howard**, "Budgetary control is a system of controlling costs which includes the preparation of budgets, co-ordinating the department and establishing responsibilities, comparing actual performance with the budgeted and acting upon results to achieve maximum profitability."
- (ii) **According to Wheldon** characterises budgetary control as 'planning in advance of the various functions of a business so that the business as a whole is controlled'.

5. Objectives of Budgetary Control System*Ans :*

Budgetary control is essential for policy planning and control. It also acts as an instrument of co-ordination. The main objectives of budgetary control are as follows :

1. To ensure planning for future by setting up various budgets. The requirements and expected performance of the enterprise are anticipated.
2. To co-ordinate the activities of different departments.
3. To operate various cost centres and departments with efficiency and economy.
4. Elimination of wastes and increase in profitability.

6. Fixed Budget*Ans :*

The fixed budgets are prepared for a given level of activity, the budget is prepared before the beginning of the financial year. If the financial year starts in January then the budget will be prepared a month or two earlier, i.e., November or December. The changes in expenditure arising out of the anticipated changes will not be adjusted in the budget. There is a difference of about twelve months in the budgeted and actual figures. According to I.C.W.A. London, "Fixed budget is a budget which is designed to remain unchanged irrespective of the level of activity actually attained." Fixed budgets are suitable under static conditions. If sales, expenses and costs can be forecasted with greater accuracy then this budget can be advantageously used.

7. Flexible Budgets*Ans :*

A flexible budget consists of a series of budgets for different level of activity. It , therefore, varies with the level of activity attained. A flexible budget is prepared after taking into consideration unforeseen changes in the conditions of the business. A flexible budget is defined as a budget which by recognising the difference between fixed, semi-fixed and variable cost is designed to change in relation to the level of activity.

8. Compare and contrast fixed budget and flexible budget.*Ans :*

S.No.	Fixed Budget	S.No.	Flexible Budget
1.	It does not change with actual volume of activity achieved. Thus it is known as rigid or inflexible budget.	1.	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
2.	It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	2.	It consists of various budgets for different levels of activity.
3.	Here as all costs like-fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.	3.	Here analysis of variance provides useful information as each cost is analysed according to its behaviour.

9. Standard Costing.*Ans :***Definitions**

- (i) **According to W.B. Lawrence**, A standard costing system is a method of cost accounting in which standard costs are used in recording certain transaction and the actual costs are compared with the standard cost to learn the amount and reason for variations from the standard.
- (ii) **According to D. Joseph**, Standard costing involves the preparation of cost based on pre-determined standards and continuous comparison of actual with them for the purpose of guidance and control.

10. What are the objectives of standard costing?*Ans :***Objectives**

- To institute a control mechanism on all the elements of costs that affect production and sales
- To measure different operational efficiencies and check the wastages
- To improve the delegation of authority and generate a sense of responsibility among the employees
- To develop a cost consciousness in the employees
- To presume the production costs, sales and profit
- To avail the benefits of 'Management by exception.'
- To bring about a vivid progressive vision and sagacious decision making at each managerial level.

11. Variance Analysis.*Ans :***Meaning**

Variance means the deviation of the actual cost or actual sales from the standard cost or profit or sales. Calculation of variances is the main object of standard costing. This calculation shows that whether costs are under controlled or not. A variance may be favourable or adverse.

Definition

The process of computing the amount of variance and isolate the causes of variances between actual and standard.

- C.I.M.A. London

12. State the features of variance analysis.

Ans :

1. In terms of money

For post office, all the variance are calculated and expressed in terms of money. They are always monetary values in as much as the physical variations are the concern of industrial engineers.

2. Standard item

The minuend should always be the standard item and the subtrahend the actual figure. The remainder between the minuend and the subtrahend is multiplied by the standard index. In fact, minuend is the figure from which something is subtracted and subtrahend is that something which is subtracted from the minuend. In other words if the performance has, on the whole, been costlier, it is unfavourable variance and when it is cheaper than it was envisaged, it is favourable.

3. Budgeted figure - the Minuend

Where the prefix 'budget' is used before the variance, the minuend is the budgeted figure based on the normal production. The fixed overhead budget variance is the difference between the budgeted fixed overhead and the actual overhead.

13. Budget center.

Ans :

Budget centre is a section of entity in which control may be exercised and budget is prepared. Preparation of budget for a budget centre is specifically linked with the responsibility of concerned department head. The budget which is prepared for a budget centre is called a departmental budget.

With the help of departmental budgets, functional budgets are compiled. They are integrated to present

organisational budget. A machine shop is a 'budget centre'. The budget for a machine shop is a departmental budget. Because machine shop is a department relating to production, marized in production budget, which is functional budget.

14. Standard Rate

Ans :

Standard Rate refers to a minimum rate, price or cost fixed for performing or completing a work within the industry or organisation. It is fixed based on the method like standard costing. Standard rate may also refer to standard cost or standard price.

In variance analysis, standard rate is calculated using the formulae below,

Standard rate per unit = $\frac{\text{Actual production (in units)}}{\text{Standard production (in units)}}$

Standard rate per hour = $\frac{\text{Standard hours production}}{\text{Actual hours}}$

15. Budget Manual.

Ans :

For proper operation of budgetary control, a budget manual is prepared setting out responsibilities of executives involved in the routine of introduction of budgetary control. This manual contains standardised forms which become input resources for compilation of budgets. Budget manual contains a complete programme of activities involved in budget preparation.

Choose the Correct Answers

1. Plant utilization budget and Manufacturing overhead budgets are types of _____. [c]
(a) Production budget (b) Sales budget
(c) Cost budget (d) None of the above
2. R & D budget and Capital expenditure budget are examples of _____. [c]
(a) Short-term budget (b) Current budget
(c) Long-term budget (d) None of the above
3. The scarce factors is also known as [a]
(a) Key factor (b) Abnormal factor
(c) Linking factor (d) None of the above
4. A budgeting process which demands each manager to justify his entire budget in detail from beginning is [c]
(a) Functional budget (b) Master budget
(c) Zero base budgeting (d) None of the above
5. While preparing sales budget, which of the following factors are considered? [b]
(a) Non-operational factors (b) Environmental factors
(c) Both a and b (d) None of the above
6. _____ is designed after assessment of the volume of output to be produced during budget period. [a]
(a) Cost budget (b) Sales budget
(c) Production budget (d) None of the above
7. _____ is the first step of budgetary system and all other budgets depends on it. [b]
(a) Cost budget (b) Sales budget
(c) Production budget (d) None of the above
8. _____ contains the picture of total plans during the budget period and it comprises information relating to sales, profit, cost, production etc. [a]
(a) Master budget (b) Functional budget
(c) Cost budget (d) None of the above
9. _____ is stated as a budget which is made to change as per the levels of activity attained. [b]
(a) Fixed budget (b) Flexible budget
(c) Both a and b (d) None of the above
10. _____ is prepared for single level of activity and single set of business conditions. [a]
(a) Fixed budget (b) Flexible budget
(c) Both a and b (d) None of the above

11. The type of standard that is best suited for cost control objective is [c]
(a) Normal standard (b) Basic standard
(c) Expected standard (d) Ideal standard
12. The corrective actions after the analysis of variances has to be taken by [b]
(a) Cost accountant (b) Management
(c) Both (d) None of the above
13. Sales margin variance due to sales quantities is measured as [b]
(a) Standard profit – Revised standard profit
(b) Revised standard profit – Budgeted profit
(c) Standard profit + Revised standard profit
(d) Revised standard profit + Budgeted profit
14. The formula to estimate the sales margin variance due to sales mixture is [a]
(a) Standard profit – Revised standard profit
(b) Revised standard profit – Budgeted profit
(c) Standard profit + Revised standard profit
(d) Revised standard profit + Budgeted profit
15. Sales margin variance due to volume can be classified into _____ parts. [b]
(a) 3 (b) 2
(c) 4 (d) 5
16. If the actual output is more than the budgeted output, volume variance is [a]
(a) Favourable (b) Non-favourable
(c) No impact (d) None of the above
17. The formula to estimate overhead cost variance is [b]
(a) Actual output * Standard overhead rate + Actual variable overhead
(b) Actual output * Standard overhead rate per unit – Actual overhead cost
(c) Actual output * Standard overhead rate per unit * Actual overhead cost
(d) None of the above
18. Idle hours are not deducted in [b]
(a) Labour efficiency variance (b) Labour rate variance
(c) Both (a) and (b) (d) None of the above
19. Which of the following statements are true about labour idle time ? [c]
(a) Labour idle time variance is not caused by non-availability of raw material
(b) Labour idle time variance is measured as : Abnormal idle hours * Actual hourly rate
(c) Labour idle time variance is always unfavourable or adverse
(d) All of the above
20. Labour efficiency variance is also known as [d]
(a) Labour time variance (b) Labour quantity variance
(c) Labour usage variance (d) All of the above

Fill in the blanks

1. A _____ is a plan that relates to a definite period of time and is expressed in quantitative terms.
2. A _____ centre is that part of the organization for which the budget is prepared.
3. The period of long term budgets varies between _____ years.
4. The period of current budgets is generally of _____.
5. _____ budgets are concerned with cash receipts and disbursements, working capital, capital expenditure.
6. A _____ budget is an estimate of cash receipts and disbursements during a future period of time.
7. The _____ budget is prepared in relation to the sales budget.
8. _____ is the latest technique of budgeting and it has an increased use as a managerial tool.
9. Budgetary control is a system of controlling _____.
10. A Budget manual spells out _____ of various executives concerned with budgets.
11. _____ are part of cost accounting system whereby standard cost is incorporated directly and formally into the manufacturing accounts.
12. _____ means the deviation of the actual cost or actual sales from the standard cost or profit or sales.
13. Material usage variance may further subdivided into _____ and _____.
14. Material usage variance is also known as _____.
15. Material yield variance is the difference between _____ and _____.
16. Labour variances are also called as _____.
17. (Labour Cost Variance) = _____.
18. _____ is the aggregate of all indirect costs viz., indirect material, indirect labour and indirect expenses.
19. Fixed Expenditure Variance = _____.
20. _____ is the difference between budgeted sales and actual sales.

ANSWERS

1. Budget
2. Budget
3. Five to Ten
4. Months and Weeks
5. Financial
6. Cash
7. Production

8. Zero Base Budgeting
9. Costs
10. Duties and responsibilities
11. Standard costs
12. Variance
13. Material mix variance, material yield variance
14. Quantity variance
15. Actual yield, standard yield
16. Labour cost variance
17. $(SH \times SR) - (AH \times AR)$
18. Overhead
19. Budgeted Fixed Overhead – Actual Fixed overhead
20. Value Variance

Rahul Publications

UNIT III

Techniques of Financial Statement Analysis:

Meaning – Objectives - Techniques: Comparative Statement, Common Size Statement, Trend Analysis. Ratios- Meaning, Objectives and Classification — Computation of Activity, Liquidity, Solvency and Profitability Ratios.

3.1 FINANCIAL STATEMENT ANALYSIS

3.1.1 Meaning

Q1. What do you mean by Financial Statements? Explain the nature of Financial Statements.

Ans :

(Imp.)

Meaning

A financial statement is a collection of data organized according to logical and consistent accounting procedures. Its purpose is to convey an understanding of some financial aspects of a business firm. It may show a position at a moment in time, as in the case of a balance sheet, or may reveal a series of activities over a given period of time, as in the case of an income statement. Thus, the term 'financial statements' generally refers to the two statements :

- (i) the position statement or the balance sheet; and
- (ii) the income statement or the profit and loss account.

These statements are used to convey to management and other interested outsiders the profitability and financial position of a firm.

Financial statements are the outcome of summarising process of accounting. In the words of John N. Myer, "The financial statements provide a summary of the accounts of a business enterprise, the balance sheet reflecting the assets, liabilities and capital as on a certain date and the income statement showing the results of operations during a certain period.

Nature

1. **Recorded Facts:** The term 'recorded facts' refers to the data taken out from the accounting records. The records are maintained on the basis of actual cost data. The original cost or historical cost is the basis of recording various transactions. The figures of various accounts such as cash in hand, cash in bank, bills receivables, sundry debtors, fixed assets etc. are taken as per the figures recorded in the accounting books. The assets purchased at different times and at different prices are put together and shown at cost prices. As recorded facts are not based on replacement costs, the financial statements do not show current financial condition of the concern.
2. **Accounting Conventions.** Certain accounting conventions are followed while preparing financial statements. The convention of valuing inventory at cost or market price, whichever is lower, is followed. The valuing of assets at cost less depreciation principle for balance sheet purposes is followed. The convention of materiality is followed in dealing with small items like pencils, pens, postage stamps, etc. These items are treated as expenditure in the year in which they are purchased even though they are assets in nature. The stationery is valued at cost and not on the principle of cost or market price whichever is less. The use of accounting conventions makes financial statements comparable, simple and realistic.
3. **Postulates:** The accountant makes certain assumptions while making accounting records. One of these assumptions is that the

enterprise is treated as a going concern. The other alternative to this postulate is that the concern is to be liquidated, this, is untenable if management shows an intention to liquidate the concern. So the assets are shown on a going concern basis. Another important assumption is to presume that the value of money will remain the same in different periods. Though there is a drastic change in purchasing power of money the assets purchased at different times will be shown at the amount paid for them. While preparing profit and loss account, the revenue is treated in the year in which the sale was undertaken even though the sale price may be received in a number of years. The assumption is known as realisation postulate.

4. **Personal Judgements:** Even though certain standard accounting conventions are followed in preparing financial statements but still personal judgement of the accountant plays an important part. For example, in applying the cost or market value whichever is less to inventory valuation the accountant will have to use his judgement in computing the cost in a particular case. There are a number of methods for valuing stock, viz; last in first out, first in first out, average cost method, standard cost, base stock method, etc. The accountant will use one of these methods for valuing materials. The selection of depreciation method, to use one of the several methods for estimating uncollectable debts, to determine the period for writing off intangible assets are some of the examples where judgement of the accountant will play an important role in choosing the most appropriate course of action.

3.1.2 Objectives

Q2. What are the objectives of financial statements?

Ans :

Financial statements are the sources of information on the basis of which conclusions are drawn about the profitability and financial position of a concern. They are the major means employed by firm to present their financial situation of owners,

creditors and the general public (The primary objective of financial statements is to assist in decision making. The Accounting Principles Board of America (APB) states the following objectives of financial statements :

- (i) To provide reliable financial information about economic resources and obligations of a business firm.
- (ii) To provide other needed information about changes in such economic resources and obligations.
- (iii) To provide reliable information about changes in net resources (resources less obligations) arising out of business activities.
- (iv) To provide financial information that assists in estimating the earning potentials of business.
- (v) To disclose, to the extent possible, other information related to the financial statements that is relevant to the needs of the users of these statements.

Q3. What are the characteristics of financial statements?

Ans :

The financial statements are prepared with a view to depict financial position of the concern. A proper analysis and interpretation of these statements enables a person to judge the profitability and financial strength of the business. The financial statements should be prepared in such a way that they are able to give a clear, and orderly picture of the concern. The ideal financial statements have the following characteristics :

1. Depict True Financial Position

The information contained in the financial statements should be such that a true and correct idea is taken about the financial position of the concern. No material information should be withheld while preparing these statements.

2. Effective Presentation

The financial statements should be presented in a simple and lucid way so as to make them easily understandable. A person who is not

well versed with accounting terminology should also be able to understand the statements without much difficulty. This characteristic will enhance the utility of these statements.

3. **Relevance**

Financial statements should be relevant to the objectives of the enterprise. This will be possible when the person preparing these statements is able to properly utilise the accounting information. The information which is not relevant to the statements should be avoided, otherwise it will be difficult to make a distinction between relevant and irrelevant data.

4. **Attractive**

The financial statements should be prepared in such a way that important information is underlined so that it attracts the eye of the reader.

5. **Easiness**

Financial statements should be easily prepared. The balances of different ledger accounts should be easily taken to these statements. The calculation work should be minimum possible while preparing these statements. The size of the statements should not be very large. The columns to be used for giving the information should also be less. This will enable the saving of time in preparing the statements.

6. **Comparability**

The results of financial analysis should be in a way that can be compared to the previous years statements. The statement can also be compared with the figures of other concerns of the same nature. Sometimes budgeted figures are given along with the present figures. The comparable figures will make the statements more useful. The Indian Companies Act, 1956 has made it obligatory to give previous year's figures in the balance sheet. The comparison of figures will enable a proper assessment for the working of the concern.

7. **Analytical Representation**

The information should be analysed in such a way that similar data is presented at the same place. A relationship can be established in similar type of information. This will be helpful in analysis and interpretation of data.

8. **Brief**

If possible, the financial statements should be presented in brief. The reader will be able to form an idea about the figures. On the other hand, if figures are given in details then it will become difficult to judge the working of the business.

9. **Promptness**

The financial statements should be prepared and presented at the earliest possible. Immediately at the close of the financial year, statements should be ready.

Q4. **How far financial statements are helpful to the parties interested to know the position of the enterprise?**

Ans :

(Imp.)

The utility of financial statements to different parties is discussed in detail as follows:

1. **Management**

The financial statements are useful for assessing the efficiency for different cost centres. The management is able to exercise cost control through these statements. The efficient and inefficient spots are brought to the notice of the management. The management is able to decide the course of action to be adopted in future.

2. **Creditors**

The trade creditors are to be paid in a short period. This liability is met out of current assets. The creditors will be interested in current solvency of the concern. The calculation of current ratio and liquid ratio will enable the creditors to assess the current financial position of the concern in relation to their debts.

3. Bankers

The banker is interested to see that the loan amount is secure and the customer is also able to pay the interest regularly. The banker will analyse the balance sheet to determine financial strength of the concern and profit and loss account will also be studied to find out the earning position. A banker has a large number of customers and it is not possible to supervise their business activities. It is through the financial statements that a banker can keep a watch on the business plans and performances of its customers. These statements also help the banker to determine the amount of securities it will ask from the customers as a cover for the loans.

4. Investors

The investors include both short-term and long-term investors. They are interested in the security of the principal amount of loan and regular interest payments by the concern. The investors will study the long-term solvency of the concern with the help of financial statements. The investors will not only analyse the present financial position but will also study future prospects and expansion plans of the concern. The possibility of paying back the loan amount in the face of liquidation of the concern is also taken into consideration.

5. Government

The financial statements are used to assess tax liability of business enterprises. The government studies economic situation of the country from these statements. These statements enable the government to find out whether business is following various rules and regulations or not. These statements also become a base for framing and amending various laws for the regulation of business.

6. Trade Associations

These associations provide service and protection to the members. They may analyse the financial statements for the purpose of providing facilities to these members. They may develop standard ratios and design uniform system of accounts.

7. Stock Exchange: The stock exchanges deal in purchase and sale of securities of different companies. The financial statements enable the stock brokers to judge the financial position of different concerns. The fixation of prices for securities, etc., is also based on these statements.

Q5. Discuss the limitations of financial statements.

(OR)

Describe the limitations of financial statements.

Ans :

(Imp.)

The financial statements suffer from the following limitations :

1. Only Interim Reports

These statements do not give a final picture of the concern. The data given in these statements is only approximate. The actual position can only be determined when the business is sold or liquidated. However, the statements have to be prepared for different accounting periods, generally one year, during the life time of the concern. The costs and incomes be apportioned to different periods with a view to determine profits etc. The allocation of expenses and incomes will depend upon the personal judgement of the accountant. The existence of contingent assets and liabilities also makes the statements imprecise. So financial statements do not give the final picture and they are at the most interim reports.

2. Do not give Exact Position

The financial statements are expressed in monetary values, so they appear to give final and accurate position. The value of fixed assets in the balance sheet neither represents the value for which fixed assets can be sold nor the amount which will be required to replace these assets. The balance sheet is prepared on the presumption of a going concern. The concern is expected to continue in the future. So, fixed assets are shown at

cost less accumulated depreciation. There are certain assets in the balance sheet such as preliminary expenses, goodwill, discount on issue of shares which will realise nothing at the time of liquidation though they are shown in the balance sheet.

3. Historical Costs

The financial statements are prepared on the basis of historical costs or original costs. The value of assets decreases with the passage of time current price changes are not taken into account. The statements are not prepared keeping in view the present economic conditions. The balance sheet loses the significance of being an index of current economic realities. Similarly, the profitability shown by the income statement may not represent the earning capacity of the concern. The increase in profits may be due to an increase in prices or due to some abnormal causes and not due to increase in efficiency. The conclusions drawn from financial statements may not give a fair picture of the concern.

4. Impact of Non-monetary Factors Ignored

There are certain factors which have a bearing on the financial position and operating results of the business but they do not become a part of these statements because they cannot be measured in monetary terms. Such factors may include the reputation of the management, credit worthiness of the concern, sources and commitments for purchases and sales, co-operation of the employees, etc. The financial statements only show the position of the financial accounting for business and not the financial position.

5. No Precision

The precision of financial statement data is not possible because the statements deal with matters which cannot be precisely stated. The data are recorded by conventional procedures followed, over the years. Various conventions, postulates, personal judgements etc. are used for developing the data.

3.2 TECHNIQUES OF FINANCIAL STATEMENT

Q6. Explain the various techniques of financial statement analysis.

Ans :

(Imp.)

The analysis and interpretation of financial statements is used to determine the financial position and results of operations as well. A number of methods or devices are used to study the relationship between different statements. An effort is made to use those devices which clearly analyse the position of the enterprise.

The following methods of analysis are generally used :

1. Comparative statements
2. Trend analysis
3. Common size statements
4. Funds flow analysis
5. Cash flow analysis
6. Ratio analysis
7. Cost-volume-profit analysis

1. Comparative Statements

Comparative financial statement is a tool of financial analysis used to study the magnitude and direction of changes in the financial position and performance of a firm over a period of time. The preparation of comparative statements is based on the premise that a statement covering a period of a number of years is more meaningful and significant than for a single year only.

The comparative financial statements are statements of the financial position at different periods; of time. The elements of financial position are shown in a comparative form so as to give an idea of financial position at two or more periods. Any statement prepared in a comparative form will be covered in comparative statements. From practical point of view, generally, two financial statements

(balance sheet and income statement) are prepared in comparative form for financial analysis purposes. Not only the comparison of the figures of two periods but also the relationship between balance sheet and income statement enables an in depth study of financial position and operative results. The comparative statement may show :

- (i) Absolute figures (rupee amounts).
- (ii) Changes in absolute figures i.e., increase or decrease in absolute figures.
- (iii) Absolute data in terms of percentages.
- (iv) Increase or decrease in terms of percentages.
- (v) Comparisons expressed in terms of ratios.
- (vi) Percentage of totals.

2. Trend Analysis

The financial statements may be analysed by computing trends of series of information. This method determines the direction upwards or downwards and involves the computation of the percentage relationship that each statement item bears to the same item in base year. The information for a number of years is taken up and one year, generally the first year, is taken as a base year. The figures of the base year are taken as 100 and trend ratios for other years are calculated on the basis of base year. The analyst is able to see the trend of figures, whether upward or downward.

3. Common-size Statement

The common-size statements, balance sheet and income statement, are shown in analytical percentages. The figures are shown as percentages of total assets, total liabilities and total sales. The total assets are taken as 100 and different assets are expressed as a percentage of the total. Similarly, various liabilities are taken as a part of total liabilities. These statements are also known as component percentage or 100 per cent statements because every individual item is stated as a percentage of the total 100. The

short-comings in comparative statements and trend percentages where changes in items could not be compared with the totals have been covered up. The analyst is able to assess the figures in relation to total values.

4. Funds Flow Analysis

As balance sheet and income statement provides only limited information, it is necessary to prepare a statement which shows the changes in both assets and liabilities of the firm during a specified period of time. Such a statement is known as the funds flow statement or statement of sources and application of funds or statement showing the position/movement of working capital. Thus, with the help of funds flow statement, financial analyst can make appropriate estimation about the financial position and policies of the firm.

5. Cash Flow Analysis

A cash flow statement explains the inflows and outflows of cash and cash equivalents during a specified period of time. Such inflows and outflows are classified into operating, investing and financing activities during a particular period of time. It is used to identify all the factors which lead to changes in the cash position of a business enterprise between the opening and closing dates of a balance sheets. Cash flow statement is also known as "postmortem exercise" or a method of historical financial analysis.

6. Ratio Analysis

Ratio analysis is a very important tool which is used to measure the financial performance of a firm. It is the process of establishing a significant relationship between the items of financial statements which provide a meaningful understanding between the performance and financial position of a firm.

7. Cost-Volume and Profit Analysis

Cost Volume and Profit (CVP) analysis is a technique used to determine the relationship between costs, volume (sales) and profit. It is an important tool for profit planning, cost control and decision making in business. Profits of a firm depends on its sales, selling

price depends on cost of production and costs depends on volume of production. Direct relationship exists between variable cost and production where fixed cost remain constant. Thus, it can be concluded that cost, volume and profit are interrelated to each other. In CVP analysis the relationship between variations in costs and variations in volume is analyzed. CVP analysis is useful in making decisions such as volume of sales to be made in order to avoid loss, sales to earn targeted profit, most profitable product or product mix, effect of changes in costs, volume and price on profits, make or buy decision of a product etc.

3.2.1 Comparative Statement

Q7. What do you mean by comparative analysis? Explain about comparative size balance sheet and comparative size income statement.

Ans :

As the very term signifies, comparative financial statements are statements of the financial position of a business which are formulated to focus on the elements contained therein and provide the necessary time perspective to it. Normally, it is the balance sheet and profit and loss account which alone are prepared in a comparative form, since it is these two statements which are considered as important financial statements. Moreover, it is through these two statements the financial position and the operational results of any business can be determined.

Comparative financial statements are designed to disclose the following,

- i) Absolute data
- ii) Increase or decrease in absolute data
- iii) Increase or decrease in absolute data in terms of percentage.

Comparative financial statements are very useful to the financial analyst since they contain figures drawn from single statement and also provide necessary information for the study of financial and operating results over a period of time. They only

point out the direction or the trend of the movement concerning to financial position and operating results of the business concern.

Comparisons will become effective, only if the data compared truly reflect the constancy in the application of generally accepted accounting principles from date to date or period to period.

The analyst should also keep in mind the price level changes that have taken place between the dates of different transactions and that of preparation of financial statements. Where there is a substantial price fluctuation, the analyst must exercise great caution while interpreting the values.

Comparative Size Balance Sheet

Normally any increase or decrease in the value of various assets and liabilities as well as in proprietor's equity or capital, resulting from the operational activities of the business can be easily observed by means of comparison of the balance sheet at the beginning and end of the accounting period. To facilitate comparison, a simple device known as "comparative balance sheet" may be employed. Such method often yields valuable information relating to progress of the business concern.

While the single balance sheet represents balance of accounts drawn at the end of an accounting period, the comparative balance sheet represents not merely the balance of accounts drawn on two different dates, but also the extent of their increase or decrease between these two dates. The single balance sheet focuses on the financial status of the concern as on a particular date, the comparative balance sheet focuses on the changes that have taken place in one accounting period. The changes are the direct outcome of operational activities, conversion of assets, liability and capital form into others as well as various interactions among assets, liability and capital.

The proforma of comparative balance sheet consists of two columns for the date of the original balance sheet, third column for disclosing increase and decrease in various items. A fourth column showing, the percentage of increase and decrease.

Comparative Size Balance Sheet

Particulars	Previous Year	Current Year	Increase/ Decrease	Percentage Change
Assets :				
Liabilities :				

Comparative Size Income Statement

The comparative income statement shows the operational results of the business for number of accounting periods so that changes in absolute figures from one period to another may be stated in terms of money and percentages.

The comparative income statement also like the comparative balance sheet and provides the same type of particulars such as the account balances, increase or decrease in such balances and the percentage of increase or decrease.

Comparative Size Income Statement

Particulars	Previous Year	Current Year	Increase/ Decrease	Percentage Change

Percentage change is calculated by following formulae,

Percentage change

$$= \frac{\text{Absolute change}}{\text{Amount of previous year}} \times 100.$$

Q8. Explain the proforma of income statement.

Ans :

Income Statement

Particulars	Amount (₹)	Amount (₹)	Amount (₹)
Net Sales			X X
Less: Cost of goods sold			X X
Gross profit			X X
Less: Office and Administration expenses			
Office Salaries	X X		
Office Rent	X X		
Office Insurance	X X		
Taxes	XX	X X	
Less: Selling expenses:			
Sales managers salaries	X X		
Salesmen's salaries	X X		
Advertisement	X X		
Travelling			
Operating Profit	X X	XX	X X
Add: Other Revenues:			X X
Interest and Dividends	X X		
Rent received	X X		
	X X		
Less: Interest paid	X X		X X
Net profit before tax			X X
Less: Provision for income tax			X X
Net profit after tax			X X
Add: Gains from sale of investment			X X
Net profit			X X

Q9. Explain the proforma of balance sheet.

Ans :

'Proforma of Balance Sheet with Qualitative Requirements of All Items

A balance sheet can be prepared in horizontal or vertical form by using the proforma shown below:

Proforma of Horizontal or Traditional Balance Sheet

Liabilities	Amount (₹)	Assets	Amount
Share Capital		Fixed Assets	
Authorised capital	x x	Goodwill	x x
Issue and paid up capital	x x	Land and Buildings	x x
		Furniture and Fixtures	x x
Reserves and Surplus			
Capital reserve	x x	Plant and Machinery	x x
General reserve	x x	Patents and Trademark	x x
Share premium	x x	Vehicles	x x
Secured Loans		Investments	
Debentures	x x	Investments in Govt securities	x x
Loans and advances	x x	Investment in shares	x x
Unsecured Loans		Current Assets, Loans and Advances	
Fixed deposit	x x	Interest accrued	x x
Short term loans and advances	x x	Stores and spare parts	x x
		Stock in trade	x x
Loans and advances from subsidiaries	x x	Loose tools	x x
Current Liabilities and Provisions		Work in progress	x x
Sundry creditors	x x	Sundry debtors	x x
		Cash in hand	x x
Unclaimed dividend	x x	Bank balance	x x
Interest accrued	x x	Bills of exchange	x x
Provision for Tax	x x		
Proposed dividend	x x	Advances recoverable	x x
Insurance and pension for staff	x x	Preliminary expenses	x x
Other provisions	x x	Discount allowed	x x
		Commission, underwriting of shares	x x
	xx		xx

Note

Authorised capital is the amount that can be raised by the firm during its existence. Here, the amount should be either underlined or put in a separate column.

Proforma of Vertical Form of Balance Sheet

Particulars	Amount	Amount	Amount
I. Sources of Funds			
1. Shareholder's Funds:			
(a) Capital			XX
(b) Reserves and surpluses			XX
2. Loan Funds:			XX
(a) Secured loans			XX
(b) Unsecured loans			
Total			XX
II. Application of Funds:			
1. Fixed Assets	XX		
Gross Assets	XX		
Less: Depreciation	XX		
Net Assets	XX	XX	
2. Investments		XX	
3. Current Assets, Loans and Advances:			
(a) Stock		XX	
(b) Sundry Debtors		XX	
(c) Cash and bank balance		XX	
(d) Other current assets		XX	
(e) Loans and advances		XX	
Less: Current liabilities and provisions		XX	
Net Current Assets		XX	XX
4. (a) Miscellaneous expenditure to the extent not written off			XX
(b) Profit and loss a/c			XX
Total			XX

PROBLEMS

1. From the following information prepare a comparative income statement:

Particulars	2013-14 (₹)	2014-15 (₹)
Sales	10,00,000	8,00,000
Cost of goods sold	6,00,000	4,00,000
Administration, Selling and Distribution Expenses	2,00,000	1,40,000
Other Income	40,000	20,000
Income tax	1,20,000	1,40,000

Sol.:

Particulars	2013-14 (₹) (1)	2014-15 (₹) (2)	Absolute Change 3 = (2) - (1)	Percentage Change 4 = (3)/(1) × 100
Net Sales	10,00,000	8,00,000	- 2,00,000	- 20%
Less: Cost of goods sold	6,00,000	4,00,000	- 2,00,000	- 33.33%
Gross Profit	4,00,000	4,00,000	-	-
Less: Operating Expenses: Administration, selling and distribution expenses	2,00,000	1,40,000	- 60,000	- 30
Operating Profit	2,00,000	2,60,000	+ 60,000	+ 30
Add: Other Income	40,000	20,000	- 20,000	- 50
Net Profit Before Tax	2,40,000	2,80,000	+ 40,000	+ 16.67
Less: Income Tax	1,20,000	1,40,000	+ 20,000	+ 16.67
Net Profit After Tax	1,20,000	1,40,000	+ 20,000	+ 16.67

2. Prepare a comparative income statement of Goutham Ltd. from the given data:

Particulars	2016 (₹)	2017 (₹)
Sales	4,00,000	5,00,000
Cost of goods sold	2,80,000	3,40,000
Administrative Expenses	40,000	50,000
Selling Expenses	30,000	36,000
Operating Expenses	20,000	22,000
Non-operating expenses	14,000	16,000
Tax rate	40%	50%

*Sol.:***Comparative Income Statement of Goutham Ltd.**

Particulars	2016 (1)	2017 (2)	Absolute Change 3 = (2) - (1)	Percentage of Change 4 = (3)/(1) × 100
Sales	4,00,000	5,00,000	1,00,000	25%
Less: Cost goods sold	2,80,000	3,40,000	60,000	21.43%
Gross Profit	1,20,000	1,60,000	40,000	33.33%
Less:				
Administrative Expenses	40,000	50,000	10,000	25%
Selling Expenses	30,000	36,000	6,000	20%
Operating Expenses	20,000	22,000	2,000	10%
Operating Profit	30,000	52,000	22,000	73.33%
Less: Non-operating expenses	14,000	16,000	2,000	14.28%
Profit Before Tax	16,000	36,000	20,000	125%
Less: Tax Rate	6,400	18,000	11,600	181.25%
Net Income	9,600	18,000	8,400	87.5%

3. Prepare Nithin's comparative Balance Sheet from the following:

Items	2014 (₹)	2015 (₹)
Current Assets	6,00,000	9,00,000
Capital	5,00,000	5,00,000
Long term Liabilities	7,00,000	6,00,000
Fixed Assets	9,00,000	7,00,000
Short term Liabilities	3,00,000	5,00,000

Sol :

Comparative Balance Sheet of Mr. Nithin

Particulars	2014 (1)	2015 (2)	Absolute Change 3 = (2) - (1)	Percentage of Change 4 = (3)/(1) × 100
Assets:				
Fixed Assets	9,00,000	7,00,000	- 2,00,000	-22.22%
Total Fixed Assets (A)	9,00,000	7,00,000	- 2,00,000	- 22.22%
Current Assets	6,00,000	9,00,000	3,00,000	50%
Total Current Assets (B)	6,00,000	9,00,000	3,00,000	50%
Total Assets (A + B)	15,00,000	16,00,000	1,00,000	6.67%
Liabilities:				
Capital	5,00,000	5,00,000	-	-
Long term liabilities	7,00,000	6,00,000	- 1,00,000	- 14.28%
Short term liabilities	3,00,000	5,00,000	2,00,000	66.66%
Total Liabilities	15,00,000	16,00,000	1,00,000	6.67%

4. The following are the Balance Sheets of Ram Ltd. and Shyam Ltd. for the year ending 31-3-2012.

Liabilities	Ram Ltd. (₹)	Shyam Ltd. (₹)	Assets	Ram Ltd. (₹)	Shyam Ltd. (₹)
Equity share capital	2,50,000	1,70,000	Land and buildings	3,50,000	2,75,000
Pref. share capital	1,20,000	80,000	Plant and machinery	2,70,000	3,00,000
Reserves and surplus	50,000	70,000	Investment (Temporary)	72,000	12,000
Loans	3,50,000	2,79,000	Book-debts	47,500	25,000
Bills payable	25,000	14,000	Prepaid expenses	35,400	-
Sundry creditor	18,000	8,000	Cash at bank	48,690	21,000
O/S expenses	8,590	4,500			
Dividend declared	2000	7,500			
	8,23,590	6,33,000		8,23,590	6,33,000

Prepare a Comparative Balance Sheet and analyze Financial Position.

Sol:

Comparative Balance Sheet of Ram Ltd., and Shyam Ltd., for the year Ending 31-3-12

Particulars	Ram Ltd. (₹)	Shyam Ltd. (₹)	Absolute Change	Percentage Change
Assets:				
Fixed Assets:				
Land and Buildings	3,50,000	2,75,000	-75,000	-21%
Plant and machinery	2,70,000	3,00,000	30,000	11%
Total (A):	6,20,000	5,75,000	-45,000	-7%
Current Assets:				
Investment (Temporary)	72,000	12,000	-60,000	-83%
Book debts	47,500	25,000	-22,500	-47%
Prepaid expenses	35,400	-	-35,400	-100%
Cash at bank	48,690	21,000	-27,690	-57%
Total (B):	2,03,590	58,000	-1,45,590	-72%
Total Assets (A+B)	8,23,590	6,33,000	-1,90,590	-23%
Liabilities:				
Equity share capital	2,50,000	1,70,000	-80,000	-32%
Pref. share Capital	1,20,000	80,000	-40,000	-33.33%
Reserves and surplus	50,000	70,000	20,000	40%
Loans	3,50,000	2,79,000	-71,000	-20%
Total (A):	7,70,000	5,99,000	-1,71,000	-22%
Current liabilities:				
Bills payable	25,000	14,000	-11,000	-44%
Sundry creditors	18,000	8,000	-10,000	-56%
O/s expenses	8,590	4,500	- 4,090	- 48%
Dividend declared	2,000	7,500	5,500	275%
Total (B):	53,590	34,000	-19,590	-37%
Total Liabilities (A+B):	8,23,590	6,33,000	-1,90,590	-23%

Interpretations

- Both current assets and current liabilities in Ram Ltd are more than those in shyam Ltd. It indicates that working capital of Ram Ltd is also more than shyam Ltd. Hence liquidity position of Ram Ltd is comparatively better than shyam Ltd.

2. Share capital, Reserves and loan amount seems to be utilized by both the companies in payment of dividend and purchasing fixed assets.
3. Reserves and surplus can be improved in both the companies.
4. Above all financial position of Ram Ltd., and Shyam Ltd., is satisfactory.

3.2.2 Common Size Statement

Q10. Define Common Size Statement. Write about common size balance sheet and common size income statement.

Ans :

Meaning

Common size statement represents all figures in percentages because of which it is also called as 'percentage statement'. As common size statement shows every financial element in percentages, it get easy for the firm to measure its financial status, size, capacity and liquidity. Thus, it provides significant information about the financial performance and financial stability of the firm.

The common size statements are also known as "component percentage" or "100 percent statement". Each statement is reduced to the total of 100 and each individual item contained there in is expressed as a percentage to the total 100. Thus, each percentage in the statement shows the relationship of individual item to its representative total.

Common size statement consist of two different statements i.e., common size income statement and common size balance sheet.

Computation

- (i) The total assets, total liabilities, capital and total net sales are taken as 100.
- (ii) The ratio that each item bears to the total is ascertained by dividing the individual amounts by the total amount as contained in the statement. For instance, if selling and distribution expenses amount to ₹ 3 lakhs out of a net sales of ₹ 30 lakhs for a company in 2019, then the ratio that this item bears to the total can be calculated as follows:

$$= \frac{\text{Selling and distribution expenses}}{\text{Net sales}} = \frac{₹ 3,00,000}{₹ 30,00,000}$$

This ratio of 10% denotes that the selling and distribution expenses of the company are 10% of the net sales for 2019. In other words, the amount to ₹ 10 for every ₹ 100 worth of net sales.

Common-Size Balance Sheet

The common-size balance sheet represents the relation of each asset item to total assets and each liability and capital item to total liabilities and capital respectively. As these percentages indicate the relationship to balance sheet totals, variations from year to year do not necessarily indicate changes in money amounts. The ratios expressed in the common-size balance sheet would reflect a change in the individual item, total or both.

The common-size balance sheet percentages facilitate a horizontal comparison from year to year and a study of the trends of relationships. They do not throw light on the trends of the individual items from year to year. The usefulness of the common-size balance sheet can be improved by establishing norms of percentages for each item to the relative total. The formula for calculating percentages of individual asset or liability is as follows,

$$\text{Percentage} = \frac{\text{Asset}}{\text{Total Asset}} \times 100 \text{ (or)}$$

$$\text{Percentage} = \frac{\text{Liability}}{\text{Total Liability}} \times 100$$

Common-Size Income Statement

Common-size income statement show the percentage of net sales that has been absorbed by each individual item representing cost or expense, in the income statement. The comparison of the common-size income statement ratios is significant as they indicate whether a larger or smaller amount of net sales figure is used in meeting a particular cost or expenses.

PROBLEMS

5. From the following information prepare common size income statement for the years ended 31st December 2008 and 2009.

Particulars	31 st December (` in '000')	31 st December (` in '000')
Sales	1,000	1,400
Miscellaneous income	40	30
	1,040	1,430
Expenses:		
Cost of sales	650	1,020
Office expenses	40	50
Selling expenses	60	90
Interest	50	60
	800	1,220
	240	210
Net Profit	1,040	1,430

Sol :

Common Size Income Statement

For the Years Ending 31 December 2008 and 31 December 2009

Particulars	2008		2009	
	Amount	Percentage	Amount	Percentage
	(` in '000)	(%)	(` in '000)	(%)
Sales	1,000	100	1,400	100
Less: Cost of sales	650	65	1020	72.86
Gross Profit (A)	350	35	380	27.14

Operating Expenses				
Office expenses	40	4	50	3.57
Selling expenses	60	6	90	6.43
Total Operating Expenses (B)	100	10	140	10
Operating Profit (A - B)	250	25	240	17.14
Add: Miscellaneous income	40	4	30	2.14
Total Income	290	29	270	19.28
Less: Non-operating expenses:				
Interest	50	5	60	4.29
Net Profit	240	24	210	15

Interpretations

- Both sales and gross profit have increased in absolute figures but percentage of gross profit has decreased in year 2009.
 - The increase in cost of sales has reduced profitability from 35 percent to 27.14 percent.
 - Percentage of operating expenses remains same in both the years.
 - The absolute figure as well as percentage of net profit have decreased in 2009 compare to 2008.
6. Following is the Balance Sheets of Indrani Ltd., Prepare a Common Size Balance Sheet.

Particulars	Note No.	31-03-2017 Rs.	31-03-2018 Rs.
I Equity and Liabilities:			
1. Shareholders Funds			
a) Share Capital		15,00,000	10,00,000
2. Non-Current Liabilities			
a) Long term Borrowings		5,00,000	6,00,000
3. Current Liabilities			
a) Trade Payables		2,00,000	4,00,000
Total - I		22,00,000	20,00,000
II Assets			
1. Non-Current Assets			
a) Fixed Assets			
i) Tangible Assets		6,00,000	15,00,000
ii) Intangible Assets		3,00,000	3,00,000
2. Current Assets:			
a) Trade Receivables		3,00,000	2,00,000
Total - II		22,00,000	20,00,000

Sol.:

Particulars	2017 Amount	%	2018 Amount	%
Equity & Liabilities				
(I) Share Holders Funds				
(a) Share capital	15,00,000	68.18	10,00,000	50.00
Total (A)	15,00,000	68.18	10,00,000	50.00

(II) Non Current Liabilities				
(a) Long term Borrowings	5,00,000	22.72	6,00,000	30.00
Total (B)	5,00,000	22.72	6,00,000	30.00
(III) Current Liabilities				
(a) Trade Payables	2,00,000	9.09	4,00,000	20.00
Total (C)	2,00,000	9.09	4,00,000	20.00
Total (A + B + C)	22,00,000	100.00	20,00,000	100.00
Assets				
(I) Non current Assets				
(a) Fixed Assets				
(i) Tangible assets	16,00,000	72.72	15,00,000	75.00
(ii) Intangible assets	3,00,000	13.63	3,00,000	15.00
Total A	19,00,000	40.91	18,00,000	90.00
(II) Current Assets				
(a) Trade Receivables	3,00,000	13.64	2,00,000	10.00
Total (B)	3,00,000	13.64	2,00,000	10.00
Total (A + B)	22,00,000	100.00	20,00,000	100.00

7. The following are the Balance Sheets of A Ltd. and B Ltd. as on 31st March 2015. Compare these on the basis of common size Balance Sheet and comment.

Particulars	A Ltd (₹)	B Ltd (₹)
Equity and Liabilities:		
Share Holder Fund:		
Share capital	3,50,000	2,50,000
Reserves and surplus	70,000	70,000
Non-Current Liabilities:		
Debentures	3,50,000	2,50,000
Current Liabilities:		
Trade Payables: Creditors	25,000	20,000
Bills Payables	15,000	10,000
	8,10,000	6,00,000

Sol.:

Common Size Balance Sheet

Particulars	A. Ltd		B. Ltd	
	Amount (₹)	Percentage (%)	Amount (₹)	Percentage (%)
Equity and Liabilities:				
Shareholders Funds:				
Share capital	3,50,000	43.21	2,50,000	41.67
Reserves and Surplus	70,000	8.64	70,000	11.67
Total (A)	4,20,000	51.85	3,20,000	53.34
Non-Current Liabilities:				
Debentures	3,50,000	43.21	2,50,000	41.67
Total (B)	3,50,000	43.21	2,50,000	41.67
Current Liabilities:				
Trade Payables: Creditors	25,000	3.09	20,000	3.33
Bills Payable	15,000	1.85	10,000	1.67
Total (C)	40,000	4.94	30,000	5.00
Total Liabilities (A + B + C)	8,10,000	100	6,00,000	100

Interpretation

- Share capital, reserves and surplus are seems to be properly utilized by both the companies.
- The current liabilities are increasing from 4.94 to 5.00 which is not a big difference. Therefore the liquidation position both companies is close to satisfactory.

8. Compare the financial position of the following two companies X. Co and Y. Co. With the help of a common-size balance sheet.

Liabilities	X.Co (₹)	Y.Co (₹)	Assets	X.Co. (₹)	Y.Co. (₹)
Preference Share capital	1,20,000	1,60,000	Land and Buildings	80,000	1,23,000
Equity share capital	1,50,000	4,00,000	Plant and machinery	3,34,000	6,00,000
Reserves	14,000	18,000	Short term investments	1,000	40,000
Long-term loans	1,15,000	1,30,000	Stock	10,000	25,000
Bills payable	2,000	-	Debtors	4,000	8,000
Sundry creditors	12,000	4,000	Prepaid expenses	1,000	2,000
Outstanding expenses	15,000	6,000	Cash at bank	8,000	10,000
Proposed dividend	10,000	90,000			
	4,38,000	8,08,000		4,38,000	8,08,000

Sol.:

Common-Size Balance Sheet

Particulars	X.Co.		Y.Co	
	Amount (₹)	Percentage (%)	Amount (₹)	Percentage (%)
Fixed Assets:				
Land and buildings	80,000	18.26	1,23,000	15.22
Plant and Machinery	3,34,000	76.26	6,00,000	74.26
Total (A)	4,14,000	94.52	7,23,000	89.48
Current Assets:				
Short term investments	1,000	0.23	40,000	4.95
Stock	10,000	2.28	25,000	3.09
Debtors	4,000	0.91	8,000	0.99
Prepaid expenses	1,000	0.23	2,000	0.25
Cash at bank	8,000	1.83	10,000	1.24
Total (B)	24,000	5.48	85,000	10.52
Total Assets (A + B)	4,38,000	100	8,08,000	100
Liabilities:				
Pref. Share capital	1,20,000	27.39	1,60,000	19.80
Equity share capital	1,50,000	34.25	4,00,000	49.50
Reserves	14,000	3.19	18,000	2.23
Long term loans	1,15,000	26.25	1,30,000	16.09
Total (A)	3,99,000	91.09	7,08,000	87.62
Current Liabilities:				
Bills payable	2,000	0.46	-	
Sundry creditors	12,000	2.74	4,000	0.49
Outstanding expenses	15,000	3.43	6,000	0.74
Proposed dividend	10,000	2.28	90,000	11.14
Total	39,000	8.91	1,00,000	12.38
Total Liabilities (A + B)	4,38,000	100	8,08,000	100

Interpretation

1. Y.Co is financed in traditional way compared to X.Co. As Y. Company is dependent on its own funds rather than outsiders funds. Now a days companies are dependent on outsiders funds more than own funds. From this perspective, Y company seems to be traditionally financed. Above all, both the companies have good financial planning.

2. There is inadequate working capital in both the companies. As percentage of current assets is less than percentage of current liabilities. The difference of percentage is more in X.Co than Y.Co. i.e, 3.44% and 1.86% respectively.
3. It is observed that fixed assets are purchased from working capital in both the companies. Long term funds must be used for working capital purposes but both the companies utilize working capital for purchasing fixed assets.
4. Problem of inadequate working capital is faced by both the companies. So, companies must issue more capital or raise lone term loan to have sufficient working capital.

3.2.3 Trend Analysis

Q11. What is Trend Analysis? Explain the procedure for calculating trends.

Ans :

Meaning

The financial statements may be analysed by computing trends of series of information. This method determines the direction upwards or downwards and involves the computation of the percentage relationship that each statement item bears to the same item in base year. The information for a number of years is taken up and one year, generally the first year, is taken as a base year. The figures of the base year are taken as 100 and trend ratios for other years are calculated on the basis of base year. The analyst is able to see the trend of figures, whether upward or downward.

Procedure

1. One year is taken as a base year. Generally, the first or the last is taken as base year.
2. The figures of base year are taken as 100.
3. Trend percentages are calculated in relation to base year. If a figure in other year is less than the figure in base year the trend percentage will be less than 100 and it will be more than 100 if figure is more than base year figure. Each year's figure is divided by the base year's figure.

PROBLEMS

9. From the following information, interpret the results of operations of manufacturing concern using trend ratios.

(Amount in '000 Rupees)

For the year ended 31st March

Particulars	2006	2005	2004	2003
Sales (net)	13,000	12,000	9,500	10,000
Cost of Goods Sold	7,280	6,960	5,890	6,000
Gross Profit	5,720	5,040	3,610	4,000
Selling Expenses	1,200	1,100	970	1,000
Net Operating Profit	4,520	3,940	2,640	3,000

Sol.:

TREND RATIOS**31st March (2003-2006)****For the year ended 31st March**

Particulars	2003	2004	2005	2006
Sales	100	95	120	130
Cost of Goods Sold	100	98	116	121
Gross Profit	100	90	126	143
Selling Expenses	100	97	110	120
Net Operating Profit	100	88	131	150

Interpretation

From the above statement the following points are worth noting :

- (i) The sales volume, cost of goods sold and selling expenses all declined in 2003-04 as compared to 2002-03 but the decrease in cost of goods sold and selling expenses was less to the decrease in sales volume.
- (ii) The sales volume, cost of goods sold and selling expenses in 2004-05 and 2005-06 have increased in comparison to 2002-03 but the increase in cost of goods sold and selling expenses is lesser to the increase in sales volume.

In conclusion, it can be said that a large proportion of cost of goods sold and selling expenses is fixed and is not affected by changes in sales volume. This fact also becomes clear from this fact that in 2003-04 when sales fell down, the decrease in the company's net operating profit was faster to sales volume and in 2005-06 when the sales volume increased, the increase in company's net profit was faster to sales volume.

10. Calculate the trend percentages from the following figures of X Ltd. taking 2009 as the base and interpret them:

(Ten lakhs)

Year	Sales	Stock	Profit before tax
2009	1,881	709	321
2010	2,340	781	435
2011	2,655	816	458
2012	3,021	944	527
2013	3,768	1154	672

Sol :

Trend Percentages
(Base Year 2009 = 100)

Year	Sales		Stock		Profit before tax	
	Amount (` Lakhs)	Trend Percentage	Amount ` Lakhs	Trend Percentage	Amount `	Trend Percentage
2009	1,881	100	709	100	321	100
2010	2,340	124	781	110	435	136
2011	2,655	141	816	115	458	143
2012	3,021	161	944	133	527	164
2013	3,768	200	1,154	162	672	209

Interpretation

- (1) The sales have continuously increased in all the years upto 2013. The percentage in 2013 is 200 as compared to 100 in 2009. The increase in sales is quite satisfactory.
- (2) The figures of stock have also increased from 2009 to 2013. The increase in stocks is more in 2012 and 2013 as compared to earlier years.
- (3) Profit before tax has substantially increased. In five years period it has more than, doubled. The comparative increase in profits is much higher in 2012 and 2013 as compared to 2011.

3.3 RATIOS ANALYSIS

3.3.1 Meaning

Q12. What is Ratios Analysis?

Ans :

Meaning

Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. However, ratio analysis is not an end in itself. It is only a means of better understanding of financial strengths and weaknesses of a firm. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and interpreted. There are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios from the same keeping in mind the objective of analysis. The ratios may be used as a symptom like blood pressure, the pulse rate or the body temperature and their interpretation depends upon the calibre and competence of the analyst.

The following are the four steps involved in the ratio analysis :

- (i) Selection of relevant data from the financial statements depending upon the objective of the analysis.
- (ii) Calculation of appropriate ratios from the above data.
- (iii) Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from projected financial statements or the ratios of some other firms or the comparison with ratios of the industry to which the firm belongs.
- (iv) Interpretation of the ratios.

3.3.2 Objectives

Q13. What are the objectives of Ratios Analysis?

Ans :

Following are the objectives of ratio analysis:

- **Highlights the area of concern:** When accounting ratios are compared with the ideal ratios prevailing in the industry, it brings to light the area which requires the immediate attention of the management.
- **Facilitates comparison:** With the help of ratio analysis, comparisons of intra and inter-company performances become easier.
- **Evaluation of efficiency:** They provide a detailed overview of the liquidity, solvency, and profitability position of the business which in its entirety helps in evaluating the efficiency of the business.
- **Forecasting and planning:** One of the primary objectives of ratio analysis is that they help in comparing the trend in the financials over the past years which aids the management in preparing future budgets and forecasts.
- **Transparency to stakeholders:** Ratio analysis helps the various stakeholders in measuring the operative efficiency of the company, thereby ensuring complete transparency.
- **Better decision making:** Analysis of various accounting ratios helps the management in taking better and improved decisions.
- **Simplicity:** It converts complex financial figures which otherwise would require a professional to interpret them into simpler data that is easily understandable by a layman.

Q14. Explain the guidelines for the uses of ratio analysis.

Ans :

Following guidelines or factors may be kept in mind while interpreting various ratios :

1. **Accuracy of Financial Statements:** The ratios are calculated from the data available in financial statements. The reliability of ratios is linked to the accuracy of information in these statements. Before calculating ratios one should see whether proper concepts and conventions have been used for preparing financial statements or not. These statements should also be properly audited by competent auditors. The precautions will establish the reliability of data given in financial statements.
2. **Objective or Purpose of Analysis:** The type of ratios to be calculated will depend upon the purpose for which these are required. If the purpose is to study current financial position then ratios relating to current assets and current liabilities will be studied. The purpose of 'user' is also important for the analysis of ratios. A creditor, a banker, an investor, a shareholder, all have different objects for studying ratios. The purpose or object for which ratios are required to be studied should always be kept in mind for studying various ratios. Different objects may require the study of different ratios.
3. **Selection of Ratios:** Another precaution in ratio analysis is the proper selection of appropriate ratios. The ratios should match the purpose for which these are required. Calculation of large number of ratios without determining their need in the present context may confuse the things instead of solving them. Only those ratios should be selected which can throw proper light on the matter to be discussed.

4. **Use of Standards:** The ratios will give an indication of financial position only when discussed with reference to certain standards. Unless otherwise these ratios are compared with certain standards one will not be able to reach at conclusions. These standards may be *rule of thumb* as in case of current ratio (2:1) and acid-test ratio (1 : 1), may be industry standards, may be budgeted or projected ratios, etc. The comparison of calculated ratios with the standards will help the analyst in forming his opinion about financial situation of the concern.
5. **Calibre of the Analyst:** The ratios are only the tools of analysis and their interpretation will depend upon the calibre and competence of the analyst. He should be familiar with various financial statements and the significance of changes, etc. A wrong interpretation may create havoc for the concern since wrong conclusions may lead to wrong decisions. The utility of ratios is linked to the expertise of the analyst.
6. **Ratios Provide Only a Base:** The ratios are only guidelines for the analyst, he should not base his decisions entirely on them. He should study any other relevant information, situation in the concern, general economic environment, etc. before reaching final conclusions. The study of ratios in isolation may not always prove useful. A businessman will not afford a single wrong decision because it may have far-reaching consequences. The interpreter should use the ratios as guide and may try to solicit any other relevant information which helps in reaching a correct decision.

Q15. Explain the utility of ratio analysis.

Ans :

(Imp.)

(a) Managerial uses of Ratio Analysis

1. **Helps in decision-making:** Financial statements are prepared primarily for decision-making. But the information provided in financial statements is not an end in itself and no meaningful conclusion can be drawn from these statements alone. Ratio analysis helps in making decisions from the information provided in these financial statements.
2. **Helps in financial forecasting and planning:** Ratio Analysis is of much help in financial forecasting and planning. Planning is looking ahead and the ratios calculated for a number of years work as a guide for the future. Meaningful conclusions can be drawn for future from these ratios. Thus, ratio analysis helps in forecasting and planning.
3. **Helps in communicating:** The financial strength and weakness of a firm are communicated in a more easy and understandable manner by the use of ratios. The information contained in the financial statements is conveyed in a meaningful manner to the one for whom it is meant. Thus, ratios help in communication and enhance the value of the financial statements.
4. **Helps in co-ordination:** Ratios even help in co-ordination which is of utmost importance in effective business management. Better communication of efficiency and weakness of an enterprise results in better co-ordination in the enterprise.
5. **Helps in Control:** Ratio analysis even helps in making effective control of the business. Standard ratios can be based upon proforma financial statements and variances or deviations, if any, can be found by comparing the actual with the standards so as to take a corrective action at the right time. The weaknesses or otherwise, if any, come to the knowledge of the management which helps in effective control of the business.
6. **Other Uses:** These are so many other uses of the ratio analysis. It is an essential part of the budgetary control and standard costing. Ratios are of immense importance in the analysis and interpretation of financial statements as they bring the strength or weakness of a firm.

(b) Utility to Shareholders/Investors

An investor in the company will like to assess the financial position of the concern where he is going to invest. His first interest will be the security of his investment and then a return in the form of dividend or interest. For the first purpose he will try to assess the value of fixed assets and the loans raised against them. The investor will feel satisfied only if the concern has sufficient amount of assets. Long-term solvency ratios will help him in assessing financial position of the concern. Profitability ratios, on the other hand, will be useful to determine profitability position. Ratio analysis will be useful to the investor in making up his mind whether present financial position of the concern warrants further investment or not.

(c) Utility to Creditors

The creditors or suppliers extend short-term credit to the concern. They are interested to know whether financial position of the concern warrants their payments at a specified time or not. The concern pays short-term creditors out of its current assets. If the current assets are quite sufficient to meet current liabilities then the creditor will not hesitate in extending credit facilities. Current and acid-test ratios will give an idea about the current financial position of the concern.

(d) Utility to Employees

The employees are also interested in the financial position of the concern especially profitability. Their wage increases and amount of fringe benefits are related to the volume of profits earned by the concern. The employees make use of information available in financial statements. Various profitability ratios relating to gross profit, operating profit, net profit, etc. enable employees to put forward their viewpoint for the increase of wages and other benefits.

(e) Utility to Government

Government is interested to know the overall strength of the industry. Various financial statements published by industrial units are used to calculate ratios for determining short-term, long-term and overall financial position of the concerns. Profitability indexes can also be prepared with the help of ratios. Government may base its future policies on the basis of industrial information available from various units. The ratios may be used as indicators of overall financial strength of public as well as private sector. In the absence of the reliable economic information, governmental plans and policies may not prove successful.

(f) Tax Audit Requirements

Section 44 AB was inserted in the Income Tax Act by the Finance Act, 1984. Under this section every assessee engaged in any business and having turnover or gross receipts exceeding ₹ 40 lakh is required to get the accounts audited by a chartered accountant and submit the tax audit report before the due date for filing the return of income under Section 139 (1). In case of a professional, a similar report is required if the gross receipts exceed ₹ 10 lakh. Clause 32 of the Income Tax Act requires that the following accounting ratios should be given :

- (i) Gross Profit/Turnover
- (ii) Net Profit/Turnover
- (iii) Stock-in-trade/Turnover
- (iv) Material Consumed/Finished Goods Produced.

Further, it is advisable to compare the accounting ratios for the year under consideration with the accounting ratios for the earlier two years so that the auditor can make necessary enquiries, if there is any major variation in the accounting ratios.

Q16. Explain the limitations of ratio analysis.

Ans. :

(Imp.)

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations:

1. **Limited Use of a Single Ratio:** A single ratio, usually, does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help him in making any meaningful conclusion.
2. **Lack of Adequate Standards:** There are no well accepted standards or rules of thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.
3. **Inherent Limitations of Accounting.** Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indicators of the future.
4. **Change of Accounting Procedure:** Change in accounting procedure by a firm often makes ratio analysis misleading, e.g., a change in the valuation of methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative and an unfavourable gross profit ratio.
5. **Window Dressing:** Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence, one has to be very careful in making a decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by a firm.
6. **Personal Bias:** Ratio are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.
7. **Uncomparable:** Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures, etc. It makes comparison of ratios difficult and misleading. Moreover, comparisons are made difficult due to differences in definitions of various financial terms used in the ratio analysis.
8. **Absolute Figures Distortive:** Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis.

9. **Price Level Changes:** While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.
10. **Ratios no Substitutes:** Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statements from which they are computed.
11. **Clues not Conclusions:** Ratios provide only clues to analysts and not final conclusions. These ratios have to be interpreted by these experts and there are no standard rules for interpretation.

3.4 CLASSIFICATION OF RATIO ANALYSIS

Q17. Explain different types of ratios.

Ans :

The following are different types of ratios.

1. Activity Ratios

These ratios measure the effectiveness with which a firm uses its available resources. These ratios are also called as "Turnover Ratios". Since they indicate the speed with which the resources are being turned (or converted) into sales. Usually, the following turnover ratios are calculated,

- (i) Stock turnover ratio / Inventory turnover ratio
- (ii) Debtors turnover ratio
- (iii) Creditors turnover ratio.
- (iv) Net working capital turnover ratio
- (v) Capital turnover ratio
- (vi) Fixed assets turnover ratio

2. Liquidity Ratios

The term liquidity refers to the ability of a firm to meet the short-term obligations/requirements as and when they arise. Various liquidity ratios are available that measure the short-term solvency or financial position of a firm. These ratios are usually calculated to determine the short-term paying capacity of a concern or its ability to meet the current obligations. The various liquidity ratios are,

- (i) Current ratio
- (ii) Liquid ratio
- (iii) Absolute Liquidity Ratio.

3. Solvency Ratios

Solvency ratios are also called capital structure ratios or average ratios. Capital structure ratios are used in evaluating the long term financial position of the firm. It gives the relationship between long term debentures, preference share and equity share capital, also taking reserves and surplus into consideration.

The capital structure ratios include,

- (i) Capital gearing ratio
- (ii) Debt equity ratio

- (iii) Total investment to long-term liabilities
- (iv) Ratio of fixed assets to funded debt
- (v) Ratio of current liabilities to proprietors funds
- (vi) Ratio of reserves to equity capital.

4. Profitability Ratios

Profitability ratios indicates the profit earning capacity of the business firm.

These ratios measure management's overall effectiveness as shown by the returns generated on sales and investment. Usually, two types of profitability ratios are calculated. The chart given below shows the various types of profitability ratios,

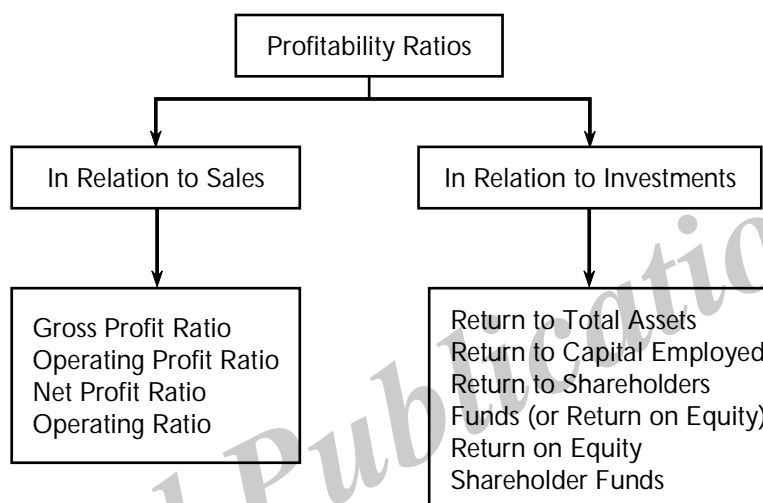


Fig.: Types of Profitability Ratios

3.4.1 Computation of Activity Ratios

Q18. What are various types of Activity Ratios?

Ans :

These ratios measure the effectiveness with which a firm uses its available resources. These ratios are also called as "Turnover Ratios". Since they indicate the speed with which the resources are being turned (or converted) into sales.

Types

1. Inventory Turnover Ratio

Every firm has to maintain a certain level of inventory of finished goods so as to be able to meet the requirements of the business. But the level of inventory should neither be too high nor too low. It is harmful to hold more inventory for the following reasons :

- (a) It unnecessarily blocks capital which can otherwise be profitably used somewhere else.
- (b) Over-stocking will require more godown space, so more rent will be paid.
- (c) There are chances of obsolescence of stocks. Consumers will prefer goods of latest design, etc.
- (d) Slow disposal of stocks will mean slow recovery of cash also which will adversely affect liquidity.
- (e) There are chances of deterioration in quality if the stocks are held for more periods.

It will therefore, be advisable to dispose off inventory as early as possible. On the other hand, too low inventory may mean loss of business opportunities. Thus, it is very essential to keep sufficient stocks in business.

Inventory turnover ratio also known as stock velocity is normally calculated as sales/average inventory or cost of goods sold/average inventory. It would indicate whether inventory has been efficiently used or not. The purpose is to see whether only the required minimum funds have been locked up in inventory. Inventory Turnover Ratio (I.T.R.) indicates the number of times the stock has been turned over during the period and evaluates the efficiency with which a firm is able to manage its inventory.

The ratio is calculated by dividing the cost of goods sold by the amount of average inventory at cost:

$$(a) \text{ Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Inventory Conversion Period

It may also be of interest to see average time taken for clearing the stocks. This can be possible by calculating inventory conversion period. This period is calculated by dividing the number of days by inventory turnover. The formula may be as :

$$\text{Inventory Conversion Period} = \frac{\text{Days in a year}}{\text{Inventory Turnover Ratio}}$$

$$\text{If 365 days are taken then:} = ? \text{ No. of days}$$

$$\text{Inventory Conversion Period} = \frac{365}{\text{Inventory Turnover Ratio}}$$

$$= ? \text{ No. of days.}$$

Interpretation

- Inventory turnover ratio measures the velocity of conversion of stock into sales.
- Usually, a high inventory turnover/Stock velocity indicates efficient management of inventory because more frequently the stocks are sold, the lesser amount of money is required to finance the inventory. A low inventory turnover ratio indicates an inefficient management of inventory.
- A low inventory turnover implies over-investment in inventories, dull business, poor quality of goods, stock accumulations, accumulation of obsolete and slow moving goods and low profits as compared to total investments.'

2. Debtor Turnover Ratio

A concern may sell goods on cash as well as on credit. Credit is one of the important elements of sales promotion. The volume of sales can be increased by following a liberal credit policy. But the effect of a liberal credit policy may result in tying up substantial funds of a firm in the form of trade debtors (or receivables, i.e., debtors plus bills receivables). Trade debtors are expected to be converted into cash within a short period and are included in current assets. Hence, the liquidity position of a concern to pay its short-term obligations in time depends upon the quality of its trade debtors.

Two kinds of ratios can be computed to evaluate the quality of debtors:

(a) Debtors/Receivables Turnover or Debtors Velocity

Debtors turnover ratio indicates the velocity of debt collection of firm. In simple words, it indicates the number of times average debtors (Receivables) are turned over during a year, thus :

$$\text{Debtors (Receivables) Turnover/Velocity} = \frac{\text{Net Credit Annual Sales}}{\text{Average Trade Debtors}}$$

Trade Debtors = Sundry Debtors + Bills Receivables and Accounts Receivables

$$\text{Average Trade Debtors} = \frac{\text{Opening Trade Debtors} + \text{Closing Trade Debtors}}{2}$$

Note:

Debtors should always be taken at gross value. No provision for bad and doubtful debts be deducted from them.

But when the information about opening and closing balances of trade debtors and credit sales is not available, then the debtors turnover ratio can be calculated by dividing the total sales by the balance of debtors (inclusive of bills receivables) given.

$$\text{Debtors Turnover Ratio} = \frac{\text{Total Sales}}{\text{Debtors}}$$

Interpretation

- Debtors velocity indicates the number of times the debtors are turned over during a year. Generally, the higher the value of debtors turnover the more efficient is the management of debtors/sales or more liquid are the debtors.
- Similarly, low debtors turnover implies inefficient management of debtors/sales and less liquid debtors. But a precaution is needed while interpreting a very high debtors turnover ratio because a very high ratio may imply a firm's inability due to lack of resources to sell on credit thereby losing sales and profits.
- There is no 'rule of thumb' which may be used as a norm to interpret the ratio as it may be different from firm to firm, depending upon the nature of business.
- This ratio should be compared with ratios of other firms doing similar business and a trend may also be found to make a better interpretation of the ratio.

(b) Average Collection Period Ratio

The average collection period represents the average number of days for which a firm has to wait before its receivables are converted into cash. The ratio can be calculated as follows :

$$(i) \quad \text{Average Collection Period} = \frac{\text{Average Trade Debtors (Drs + B/R)}}{\text{Sales per day}}$$

$$(ii) \quad \text{Sales per day} = \frac{\text{Net Sales}}{\text{No. of Working Days}}$$

$$\text{or Average collection period} = \frac{\frac{\text{Average Trade Debtors}}{\text{Net Sales}}}{\text{No. of Working Days}}$$

3. Creditor Turnover Ratio

In the course of business operations, a firm has to make credit purchases and incur short-term liabilities. A supplier of goods, i.e., creditor, is naturally interested in finding out how much time the firm is likely to take in repaying its trade creditors. The analysis for creditors turnover is basically the same as of debtors turnover ratio except that in place of trade debtors, the trade creditors are taken as one of the components of the ratio and in place of average daily sales, average daily purchases are taken as the other component of the ratio. Same as debtors turnover ratio, creditors turnover ratio can be calculated in two forms:

$$(a) \text{ Creditors/Payable Turnover Ratio} = \frac{\text{Net Credit Annual Purchases}}{\text{Average Trade Creditors}}$$

If information about credit purchases is not available, the figure of total purchases may be taken as the numerator and the trade creditors include sundry creditors and bills payables. If opening and closing balances of creditors are not known, the balance of creditors given may be taken to find out the ratio. The ratio indicates the velocity with which the creditors are turned over in relation to purchases. Generally, higher the creditors' velocity better it is or otherwise lower the creditors' velocity, less favourable are the results.

$$(b) \text{ Average Payment Period Ratio} = \frac{\text{Average Trade Creditors (Creditors + Bills Payable)}}{\text{Average Daily Purchases}}$$

$$\text{Average Daily Purchases} = \frac{\text{Annual Purchases}}{\text{No. of Working Days in a Year}}$$

Interpretation

- The average payment period ratio represents the average number of days taken by the firm to pay its creditors.
- Generally, lower the ratio, the better is the liquidity position of the firm and higher the ratio, less liquid is the position of the firm.
- But a higher payment period also implies greater credit period enjoyed by the firm and consequently larger the benefit reaped from credit suppliers. But one has to be careful in interpreting this ratio, as a higher ratio may also imply lesser discount facilities availed or higher prices paid for the goods purchased on credit.
- To make correct interpretation of this ratio, a comparative analysis of different firms in the same industry and the trend may be found for various years.

4. Working Capital Turnover Ratio

Working Capital of a concern is directly related to sales, the current assets like debtors, bills receivables, cash, stock etc. change with the increase or decrease in sales. The working capital is taken as : Working Capital = Current Assets - Current Liabilities

Working Capital turnover ratio indicates the velocity of the utilisation of net working capital. This ratio indicates the number of times the working capital is turned over in the course of a year. This ratio measures the efficiency with which the working capital is being used by a firm. A higher ratio indicates efficient utilisation of working capital and a low ratio indicates otherwise. But a very high working capital turnover ratio is not a good situation for any firm and hence care must be taken while interpreting the

ratio. This ratio can at best be used by making of comparative and trend analysis for different firms in the same industry and for various periods. This ratio can be calculated as :

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Average Working Capital}}$$

$$\text{Average Working Capital} = \frac{\text{Opening Working Capital} + \text{Closing Working Capital}}{2}$$

If the figure of cost of sales is not given, then the figure of sales can be used instead. On the other hand if opening working capital is not disclosed, then working capital at the year end will be used.

In that case the ratio will be :

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of Sales (or, Sales)}}{\text{Net Working Capital}}$$

If the term working capital is used in broad sense as gross working capital, then :

$$\text{Gross Working Capital Turnover Ratio} = \frac{\text{Cost of Sales (or, Sales)}}{\text{Gross Working Capital}}$$

(Current Assets Turnover Ratio)

5. Capital Turnover Ratio

The capital turnover ratio is discussed as follows,

- (a) **Meaning:** This ratio establishes a relationship between net sales and capital employed.
- (b) **Objective:** The objective of computing this ratio is to determine the efficiency with which the capital employed is utilized.
- (c) **Components:** The components of capital turnover ratio are,
 - (i) **Net sales :** It means gross sales minus sales returns.
 - (ii) **Capital employed :** It means long-term debt plus shareholder's funds.
- (d) **Computation:** This ratio is computed by dividing the net sales by the capital employed. This ratio is usually expressed at times.

Formula

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital Employed}}$$

6. Fixed Assets Turnover Ratio

Following are the explanation of fixed assets turnover ratios,

- (a) **Meaning:** This ratio establishes a relationship between net sales and fixed sales.
- (b) **Objective:** The objective of computing this ratio is to determine the efficiency with which the fixed assets are utilized.

(c) **Components:** The following are the components of fixed assets turnover ratio,

- (i) Net sales which means gross sales minus sales returns.
- (ii) Net Fixed (operating) Assets are obtained by deducting depreciation from fixed assets.

(d) **Computations:** This ratio is computed by dividing the net sales by the net fixed assets. This ratio is usually expressed as x number of times. In the form of a formula, this ratio may be expressed as under :

Formula

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Net Fixed Assets}}$$

PROBLEMS

11. From the following particulars, find out stock turnover ratio sales ` 3,20,000, Gross profit 25% on sales, opening stock ` 31,000, closing stock ` 29,000.

Sol.:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{Gross Profit}$$

$$\text{Gross Profit} = 25\% \text{ on Sales}$$

$$3,20,000 \times \frac{25}{100} = 80,000$$

$$\begin{aligned} \text{Cost of Goods Sold} &= 3,20,000 - 80,000 \\ &= 2,40,000 \end{aligned}$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$= \frac{31,000 + 29,000}{2} = \frac{60,000}{2} = 30,000$$

$$\therefore \text{Stock Turnover Ratio} = \frac{2,40,000}{30,000} = 8 \text{ times.}$$

12. Compute Stock Turnover Ratio from the following:

Sales	` 4,30,000
Gross Profit	` 70,000
Opening stock	` 90,000
Closing stock	` 30,000

Sol :

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\begin{aligned}\text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= 4,30,000 - 70,000\end{aligned}$$

$$\therefore \text{Cost of Goods Sold} = 3,60,000$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$= \frac{90,000 + 30,000}{2}$$

$$= \frac{1,20,000}{2}$$

$$\therefore \text{Average Stock} = 60,000$$

$$\text{Stock Turnover Ratio} = \frac{3,60,000}{60,000}$$

$$\therefore \text{Stock Turnover Ratio} = 6 \text{ times.}$$

3.4.2 Computation of Liquidity Ratios

Q19. What is Liquidity Ratios? Explain different types of Liquidity Ratios.

Ans :

The term liquidity refers to the ability of a firm to meet the short-term obligations/requirements as and when they arise. Various liquidity ratios are available that measure the short-term solvency or financial position of a firm. These ratios are usually calculated to determine the short-term paying capacity of a concern or its ability to meet the current obligations.

To measure the liquidity of a firm, the following ratios can be calculated:

- (i) Current Ratio
- (ii) Quick or Acid Test or Liquid Ratio
- (iii) Absolute Liquid Ratio or Cash Position Ratio

(i) Current Ratio

Current ratio may be defined as the relationship between current assets and current liabilities. This ratio, also known as working capital ratio, is a measure of general liquidity and is most widely used to make the analysis of a short-term financial position or liquidity of a firm. It is calculated by dividing the total of current assets by total of the current liabilities.

$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$ <p>Or Current Assets : Current Liabilities</p>
--

The two basic components of this ratio are : current assets and current liabilities. Current assets include cash and those assets which can be easily converted into cash within a short period of time generally, one year, such as marketable securities, bills receivables, sundry debtors, inventories, work-in-progress, etc. Prepaid expenses should also be included in current assets because they represent payments made in advance which will not have to be paid in near future. Current Liabilities are those obligations

which are payable within a short period of generally one year and include outstanding expenses, bills payables, sundry creditors, accrued expenses, short-term advances, income-tax payable, dividend payable, etc. Bank overdraft should also generally be included in current liabilities because it represents short-term arrangement with the bank and is payable within a short period. But where bank overdraft is permanent or long-term arrangement with the bank, it should be excluded. The following table gives the components of current ratio.

Current Assets

1. Cash in Hand
2. Cash at Bank
3. Marketable Securities (Short-term)
4. Short-term Investments
5. Bills Receivable
6. Sundry Debtors
7. Inventories (stocks)
8. Work-in-process
9. Prepaid Expenses

Current Liabilities

1. Outstanding Expenses/Accrued Expenses
2. Bills Payable
3. Sundry Creditors
4. Short-term Advances
5. Income-tax Payable
6. Dividends Payable
7. Bank Overdraft (if not a permanent arrangement)

(ii) Quick or acid test or liquid ratio

Quick Ratio, also known as Acid Test or Liquid Ratio, is a more rigorous test of liquidity than the current ratio. The term 'liquidity' refers to the ability of a firm to pay its short-term obligations as and when they become due. The two determinants of current ratio, as a measure of liquidity, are current assets and current liabilities. Current assets include inventories and prepaid expenses which are not easily convertible into cash within a short period. Quick ratio may be defined as the relationship between quick/liquid assets and current or liquid liabilities. An asset is said to be liquid if it can be converted into cash within a short period without loss of value. In that sense, cash in hand and cash at bank are the most liquid assets. The other assets which can be included in the liquid assets are bills receivable, sundry debtors, marketable securities and short-term or temporary investments. Inventories cannot be termed to be liquid asset because they cannot be converted into cash immediately without a sufficient loss of value. In the same manner, prepaid expenses are also excluded from the list of quick/liquid assets because they are not expected to be converted into cash. The quick ratio can be calculated by dividing the total of the quick assets by total current liabilities. Thus,

$$\text{Quick/Liquid or Acid Test Ratio} = \frac{\text{Quick or Liquid Assets}}{\text{Current Liabilities}}$$

(iii) Absolute Liquid Ratio or Cash Ratio

Although receivables, debtors and bills receivable are generally more liquid than inventories, yet there may be doubts regarding their realisation into cash immediately or in time. Hence, some authorities are of the opinion that the absolute liquid ratio should also be calculated together with current ratio and acid test ratio so as to exclude even receivables from the current assets and find out the absolute liquid assets.

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

(or)

$$\text{Cash Ratio} = \frac{\text{Cash and Bank} + \text{Short term Securities}}{\text{Current Liabilities}}$$

PROBLEMS

13. The following is the Balance Sheet of New India Ltd., for the year ending Dec. 31, 2012

Particulars	Note No.	
1. Equity and Liabilities		
Shareholders Funds		
Share Capital:		
Equity Share Capital		10,00,000
Preference Share Capital		5,00,000
Non-current Liabilities:		
8% Debentures		2,00,000
Long-term Loan		1,00,000
Current Liabilities		
Bills Payable		60,000
Sundry Creditors		70,000
Bank Overdraft		30,000
Outstanding Expenses		5,000
Total		19,65,000
II. Assets		
Non-current Assets :		
Tangible : Fixed Assets :		
Land and Building	6,50,000	
Plant	8,00,000	
Furniture and Fixture	1,50,000	

Intangible Assets :		
Goodwill		1,00,000
Current Assets :		
Bills Receivables		70,000
Sundry Debtors		90,000
Stock		30,000
Bank Balance		45,000
Short-term Investments		25,000
Prepaid Expenses		5,000
		19,65,000

From the balance sheet calculate :

- Current Ratio
- Acid Test Ratio
- Absolute Liquid Ratio
- Comment on these ratios.

Sol :

$$\begin{aligned}
 \text{(a) Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\
 \text{Current Assets} &= ₹ 70,000 + ₹ 90,000 + ₹ 45,000 + ₹ 25,000 + ₹ 5,000 + ₹ 30,000 \\
 &= ₹ 2,65,000 \\
 \text{Current Liabilities} &= ₹ 60,000 + ₹ 70,000 + ₹ 30,000 + ₹ 5,000 = ₹ 1,65,000 \\
 &= ₹ 2,65,000 \\
 \text{Current Ratio} &= \frac{₹ 2,65,000}{₹ 1,65,000} = 1.61
 \end{aligned}$$

Comment

Current ratio of the Company is not satisfactory because the ratio (1.61) is much below the accepted standard of 2 : 1.

$$\begin{aligned}
 \text{(b) Acid Test Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\
 \text{Liquid Assets} &= ₹ 70,000 + ₹ 90,000 + ₹ 45,000 + ₹ 25,000 = ₹ 2,30,000 \\
 \text{Stock and Prepaid Expenses have been excluded from current assets in order to arrive at liquid assets.} \\
 \text{Current Liabilities} &= ₹ 1,65,000 \\
 \text{Acid Test Ratio} &= \frac{₹ 2,30,000}{₹ 1,65,000} = 1.39
 \end{aligned}$$

Comment

Acid-test ratio, on the other hand, is more than the normal standard of 1:1. Liquid assets are quite sufficient to provide a cover to the current liabilities.

$$(c) \text{ Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

$$\text{Absolute Liquid Assets} = ₹ 45,000 + ₹ 25,000 = ₹ 70,000$$

$$\text{Absolute Liquid Ratio} = \frac{₹ 70,000}{₹ 1,65,000} = 0.42$$

Comment

The more rigorous ratio i.e. absolute liquid ratio is slightly low because it is 0.42 whereas the accepted standard is 0.5. In all, the company needs to improve its short-term financial position.

14. Following information is given to you.

$$(i) \text{ Current Ratio} = 2.5$$

$$(ii) \text{ Working Capital} = ₹ 90,000.$$

Find out : (a) Current Assets, and (b) Current Liabilities.

Sol :

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\begin{aligned} \text{Current Ratio} &= \text{Current Assets} : \text{Current Liabilities} \\ &= 2.5 : 1 \end{aligned}$$

Let current liabilities be x then current assets will be $2.5 \times \text{Working Capital}$

$$= 2.5 \times ₹ 90,000$$

$$₹ 90,000 = 1.5x$$

$$x = \frac{₹ 90,000}{1.5} = ₹ 60,000$$

$$(a) \text{ So Current Liabilities} = ₹ 60,000$$

$$\begin{aligned} (b) \text{ Current Assets} &= ₹ 60,000 \times 2.5 \\ &= ₹ 1,50,000 \end{aligned}$$

15. X Ltd. has a current ratio of 4.5:1 and acid test ratio of 3:1. If the inventory is ₹ 24,000, find out its current liabilities.

Sol :

Give,

$$\text{Current Ratio} = 4.5 : 1$$

$$\text{Liquid Ratio} = 3 : 1$$

Let current liabilities be 'x', then,

$$\text{Current Assets} = 4.5x,$$

$$\text{Liquid Assets} = 3x$$

$$\text{Inventory} = \text{Current Assets} - \text{Liquid Assets}$$

$$24,000 = 4.5x - 3x$$

$$24,000 = 1.5x$$

$$x = \frac{24,000}{1.5}$$

$$x = 16,000$$

$$\therefore \text{Current Liabilities} = ₹ 16,000$$

- 16. A firm's current assets and current liabilities are ₹ 24,000 and ₹ 6,000 respectively. How much can it borrow from a bank without reducing current ratio below 1.5?**

Sol :

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= \frac{24,000}{6,000} = 4$$

Let the amount of borrowings = x

Then, current Assets = ₹ 24,000 + x

Current Liabilities = ₹ 6,000 + x

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$1.5 = \frac{24,000 + x}{6,000 + x}$$

$$1.5(6000 + x) = 24,000 + x$$

$$9000 + 1.5x = 24,000 + x$$

$$1.5x - x = 24,000 - 9,000$$

$$.5x = ₹ 15,000$$

$$x = \frac{15,000}{.5} = ₹ 30,000$$

Hence, the firm can borrow from a bank (as a current liability) up to ₹ 30,000 without reducing its current ratio below 1.5.

3.4.3 Computation of Solvency Ratios

Q20. What is Solvency? Explain different types of Solvency Ratios.

Ans :

Meaning

The term 'solvency' refers to the ability of a concern to meet its long term obligations. The long-term indebtedness of a firm includes debenture holders, financial institutions providing medium and long-term loans and other creditors selling goods on instalment basis. The long-term creditors of a firm are primarily interested in knowing the firm's ability to pay regularly interest on long-term borrowings, repayment of the principal amount at the maturity and the security of their loans. Accordingly, long-term solvency ratios indicate a firm's ability to meet the fixed interest and costs and repayment schedules associated with its long-term borrowings.

Types

1. Capital Gearing Ratio

The ratio of equity share capital and reserves and surpluses to preference share capital and other fixed interest bearing loans is called capital gearing ratio.

$$\begin{aligned}\text{Capital Gearing Ratio} &= \frac{\text{Equity share capital} + \text{Reserves \& surplus}}{\text{Preference capital} + \text{Long-term debt bearing fixed interest}} \\ &\quad (\text{or}) \\ &= \frac{\text{Fixed income bearing funds}}{\text{Equity shareholders funds}} \\ &\quad (\text{or}) \\ &= \frac{\text{Fixed income bearing funds}}{\text{Total capital employed}}\end{aligned}$$

If numerator exceeds denominator the firm is said to be low geared, otherwise it is highly geared.

2. Debt-equity Ratio

It is the ratio of external equities or outsiders funds to the shareholders funds or internal funds.

$$\begin{aligned}&= \frac{\text{Long - term Debt}}{\text{Shareholder's Funds/Equity}} \\ &\quad (\text{or}) \\ &= \frac{\text{Outsiders funds}}{\text{Shareholders funds/Equity}} \\ &\quad (\text{or}) \\ &= \frac{\text{External equities}}{\text{Internal equities}}\end{aligned}$$

3. Total Investment of Long-term Liabilities

It is the ratio of the total long term funds to long-term liabilities.

$$= \frac{\text{Shareholders fund} + \text{Long-term liabilities}}{\text{Long-term liabilities}}$$

4. Ratio of Fixed Assets to Funded Debts

It is the ratio of fixed assets to the funded debt which is essential for the long creditors.

$$= \frac{\text{Fixed assets}}{\text{Funded debts}}$$

5. Ratio of Current Liabilities to Proprietor's Funds

The ratio of current liabilities to the proprietor's funds i.e., the short-term borrowings to the long-term funds raised by proprietors.

$$= \frac{\text{Current liabilities}}{\text{Proprietors funds}}$$

6. Ratio of Reserves to Equity Capital

It gives the profits that firm retains for future growth. It is the ratio of reserves to the equity share capital.

$$= \frac{\text{Reserves}}{\text{Equity share capital}} \times 100$$

PROBLEMS

17. From the following Balance Sheet find out,

- (a) Debt equity ratio
- (b) Current ratio and
- (c) Liquid ratio

Balance Sheet of X & Co. Ltd. as on 31-12-2011

Liabilities		Assets	
Share capital	2,00,000	Fixed assets	3,60,000
9% Preference share capital	1,00,000	Stock	50,000
8% Debentures	1,00,000	Debtors	1,10,000
Profit and Loss A/c	40,000	Bills receivable	6,000
Creditors	90,000	Bank	4,000
	5,30,000		5,30,000

Sol:

(a) Debt Equity Ratio

$$\text{Debt Equity Ratio} = \frac{\text{Long term Debts}}{\text{Shareholder's Fund or Equity}}$$

$$\text{Long-term Debts} = 8\% \text{ Debentures} = 1,00,000$$

$$\text{Shareholder's Fund/Equity} = \text{Equity share capital} + \text{Preference share capital} + \text{Reserves \& surplus} + \text{P \& L A/c.}$$

$$= 2,00,000 + 1,00,000 + 40,000$$

$$= 3,40,000$$

$$\therefore \text{Debt Equity Ratio} = \frac{1,00,000}{3,40,000}$$

$$= 0.29 : 1.$$

(b) Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current Assets} = \text{Stock} + \text{Debtors} + \text{Bills Receivable} + \text{Bank}$$

$$= 50,000 + 1,10,000 + 6,000 + 4,000$$

$$= 1,70,000$$

$$\text{Current liabilities} = 90,000$$

$$\therefore \text{Current Ratio} = \frac{1,70,000}{90,000}$$

$$= 1.89 : 1.$$

(c) Liquid Ratio

$$\text{Liquid/Quick/Acid Test Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

$$\text{Quick Assets} = \text{Current Assets} - \text{Stock}$$

$$= 1,70,000 - 50,000$$

$$= 1,20,000$$

$$\text{Quick Liabilities} = \text{Current Liabilities} - (\text{Bank overdraft and Cash Credit (if only)})$$

$$= 90,000 - 0$$

$$= 90,000$$

$$\therefore \text{Liquid/Quick/Acid Test Ratio} = \frac{1,20,000}{90,000}$$

$$= 1.33 \text{ times}$$

3.4.4 Computation of Profitability Ratios

Q21. What is Profitability Ratios? Explain different types of profitability ratios.

Ans :

Meaning

The Primary objective of a business undertaking is to earn profits. Profit earning is considered essential for the survival of the business.

In the words of Lord Keynes, "Profit is the engine that drives the business enterprise". A business needs profits not only for its existence but also for expansion and diversification. The investors want an adequate return on their investments, workers want higher wages, creditors want higher security for their interest and loan and so on. A business enterprise can discharge its obligations to the various segments of the society only through earning of profits. Profits are, thus, a useful measure of overall efficiency of a business.

Profits to the management are the test of efficiency and a measurement of control ; to owners, a measure of worth of their investment; to the creditors, the margin of safety ; to employees, a source of fringe benefits ; to Government, a measure of tax-paying capacity and the basis of legislative action ; to customers, a hint to demand for better quality and price cuts ; to an enterprise, less cumbersome source of finance for growth and existence and finally to the country, profits are an index of economic progress. Profitability ratios are calculated to measure the overall efficiency of the business. Generally, profitability ratios are calculated either in relation to sales or in relation to investment.

Types

I) In Relation to sales

1. Gross Profit Ratio

Gross profit ratio measures the relationship of gross profit to net sales and is usually represented as percentage. Thus, it is calculated by dividing the gross profit by sales :

$$\begin{aligned} \text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{\text{Sales} - \text{Cost of Goods Sold}}{\text{Sales}} \times 100 \end{aligned}$$

Interpretation

The gross profit ratio indicates the extent to which selling prices of goods per unit may decline without resulting in losses on operations of a firm. It reflects the efficiency with which a firm produces its products. As the gross profit is found by deducting cost of goods sold from the net sales, higher the gross ratio (G/ P ratio) better the result.

2. Operating Ratio

Operating ratio establishes the relationship between cost of goods sold and other operating expenses on the one hand and the sales on the other. In other words, it measures the cost of operations per rupee of sales. The ratio is calculated by dividing operating costs with the net sales and its generally represented as a percentage.

$$\begin{aligned} \text{Operating Ratio} &= \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100 \\ &= \frac{\text{Cost of goods sold} + \text{Operating expenses}}{\text{Net Sales}} \times 100 \end{aligned}$$

The two basic elements of this ratio are operating cost and net sales. Operating cost can be found by adding operating expenses to the cost of goods. Operating expenses consist of :

- (a) Administrative and office expenses like rent, salaries to staff, insurance, directors' fees, etc.
- (b) Selling and distribution expenses like advertisement, salaries of salesmen, etc.

Interpretation

Operating ratio indicates the percentage of net sales that is consumed by operating cost. Obviously, higher the operating ratio, the less favourable it is, because, it would have, a small margin (operating profit) to cover interest, income-tax, dividend and reserves. There is no rule of thumb for this ratio as it may differ from firm to firm depending upon the nature of its business and its capital structure. However, 75 to 85 per cent may be considered to be a good ratio in case of a manufacturing undertaking. To get a better idea of the ratio, either a trend should be found by calculating operating ratio for a number of years or a comparison of the firm should be made with another in a similar business or in the same industry.

3. Operating Profit Ratio

This ratio is calculated by dividing operating profit by sales. Operating profit is calculated as :

Operating Profit = Net Sales – Operating Cost

(or)

= Net Sales – (Cost of goods sold + Administrative and Office Expenses + Selling and Distributive Expenses)

Operating Profit can also be calculated as :

Operating Profit = Net Profit + Non-operating Expenses – Non-operating income

$$\text{So, Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Sales}} \times 100$$

This ratio can also be calculated as :

Operating Profit Ratio = 100 – Operating Ratio.

4. Net Profit Ratio

Net Profit ratio establishes a relationship between net profit (after taxes) and sales, and indicates the efficiency of the management in manufacturing, selling, administrative and other activities of the firm. This ratio is the overall measure of firm's profitability and is calculated as :

$$(i) \quad \text{Net Profit Ratio} = \frac{\text{Net Profit after tax}}{\text{Net Sales}} \times 100$$

$$(ii) \quad \text{Net Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

The two basic elements of the ratio are net profits and sales. The net profits are obtained after deducting income-tax and, generally, non-operating incomes and expenses are excluded from the net profits for calculating this ratio. Thus, incomes such as interest on investment outside the business, profit on sale of fixed assets, etc. are excluded. The ratio is very useful as if the profit is not sufficient, the firm shall not be able to achieve a satisfactory return on its investment. This ratio also indicates the firm's capacity to face adverse economic conditions such as price competition, low demand, etc. Obviously,

higher the ratio, the better is the profitability. But while interpreting the ratio, it should be kept in mind that the performance of profits must also be seen in relation to investments or capital of the firm and not only in relation to sales.

II) In Relation to investments

1. Return on Total Assets

(a) Meaning

This ratio measures a relationship between net profit before interest and tax and total assets.

(b) Objective

The objective of computing this ratio is to find out how efficiently the total assets have been used by the management.

(c) Components

The two components of return on total assets are,

- (i) Net profit before interest and tax.
- (ii) Total assets (excluding fictitious assets) Example: Preliminary expenses.

(d) Computation

This ratio is computed by dividing the net profit before interest and tax by total assets. This ratio is expressed as a percentage.

Formula

Return on total assets,

$$= \frac{\text{Net profit before interest and tax}}{\text{Total assets}} \times 100$$

(e) Interpretation

This ratio indicates the firm's ability to generate profit per rupee of total assets. Higher the ratio, the more efficient of utilization of total assets.

2. Return on Capital Employed

(a) Meaning

This ratio measures a relationship between net profit before interest and tax and capital employed.

(b) Objective

The objective of computing this ratio is to find out how efficiently the long-term funds supplied by the creditors and shareholders have been used.

(c) Components

The following are the components of return on capital employed,

- (i) Net profit before interest and tax
- (ii) Capital employed which refers to long-term funds supplied by the long-term creditors and shareholders. It comprises the long-term debt and shareholder's funds.

(d) Computation

This ratio is computed by dividing the net profit before interest and tax by capital employed. It is expressed as a percentage.

Formula

Return on capital employed,

$$= \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100$$

Generally return on capital employed is taken as return on investments.

(e) Interpretation

This ratio indicates the firm's ability of generating profit per rupee of capital employed. Higher the ratio, the more efficient the management and utilization of capital employed.

3. Return on Shareholder's Funds or Return on Equity**(a) Meaning**

This ratio measures a relationship between net profit after interest, tax and shareholder's funds.

(b) Objective

The objective of computing this ratio to find out how efficiently the funds supplied by the equity shareholders have been used.

(c) Components

The components of return on equity are as follows,

- (i) Net profit after interest and tax
- (ii) Shareholder's funds which mean equity share capital plus preference share capital plus reserves and surplus minus fictitious assets (if any).

(d) Computation

This ratio is computed by dividing the net profit after interest and tax by shareholder's funds. It is expressed as a percentage.

Formula

Return on shareholder's funds,

$$= \frac{\text{Net profit after interest and tax}}{\text{Shareholder's funds}} \times 100$$

(e) Interpretation

This ratio indicates the firm's ability of generating profit per rupee of shareholder's funds. Higher the ratio, the more efficient the management and utilization of shareholder's funds.

4. Return on Equity Shareholder's Funds**(a) Meaning**

This ratio measures a relationship between net profit after interest tax preference dividend and equity shareholder's funds.

(b) Objective

The objective of computing this ratio is to find out how efficiently the funds supplied by the equity shareholders have been used.

(c) Components

The following are components of return of equity shareholders funds,

- (i) Net profit after interest, tax and preference dividend.
- (ii) Equity shareholder's funds which means equity share capital plus reserves and surplus minus fictitious assets (if any).

(d) Computation

This ratio is computed by dividing the net profit after interest, tax and preference dividend by shareholder's funds. It is expressed as a percentage.

Formula

Return on equity shareholder's funds,

Net profit after interest, tax and

$$= \frac{\text{Preference dividend}}{\text{Equity shareholder's funds}} \times 100$$

(e) Interpretation

This ratio indicates the firm's ability of generating profit per rupee of equity shareholder's funds. Higher the ratio, the more efficient the utilization of equity shareholder's funds.

PROBLEMS

18. Following is the Trading and Profit and Loss Account of a firm for the year ended 31st March 2015:

Trading and Profit and Loss Account

Particulars		Particulars	
To Opening Stock	35,000	By Sales	4,00,000
To Purchases	2,25,000	By Stock at the end	50,000
To Wages	6,000		
To Gross Profit c/d	84,000		
	4,50,000		4,50,000
To Administration Expenses	10,000	By Gross Profit b/d	1,84,000
To Selling and Distribution Expenses	14,000		
To Loss on Sale of Plant	10,000		
To Net Profit	1,50,000		
	1,84,000		1,84,000

Calculate the following ratios:

- (i) Gross Profit Ratio
- (ii) Net Profit Ratio
- (iii) Net Operating Profit Ratio
- (iv) Operating Ratio
- (v) Expenses Ratio.

Sol:

(June-18)

(i) Gross Profit Ratio

$$\begin{aligned}\text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{1,84,000}{4,00,000} \times 100 \\ &= 0.46 \times 100 \\ &= 46\%\end{aligned}$$

(ii) Net Profit Ratio

$$\begin{aligned}\text{Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{1,50,000}{4,00,000} \times 100 \\ &= 0.375 \times 100 \\ &= 37.5\%\end{aligned}$$

(iii) Net Operating Profit Ratio

$$\text{Net Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

$$\text{Net Operating Profit} = \text{Net Sales} - \text{Total Operating Cost}$$

$$\text{Total Operating Cost} = \text{Cost of Goods Sold} + \text{Operating Expenses}$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{Gross Profit}$$

$$= 4,00,000 - 1,84,000$$

$$= 2,16,000$$

$$\text{Operating Expenses} = \text{Administrative Expenses} + \text{Selling and Distribution Expenses}$$

$$= 10,000 + 14,000 = 24,000$$

$$\text{Operating Cost} = \text{Cost of Goods Sold} + \text{Operating Expenses}$$

$$\text{Operating Cost} = 2,16,000 + 24,000$$

$$= 2,40,000$$

$$\text{Net Operating Profit} = \text{Net Sales} - \text{Operating Cost}$$

$$= 4,00,000 - 2,40,000$$

$$= 1,60,000$$

$$\begin{aligned}
 \therefore \text{Net Operating Profit Ratio} &= \frac{1,60,000}{4,00,000} \times 100 \\
 &= 0.4 \times 100 \\
 &= 40\%
 \end{aligned}$$

(iv) Operating Ratio

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sale}} \times 100$$

$$\begin{aligned}
 \therefore \text{Operating Ratio} &= \frac{2,40,000}{4,00,000} \times 100 \\
 &= 0.6 \times 100 \\
 &= 60\%
 \end{aligned}$$

(v) Expenses Ratio

$$\begin{aligned}
 \text{Expenses Ratio} &= \frac{\text{Administrative Expenses}}{\text{Net Sales}} \times 100 \\
 &= \frac{10,000}{4,00,000} \times 100 \\
 &= 0.025 \times 100 \\
 &= 2.5\%
 \end{aligned}$$

19. Calculate :

- (i) Gross Profit Ratio
- (ii) Net Profit Ratio
- (iii) Operating Ratio
- (iv) Operating Profit Ratio.

Particulars	
Sales	10,00,000
Cost of goods sold	6,00,000
Operating Expenses	2,00,000
Non-operating Expenses	40,000

*Sol.:***(Imp.)****(i) Gross Profit Ratio**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$\text{Gross Profit} = \text{Sales} - \text{Cost of Goods Sold}$$

$$= ₹ 10,00,000 - ₹ 6,00,000$$

$$\therefore \text{Gross Profit} = ₹ 4,00,000$$

$$\text{Gross Profit Ratio} = \frac{4,00,000}{10,00,000} \times 100$$

$$\text{Gross Profit Ratio} = 40\%$$

(ii) Net Profit Ratio

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$\text{Net Profit} = \text{Gross Profit} - (\text{Operating Expenses} + \text{Non-Operating Expenses})$$

$$= ₹ 4,00,000 - (2,00,000 + 40,000)$$

$$= ₹ 4,00,000 - ₹ 2,40,000$$

$$\text{Net Profit} = ₹ 1,60,000$$

$$\text{Net Profit Ratio} = \frac{1,60,000}{10,00,000} \times 100$$

$$\therefore \text{Net Profit Ratio} = 16\%$$

(iii) Operating Ratio

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$\text{Operating Cost} = \text{Cost of Goods Sold} + \text{Operating Expenses}$$

$$= ₹ 6,00,000 + ₹ 2,00,000$$

$$\therefore \text{Operating Cost} = ₹ 8,00,000$$

$$\text{Operating Ratio} = \frac{8,00,000}{10,00,000} \times 100$$

$$\therefore \text{Operating Ratio} = 80\%$$

(iv) Operating Profit Ratio

$$\text{Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

$$\text{Net Operating Profit} = \text{Sales} - \text{Operating Cost}$$

$$= ₹ 10,00,000 - ₹ 8,00,000$$

$$\text{Net Operating Profit} = ₹ 2,00,000$$

$$\text{Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{2,00,000}{10,00,000} \times 100$$

$$\therefore \text{Operating Profit Ratio} = 20\%$$

20. Following is the Profit and Loss Account to Electro Matrix Ltd. for the fed 31st December, 2011:

Particulars		Particulars	
To Opening Stock	1,00,000	By Sales	5,60,000
To Purchases	3,50,000	By Closing Stock	1,00,000
To Wages	9,000		
To Gross Profit c/d	2,01,000		
	6,60,000		6,60,000
To Administrative expenses	20,000	By Gross Profit b/d	2,01,000
To Selling and Distribution Expenses	89,000	By Interest on Investments (Outside business)	10,000
To Non-operating expenses	30,000	By Profit on Sale of Investments	8,000
To Net Profit	80,000		
	2,19,000		2,19,000

You are required to calculate :

1. Gross Profit Ratio
2. Net Profit Ratio
3. Operating Ratio
4. Operating Profit Ratio
5. Administrative Expenses Ratio

Sol.:

(Imp.)

$$1. \text{ Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{2,01,000}{5,60,000} \times 100 = 35.9\%$$

$$2. \text{ Net Profit Ratio} = \frac{\text{Net Profit (after tax)}}{\text{Net Sales}} \times 100$$

$$= \frac{80,000}{5,60,000} \times 100 = 14.3\%$$

$$\text{Alternatively, Net Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}}$$

$$= \frac{(80,000 + 30,000) - (10,000 + 8,000)}{5,60,000} \times 100$$

$$= \frac{92,000}{5,60,000} \times 100 = 16.4\%$$

$$3. \text{ Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Net Sales}}$$

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchases} + \text{Wages} - \text{Closing Stock}$$

$$= 1,00,000 + 3,50,000 + 9,000 - 1,00,000 = ₹ 3,59,000$$

$$\text{Operating Expenses} = \text{Administrative} + \text{Selling \& Distribution expenses}$$

$$= ₹ 20,000 + 89,000 = ₹ 1,09,000$$

$$\text{Operating Ratio} = \frac{3,59,000 + 1,09,000}{5,60,000} \times 100$$

$$= \frac{4,68,000}{5,60,000} \times 100 = 83.6\%$$

$$4. \text{ Operating Profit Ratio} = 100 - \text{Operating Ratio}$$

$$= 100 - 83.6\% = 16.4\%$$

$$5. \text{ Administrative Expense Ratio} = \frac{\text{Administrative Expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{20,000}{5,60,000} \times 100 = 3.6\%$$

21. The following is the Trading and P&L A/c for the year ended 31st March, 2013 and the Balance Sheet on that date of ABC Ltd.

Particulars	₹	Particulars	₹
To Opening Stock	9,950	By Sales	85,000
To Purchases	54,525	By Closing Stock	14,900
To Wages	1,425		
To Gross Profit	34,000		
	99,900		99,900
To Administration Expenses	15,000	By Gross Profit	34,000
To Selling expenses	3,000	By Interest	300
To Financial expenses	1,500	By Profit on sale of shares	600
To Loss on sale of Assets	400		
To Net Profit	15,000		
	34,900		34,900

Balance Sheet

Liabilities		Assets	
Share Capital	20,000	Land & Buildings	15,000
Reserves	9,000	Plant & Machinery	8,000
Current Liabilities	13,000	Stock	14,900
P&L A/c	6,000	Debtors	7,100
Cash at Bank	3,000		
	48,000		48 000

Calculate :

- (i) Gross profit ratio
- (ii) Net profit ratio
- (iii) Operating ratio
- (iv) Current ratio
- (v) Acid test ratio
- (vi) Stock turnover ratio.

Sol :

(Imp.)

(i) Gross Profit Ratio

$$\begin{aligned}
 \text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\
 &= \frac{34000}{85000} \times 100 \\
 &= 0.4 \times 100 \\
 &= 40\%
 \end{aligned}$$

(ii) Net Profit Ratio

$$\begin{aligned}
 \text{Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \\
 &= \frac{15000}{85000} \times 100 \\
 &= 17.65\%
 \end{aligned}$$

(iii) Operating Ratio

$$\begin{aligned}
 \text{Operating Ratio} &= \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100 \\
 \text{Operating Cost} &= \text{Cost of Goods Sold} + \text{Operating Expenses} \\
 \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\
 &= 85,000 - 34,000 \\
 &= 51,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Operating Expenses} &= \text{Administrative Expenses} + \text{Selling Expenses} + \text{Financial Expenses} \\
 &= 15,000 + 3,000 + 1,500 \\
 &= 19,500
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{Operating Cost} &= 51,000 + 19,500 \\
 &= 70,500
 \end{aligned}$$

$$\begin{aligned}
 \text{Operating Ratio} &= \frac{70,500}{85,000} \times 100 \\
 &= 82.94 \%
 \end{aligned}$$

(iv) Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}
 \text{Current Assets} &= \text{Stock} + \text{Debtors} + \text{Cash at Bank} \\
 &= 14,900 + 7,100 + 3,000 = 25,000
 \end{aligned}$$

$$\text{Current Liabilities} = 13,000$$

$$\begin{aligned}
 \therefore \text{Current Ratio} &= \frac{25,000}{13,000} \\
 &= 1.92
 \end{aligned}$$

(v) Acid Test Ratio

$$\text{Acid Test Ratio} = \frac{\text{Liquid/Quick Assets}}{\text{Liquid Liabilities}}$$

$$\begin{aligned}
 \text{Liquid/Quick Assets} &= \text{Current Assets} - \text{Stock} \\
 &= 25,000 - 14,900 \\
 &= 10,100
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{Acid Test Ratio} &= \frac{10,100}{13,000} \\
 &= 0.7769 \text{ or } 1
 \end{aligned}$$

(vi) Stock Turnover Ratio

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\begin{aligned}
 \text{Average stock} &= \frac{\text{Opening stock} + \text{Closing stock}}{2} \\
 &= \frac{9,950 + 14,900}{2}
 \end{aligned}$$

$$= \frac{24,850}{2}$$

$$= 12,425$$

$$\therefore \text{Stock Turnover Ratio} = \frac{51,000}{12,425}$$

$$= 4.1046 \text{ times.}$$

22. The following is the balance sheet of Manish Ltd, as on 31st March, 2013.

Liabilities		Assets	
Sundry creditors	2,40,000	Bank	2,00,000
Bills payable	4,00,000	Investments	6,00,000
Tax provision	5,20,000	Book Debts	8,00,000
Outstanding expenses	40,000	Stock	12,00,000
6% Debentures	28,00,000	Fixed Assets	72,00,000
8% Preference Shares	4,00,000	Less: Depreciation 20,00,000	52,00,000
Equity shares	20,00,000		
Reserve fund	16,00,000		
	80,00,000		80,00,000

(a) Net sale 1,30,00,000

(b) Cost of goods sold 1,00,00,000

(c) Profit before tax 8,00,000

(d) Income after tax 4,00,000

(e) Operating expenses 10,00,000

You are required to calculate:

(i) Gross profit ratio

(ii) Net profit ratio

(iii) Quick ratio

(iv) Current ratio

(v) Debt-equity ratio

(vi) Proprietary ratio.

Sol:

(i) Gross Profit Ratio

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\begin{aligned}\text{Gross Profit} &= \text{Sales} - \text{Cost of goods sold} \\ &= 1,30,00,000 - 1,00,00,000 \\ &= 30,00,000\end{aligned}$$

$$\begin{aligned}\text{Gross Profit Ratio} &= \frac{30,00,000}{1,30,00,000} \\ &= 23\%.\end{aligned}$$

(ii) Net Profit Ratio

$$\text{Net profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

[**Note:** Given that income after tax = Net profit]

$$\begin{aligned}&= \frac{4,00,000}{1,30,00,000} \times 100 \\ &= 3\%\end{aligned}$$

(iii) Quick Ratio

$$\text{Quick/Liquid Ratio} = \frac{\text{Quick/Liquid Assets}}{\text{Quick Liabilities}}$$

$$\text{Quick/Liquid Assets} = \text{Current Assets} - \text{Stock}$$

$$\begin{aligned}\text{Current Assets} &= \text{Bank} + \text{Investments} + \text{Book Debts} + \text{Stock} \\ &= 2,00,000 + 6,00,000 + 8,00,000 + 12,00,000 \\ &= 28,00,000\end{aligned}$$

$$\begin{aligned}\text{Quick/Liquid Assets} &= 28,00,000 - 12,00,000 \\ &= 16,00,000\end{aligned}$$

$$\begin{aligned}\text{Current/Quick Liabilities} &= \text{Sundry Creditors} + \text{Bills payable} + \text{Tax provision} + \text{Outstanding expenses} \\ &= 2,40,000 + 4,00,000 + 5,20,000 + 40,000 = 12,00,000.\end{aligned}$$

Note:

There are no long term liabilities. Therefore quick and current liabilities are one and the same

$$\begin{aligned}\text{Quick/Liquid Ratio} &= \frac{16,00,000}{12,00,000} \\ &= 1.33.\end{aligned}$$

(iv) Current Ratio

$$\begin{aligned}\text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{28,00,000}{12,00,000} \\ &= 2.33 : 1\end{aligned}$$

(v) Debt-Equity Ratio

$$\text{Debt-Equity Ratio} = \frac{\text{Long - term Debts}}{\text{shareholder's Fund or Equity}}$$

$$\begin{aligned}\text{Long-term debts} &= 6\% \text{ Debentures} \\ &= 28,00,000\end{aligned}$$

$$\begin{aligned}\text{Shareholder's Fund or Equity} &= \text{Equity shares} + \text{Preference shares} + \text{Reserve Fund} \\ &= 20,00,000 + 4,00,000 + 16,00,000 \\ &= 40,00,000\end{aligned}$$

$$\begin{aligned}\therefore \text{Debt equity Ratio} &= \frac{28,00,000}{40,00,000} \\ &= 0.7:1.\end{aligned}$$

(vi) Proprietary Ratio

$$\begin{aligned}\text{Proprietary Ratio} &= \frac{\text{Shareholder's Fund or Equity}}{\text{Total Assets}} \\ &= \frac{40,00,000}{80,00,000} \\ &= 0.5 : 1.\end{aligned}$$

23. From the following information, make out a statement of proprietors tuna with as many details as possible:

- (a) Current ratio = 2.5
- (b) Liquid ratio = 1.5
- (c) Proprietary ratio = 0.75 (Fixed Assets/Proprietary Fund)
- (d) Working capital = ` 60,000
- (e) Reserves and surplus = ` 40,000
- (f) Bank O.D. = 10,000.

Note: There are no long term loans or investments in fictitious assets.

Sol :

(Imp.)

Statement of Proprietor's Fund

Particulars	Amount (₹)	Amount (₹)
Investment of Funds		
Fixed Assets		1,80,000
Current Assets		
Stock	40,000	
Liquid Assets	60,000	
	1,00,000	
Less: Current Liabilities:		
Bank Overdrafts	10,000	
Creditors	30,000	60,000
		2,40,000
Proprietor's Fund		
Share Capital		2,00,000
Reserves and surplus		40,000
		2,40,000

Working Notes**1. Calculation of Current Assets and Current Liabilities**

Current Ratio = 2.5

$$\text{Current Ratio} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$$

$$\therefore 2.5 = \frac{\text{CA}}{\text{CL}}$$

Let Current Liabilities (CL) be 'x'

$$\therefore 2.5 = \frac{\text{CA}}{\text{CL}}$$

$$2.5 \times = \text{CA}$$

$$\text{CA} = 2.5 \times \quad \dots(1)$$

Now, for calculating the values of current assets and current liabilities, using formulae of working capital.

Working capital = Current Assets – Current Liabilities

Given, working capital = 60,000

$$\therefore 60,000 = 2.5 \times - x$$

$$60,000 = 1.5 \times$$

$$x = \frac{60,000}{1.5}$$

$$x = 40,000.$$

i.e, Current Liabilities = ₹ 40,000.

Substituting value of current liabilities in equation (1),

$$CA = 2.5 x$$

$$CA = 2.5 \times 40,000$$

$$CA = 1,00,000$$

i.e, Current Assets = ₹ 1,00,000.

2. Calculation of Creditors

Creditors = Current Liabilities – Bank overdraft

$$\text{Creditors} = 40,000 - 10,000$$

$$\text{Creditors} = 30,000.$$

3. Calculation of Liquid Assets

Given that,

$$\text{Quick/Liquid Ratio} = 1.5$$

$$\text{Quick/Liquid Ratio} = \frac{\text{Liquid or Quick Assets}}{\text{Liquid or Quick Liabilities}}$$

$$1.5 = \frac{\text{Liquid Assets}}{40,000}$$

$$40,000 \times 1.5 = \text{Liquid Assets}$$

$$\text{Liquid Assets} = 40,000 \times 1.5$$

$$\text{Liquid Assets} = ₹ 60,000.$$

4. Calculation of Stock

Quick Assets = Current Assets – Stock

$$\text{Stock} = \text{Current Assets} - \text{Quick Assets} \quad \text{Stock} = 1,00,000 - 60,000 \quad \text{Stock} = ₹ 40,000.$$

5. Calculation of Proprietor's Fund and Fixed Assets

Given that,

Proprietary Ratio 0.75 (Fixed assets, Proprietor's Fund) means that out of 100%, 75% (0.75) of proprietor's fund has been invested in fixed assets and remaining 25% (0.25) in working capital.

Therefore,

$$0.25 (\text{Proprietary Fund}) = \text{Working Capital}$$

$$0.25 (\text{Proprietary Fund}) = 60,000$$

$$\text{Proprietary Fund} = \frac{60,000}{0.25}$$

$$\text{Proprietary Fund} = ₹ 2,40,000.$$

Whereas,

$$0.75 (\text{Proprietary Fund}) = \text{Fixed Assets}$$

$$0.75 (2,40,000) = \text{Fixed Assets}$$

$$\text{Fixed Assets} = 1,80,000.$$

6. Calculation of Share Capital

$$\text{Proprietor's Fund} = \text{Share Capital} + \text{Reserve and Surplus}$$

$$2,40,000 = \text{Share Capital} + 40,000$$

$$2,40,000 - 40,000 = \text{Share Capital}$$

$$\text{Share Capital} = 2,40,000 - 40,000$$

$$\text{Share Capital} = 2,00,000$$

24. From the following particulars prepare the Balance Sheet:

Sales/Total Assets	3.0
Sales/Fixed Assets	5.0
Sales/Current Assets	7.5
Sales/Inventories	20.0
Sales/Debtors	15.0
Current Ratio	2.0
Total Assets/Networth	2.5
Debt/Equity	1.0
Sales	36,00,000

Sol.:

(i) Sales/Total Assets = 3.0

$$\text{Sales} = 36,00,000$$

$$\text{Total Assets} = ?$$

$$\frac{36,00,000}{\text{Total Assets}} = 3.0$$

$$\therefore \text{Total Assets} = 12,00,000$$

(ii) Sales/Fixed Assets = 5.0

$$\text{Sales} = 36,00,000$$

$$\text{Fixed Assets} = ?$$

$$\frac{36,00,000}{\text{Fixed Assets}} = 5.0$$

$$\text{Fixed Assets} = \frac{36,00,000}{5}$$

$$\therefore \text{Fixed Assets} = 7,20,000$$

(iii) Sales/Current Assets = 7.5

$$\text{Sales} = 36,00,000$$

$$\text{Current Assets} = ?$$

$$36,00,000/\text{Current Assets} = 7.5$$

$$\text{Current Assets} = \frac{36,00,000}{7.5}$$

$$\therefore \text{Current Assets} = 4,80,000$$

(iv) Sales/Inventories = 20.0

$$\text{Sales} = 36,00,000$$

$$\text{Inventories} = ?$$

$$36,00,000/\text{Inventories} = 20.0$$

$$\text{Inventories} = \frac{36,00,000}{20.0}$$

$$\therefore \text{Inventories} = 1,80,000$$

(v) Sales/Debtors = 15.0

$$\text{Sales} = 36,00,000$$

$$\text{Debtors} = ?$$

$$36,00,000/\text{Debtors} = 15.0$$

$$\text{Debtors} = \frac{36,00,000}{15}$$

$$\therefore \text{Debtors} = 2,40,000$$

(vi) Current Ratio = 2.0

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2 = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2 = \frac{4,80,000}{\text{Current Liabilities}}$$

$$\text{Current Liabilities} = \frac{4,80,000}{2}$$

$$\therefore \text{Current Liabilities} = 2,40,000$$

(vii) Total Assets/Net Worth = 2.5

Total Assets = 12,00,000

Net Worth = ?

12,00,000/Net Worth = 2.5

$$\text{Net Worth} = \frac{12,00,000}{2.5}$$

∴ Net worth = 4,80,000

(viii) Debt/Equity = 1.0

$$\frac{\text{Debt}}{\text{Equity/Networth}} = 1$$

Equity/Networth = 4,80,000

Debt/4,80,000 = 1.0

Debt = 4,80,000 × 1

∴ Debt = 4,80,000

(ix) Liquid Assets

Liquid Assets = Current Assets – Inventories – Debtors.

= 4,80,000 - 1,80,000 - 2,40,000

∴ Liquid Assets = 60,000

Liabilities	Amount (₹)	Assets	Amount (₹)
Net worth	4,80,000	Fixed Assets	7,20,000
Current liabilities	2,40,000	Current Assets:	
Long-term debts	4,80,000	Inventories 1,80,000	
		Debtors 2,40,000	
		Liquid Assets 60,000	4,80,000
	12,00,000		12,00,000

25. From the following details, make out the Balance Sheet with as many detail as possible.

Stock Velocity	6	Gross profit Turnover Ratio	20%
Capital turnover Ratio	2	Debtors velocity	2 months
Fixed Assets Turnover	4	Creditors Velocity	73 days

The gross profit was ₹ 60,000, Reserves and surplus amounts to ₹ 20,000, Closing stock was ₹ 5,000 in excess of opening stock.

Sol.:

(Imp.)

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	1,30,000	Fixed assets	75,000
Reserves & Surplus	20,000	Debtors	50,000
Creditors	49,000	Closing stock	42,500
		Cash	31,500
		(Balancing figure)	
	1,99,000		1,99,000

Working Notes**(a) Calculation of Sales**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

Since gross profit ratio is 20% and gross profit is 60,000.

$$\text{Sales} = \frac{\text{Gross Profit}}{\text{Gross Profit Ratio}}$$

$$\text{Sales} = \frac{60,000}{20\%}$$

$$\begin{aligned} \text{Sales} &= ₹ 60,000 \times \frac{100}{20} \\ &= ₹ 3,00,000 \end{aligned}$$

(b) Calculation of Cost of Goods Sold

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= ₹ 3,00,000 - ₹ 60,000 \\ &= ₹ 2,40,000 \end{aligned}$$

(c) Calculation of Stocks

$$\text{Stock Velocity} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \Rightarrow 6 = \frac{₹ 2,40,000}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{2,40,000}{6} = ₹ 40,000$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing stock}}{2}$$

$$40,000 = \frac{\text{Opening stock} + (\text{Opening stock} + 5000)}{2}$$

$$\therefore \text{Closing Stock} = \text{Opening Stock} + 5000$$

$$40,000 \times 2 = 2 \text{ Opening Stock} + 5000$$

$$80,000 - 5,000 = 2 \text{ Opening Stock}$$

$$75,000 = 2 \text{ Opening Stock}$$

$$\text{Opening Stock} = \frac{75,000}{2} = 37,500$$

$$\begin{aligned} \text{Closing Stock} &= \text{Opening Stock} + 5,000 \\ &= 37,500 + 5,000 \\ &= 42,500 \end{aligned}$$

(d) Calculation of Debtors

Debt collection period = 2 months

$$\text{Debtor Velocity} = \frac{\text{Total Debtors}}{\text{Credit Sales}} \times \text{Number of months}$$

$$2 = \frac{\text{Total Debtors}}{3,00,000} \times 12$$

$$\text{Total Debtors} \times 12 = 3,00,000 \times 2$$

$$\text{Total Debtors} = \frac{3,00,000 \times 2}{12} = ₹ 50,000$$

(e) Calculation of Creditors

Purchases = Cost of Goods Sold + Closing Stock – Opening Stock

$$\begin{aligned} &= ₹ 2,40,000 + ₹ 45,500 - ₹ 37,500 \\ &= ₹ 2,45,000 \end{aligned}$$

$$\text{Creditors Velocity} = \frac{\text{Total Creditors}}{\text{Credit Purchases}} \times \text{Number of working days}$$

$$73 = \frac{\text{Total Creditors}}{2,45,000} \times 365$$

$$365 \times \text{Total Creditors} = ₹ 2,45,000 \times 73$$

$$\begin{aligned} \text{Total Creditors} &= ₹ \frac{2,45,000 \times 73}{365} \\ &= ₹ 49,000 \end{aligned}$$

(f) Calculation of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

$$4 = \frac{3,00,000}{\text{Fixed Assets}}$$

$$4 \times \text{Fixed Assets} = 3,00,000$$

$$\text{Fixed Assets} = \frac{3,00,000}{4}$$

$$= ₹ 75,000$$

(g) Calculation of Capital

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital}}$$

$$2 = \frac{3,00,000}{\text{Capital}}$$

$$\text{Capital} = \frac{3,00,000}{2}$$

$$= ₹ 1,50,000$$

Capital includes reserves and surplus of ₹ 20,000.

$$\therefore 1,50,000 - 20,000 = ₹ 1,30,000$$

26. From the following details, make out the Balance Sheet with as many detail as possible.

Stock Velocity	6	Gross profit Turnover Ratio	20%
Capital turnover Ratio	2	Debtors velocity	2 months
Fixed Assets Turnover	4	Creditors Velocity	73 days

The gross profit was ₹ 60,000, Reserves and surplus amounts to ₹ 20,000, Closing stock was ₹ 5,000 in excess of opening stock.

Sol :

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	1,30,000	Fixed assets	75,000
Reserves & Surplus	20,000	Debtors	50,000
Creditors	49,000	Closing stock	42,500
		Cash	31,500
		(Balancing figure)	
	1,99,000		1,99,000

Working Notes**(a) Calculation of Sales**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

Since gross profit ratio is 20% and gross profit is 60,000

$$\text{Sales} = \frac{\text{Gross Profit}}{\text{Gross Profit Ratio}}$$

$$\text{Sales} = \frac{60,000}{20\%}$$

$$\text{Sales} = \frac{60,000}{20\%}$$

$$\text{Sales} = ₹ 60,000 \times \frac{100}{20}$$

$$= ₹ 3,00,000$$

(b) Calculation of Cost of Goods Sold

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= ₹ 3,00,000 - ₹ 60,000 \\ &= ₹ 2,40,000 \end{aligned}$$

(c) Calculation of Stocks

$$\text{Stock Velocity} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \Rightarrow = \frac{₹ 2,40,000}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{2,40,000}{6} = ₹ 40,000$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing stock}}{2}$$

$$40,000 = \frac{\text{Opening stock} + (\text{Opening stock} + 5000)}{2}$$

$$\therefore \text{Closing Stock} = \text{Opening Stock} + 5000$$

$$40,000 \times 2 = 2 \text{ Opening Stock} + 5000$$

$$80,000 - 5,000 = 2 \text{ Opening Stock}$$

$$75,000 = 2 \text{ Opening Stock}$$

$$\text{Opening Stock} = \frac{75,000}{2} = 37,500$$

$$\begin{aligned} \text{Closing Stock} &= \text{Opening Stock} + 5,000 \\ &= 37,500 + 5,000 \\ &= 42,500 \end{aligned}$$

(d) Calculation of Debtors

Debt collection period = 2 months

$$\text{Debtor Velocity} = \frac{\text{Total Debtors}}{\text{Credit Sales}} \times \text{Number of months}$$

$$2 = \frac{\text{Total Debtors}}{3,00,000} \times 12$$

$$\text{Total Debtors} \times 12 = 3,00,000 \times 2$$

$$\text{Total Debtors} = \frac{3,00,000 \times 2}{12} = ₹ 50,000$$

(e) Calculation of Creditors

$$\begin{aligned} \text{Purchases} &= \text{Cost of Goods Sold} + \text{Closing Stock} - \text{Opening Stock} \\ &= ₹ 2,40,000 + ₹ 42,500 - ₹ 37,500 = ₹ 2,45,000 \end{aligned}$$

$$\text{Creditors Velocity} = \frac{\text{Total Creditors}}{\text{Credit Purchases}} \times \text{Number of working days}$$

$$\text{Total Creditors} ₹ = 2,45,000$$

$$365 \times \text{Total Creditors} = ₹ 2,45,000 \times 73$$

$$\begin{aligned} \text{Total Creditors} &= ₹ \frac{2,45,000 \times 73}{365} \\ &= ₹ 49,000 \end{aligned}$$

(f) Calculation of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

$$4 \times \text{Fixed Assets} = 3,00,000$$

$$\begin{aligned} \text{Fixed Assets} &= \frac{3,00,000}{4} \\ &= ₹ 75,000 \end{aligned}$$

(g) Calculation of Capital

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital}}$$

$$2 = \frac{3,00,000}{\text{Capital}}$$

$$\begin{aligned} \text{Capital} &= \frac{3,00,000}{2} \\ &= ₹ 1,50,000 \end{aligned}$$

Capital Includes Reserves & Surplus of ₹ 20,000

$$\therefore ₹ 1,50,000 - ₹ 20,000 = ₹ 1,30,000$$

27. The following information is given:

Current Ratio : 2.5

Fixed Assets Turnover Ratio : 2 times

Liquidity Ratio : 1.5

Average Debt Collection Period : 2 months

Net Working Capital : ₹ 3,00,000

Stock Turnover Ratio : 6 times

Fixed Assets : Share holders Net worth 1 : 1

(Cost of Sales/Closing Stock)

Reserves : Shares Capital 0.5 : 1

Gross Profit Ratio : 20%

Draw up a Balance Sheet from the above information.

Sol :

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Share capital	5,00,000	Fixed assets	7,50,000
Reserves and surplus	2,50,000	Liquid assets	3,00,000
Long-term debts	3,00,000	Stock	2,00,000
Current liabilities	2,00,000		
	12,50,000		12,50,000

Working Notes

1. Current Assets and Current Liabilities

Net Working Capital = Current Assets – Current Liabilities

Current Ratio = 2.5

Let Current Liabilities be x

$$CR = \frac{CA}{CL}$$

$$2.5 = \frac{CA}{x}$$

Current Assets = 2.5 x

∴ NWC = 2.5x – x

3,00,000 = 1.5 x

$$x = \frac{3,00,000}{1.5}$$

= ₹ 2,00,000

∴ Current Liabilities = ₹ 2,00,000

Current Assets = ₹ 2.5 × 2,00,000 = ₹ 5,00,000/-

$$2. \quad \text{Liquid Assets} = \text{CL} \times \text{Liquidity Ratio} \\ = 2,00,000 \times 1.5 = \text{₹ } 3,00,000/-$$

$$3. \quad \text{Stock} = \text{Current Assets} - \text{Liquid Assets} \\ = 5,00,000 - 3,00,000 \\ = \text{₹ } 2,00,000/- ;$$

$$4. \quad \text{Stock Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Stock}}$$

$$6 = \frac{\text{Cost of Sales}}{2,00,000}$$

$$\text{Cost of Sales} = 6 \times 2,00,000 \\ = \text{₹ } 12,00,000/-$$

$$5. \quad \text{Sales} = \text{Cost of Sales} + \text{Gross Profit} \\ \text{Gross Profit} = 20\%, \text{ so Cost of Good Sold} \\ = 100 - 20\% = 80\%$$

$$\text{Gross Profit} = 12,00,000 \times \frac{20}{80}$$

Note:

$$\text{GP} = 20\%, \text{ So, Cost of Goods Sold} = 100 - 20\% = 80\% \\ = 3,00,000 \\ \text{Sales} = 12,00,000 + 3,00,000 \\ = \text{₹ } 15,00,000$$

$$6. \quad \text{Fixed Assets Turnover Ratio} = \frac{15,00,000}{\text{Fixed Assets}}$$

$$2 = \frac{15,00,000}{\text{Fixed Assets}}$$

$$\text{Fixed Assets} = \frac{15,00,000}{2}$$

$$7. \quad \text{Average Debt Collection Period} = \frac{\text{Total Debtors} \times \text{Number of Month}}{\text{Sales}}$$

$$2 = \frac{\text{Total Debtors} \times 12}{12}$$

$$\text{Total Debtors} = \frac{15,00,000 \times 2}{12}$$

$$\therefore \text{Total Debtors} = \text{₹ } 2,50,000$$

8. Shareholder's Net Worth

Fixed Assets Shareholder's Networkth

1:1

 $\therefore 750000 : ?$

$$\therefore \text{Shareholder's Networkth} = \frac{7,50,000}{1} = ₹ 750,000/-$$

9. Share Capital

Let the share capital be 'S', then reserves will be 0.5

Networkth = Share Capital + Reserves + Surplus

$$7,50,000 = S + 0.5 S$$

$$7,50,000 = 1.5 S$$

$$\therefore S = \frac{7,50,000}{1.5}$$

$$S = ₹ 5,00,000$$

If Share Capital = ₹ 5,00,000 then,

Reserves and Surplus = $0.5 \times S$

$$= 0.5 \times ₹ 5,00,000$$

$$= ₹ 2,50,000$$

10. Long Term Debts = Total Assets - (Shareholder's Networkth + Current Liabilities)

$$= (7,50,000 + ₹ 5,00,000) - (7,50,000 + ₹ 2,00,000)$$

$$= ₹ 12,50,000 - ₹ 9,50,000$$

$$\text{Long-term Debts} = ₹ 3,00,000$$

Exercise Problems

1. Equity Share Capital 10,00,000
 10% Pref. Share Capital 5,00,000
 18% Debentures 8,00,000
 Loan at 15% (Long period) 1,40,000
 Current Liabilities 3,00,000
 General Reserve 8,00,000

Find out Capital Gearing from the above particulars.

[Ans : 0.8]

2. The following is the Balance Sheet of a company as on 31st March:

Liabilities	Rs.	Assets	Rs.
Share Capital	2,00,000	Land and Buildings	1,40,000
Profit & Loss Account	30,000	Plant and Machinery	3,50,000
General Reserve	40,000	Stock	2,00,000
12% Debentures	4,20,000	Sundry Debtors	1,00,000
Sundry Creditors	1,00,000	Bills Receivable	10,000
Bills Payable	50,000	Cash at Bank	40,000
	8,40,000		8,40,000

Calculate

- (1) Current Ratio
 (2) Quick Ratio
 (3) Inventory to working Capital
 (4) Debt to Equity Ratio
 (5) Proprietary Ratio
 (6) Capital Gearing Ratio
 (7) Current Assets to Fixed Assets

[Ans : (1) 2.33 : 1 (2) 1 : 1 (3) 1 : 1 (4) 1.56 : 1 (5) 0.32 : 1 (6) 2.1 : 1 (7) 0.71 : 1]

3. Earn & Company supplies you the following information regarding the year ended 31st December.

	Rs.
Cash Sales	80,000
Credit sales	2,00,000
Return Inward	10,000
Opening Stock	25,000
Closing Stock	30,000

Gross Profit Ratio is 25%

Find out Inventory Turnover.

[Ans : 7.36 Times]

4. B. Raj and Co. Sells goods on cash as well as credit (though not on deferred instalment terms). The following particulars are extracted from their books of accounts for the calendar year 2006.

	Rs.
Total Gross Sales	1,00,000
Cash Sales (included in above)	20,000
Sales Returns	7,000
Total Debtors for Sales as on 31.12.2006	9,000
Bills Receivable on 31.12.2006	2,000
Provision for doubtful debts on 31.12.2006	1,000
Total creditors on 31.12.2006	10,000

Calculate the average collection period

[Ans : 55 days]

5. From the following particulars, draw up the Balance Sheet of the company :

Current Ratio	2.5
Quick Ratio	1.5
Net Working Capital	Rs. 30,000
Stock Turnover Ratio (Cost of Sales/Closing Stock)	6 Times
Gross Profit Ratio	20%
Fixed Assets-Turnover Ratio (Cost of sales)	2 Times
Debtors	2 Months
Fixed Assets to Shareholders' Net Worth	0.8
Reserves & Surplus to Capital	0.5
Long - Term Loans	Rs. 15,000

[Ans : 1,10,000]

Short Question and Answers

1. Common-size Statement

Ans :

The common-size statements, balance sheet and income statement, are shown in analytical percentages. The figures are shown as percentages of total assets, total liabilities and total sales. The total assets are taken as 100 and different assets are expressed as a percentage of the total. Similarly, various liabilities are taken as a part of total liabilities. These statements are also known as component percentage or 100 per cent statements because every individual item is stated as a percentage of the total 100. The short - comings in comparative statements and trend percentages where changes in items could not be compared with the totals have been covered up. The analyst is able to assess the figures in relation to total values.

2. Discuss the limitations of financial statements.

Ans :

The financial statements suffer from the following limitations :

1. Only Interim Reports

These statements do not give a final picture of the concern. The data given in these statements is only approximate. The actual position can only be determined when the business is sold or liquidated. However, the statements have to be prepared for different accounting periods, generally one year, during the life time of the concern. The costs and incomes be apportioned to different periods with a view to determine profits etc. The allocation of expenses and incomes will depend upon the personal judgement of the accountant. The existence of contingent assets and liabilities also makes the statements imprecise. So financial statements do not give the final picture and they are at the most interim reports.

2. Do not give Exact Position

The financial statements are expressed in monetary values, so they appear to give final and accurate position. The value of fixed assets in the balance sheet neither represents the value for which fixed assets can be sold nor the amount which will be required to replace these assets. The balance sheet

is prepared on the presumption of a going concern. The concern is expected to continue in the future. So, fixed assets are shown at cost less accumulated depreciation. There are certain assets in the balance sheet such as preliminary expenses, goodwill, discount on issue of shares which will realise nothing at the time of liquidation though they are shown in the balance sheet.

3. Historical Costs

The financial statements are prepared on the basis of historical costs or original costs. The value of assets decreases with the passage of time current price changes are not taken into account. The statements are not prepared keeping in view the present economic conditions. The balance sheet loses the significance of being an index of current economic realities. Similarly, the profitability shown by the income statement may not represent the earning capacity of the concern. The increase in profits may be due to an increase in prices or due to some abnormal causes and not due to increase in efficiency. The conclusions drawn from financial statements may not give a fair picture of the concern.

3. Explain the limitations of ratio analysis.

Ans :

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations:

1. **Limited Use of a Single Ratio:** A single ratio, usually, does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help him in making any meaningful conclusion.
2. **Lack of Adequate Standards:** There are no well accepted standards or rules of thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.
3. **Inherent Limitations of Accounting.** Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indicators of the future.

4. **Change of Accounting Procedure:** Change in accounting procedure by a firm often makes ratio analysis misleading, e.g., a change in the valuation of methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative and an unfavourable gross profit ratio.
5. **Window Dressing:** Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence, one has to be very careful in making a decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by a firm.

4. **What are the objectives of financial statements?**

Ans :

Financial statements are the sources of information on the basis of which conclusions are drawn about the profitability and financial position of a concern. They are the major means employed by firm to present their financial situation of owners, creditors and the general public. The primary objective of financial statements is to assist in decision making. The Accounting Principles Board of America (APB) states the following objectives of financial statements :

- (i) To provide reliable financial information about economic resources and obligations of a business firm.
- (ii) To provide other needed information about changes in such economic resources and obligations.
- (iii) To provide reliable information about changes in net resources (resources less obligations) arising out of business activities.
- (iv) To provide financial information that assists in estimating the earning potentials of business.
- (v) To disclose, to the extent possible, other information related to the financial statements that is relevant to the needs of the users of these statements.

5. **Comparative Statements**

Ans :

Comparative financial statement is a tool of financial analysis used to study the magnitude and direction of changes in the financial position and

performance of a firm over a period of time. The preparation of comparative statements is based on the premise that a statement covering a period of a number of years is more meaningful and significant than for a single year only.

The comparative financial statements are statements of the financial position at different periods; of time. The elements of financial position are shown in a comparative form so as to give an idea of financial position at two or more periods. Any statement prepared in a comparative form will be covered in comparative statements. From practical point of view, generally, two financial statements (balance sheet and income statement) are prepared in comparative form for financial analysis purposes. Not only the comparison of the figures of two periods but also the relationship between balance sheet and income statement enables an in depth study of financial position and operative results. The comparative statement may show :

- (i) Absolute figures (rupee amounts).
- (ii) Changes in absolute figures i.e., increase or decrease in absolute figures.
- (iii) Absolute data in terms of percentages.
- (iv) Increase or decrease in terms of percentages.
- (v) Comparisons expressed in terms of ratios.
- (vi) Percentage of totals.

6. **What is Trend Analysis?**

Ans :

Meaning

The financial statements may be analysed by computing trends of series of information. This method determines the direction upwards or downwards and involves the computation of the percentage relationship that each statement item bears to the same item in base year. The information for a number of years is taken up and one year, generally the first year, is taken as a base year. The figures of the base year are taken as 100 and trend ratios for other years are calculated on the basis of base year. The analyst is able to see the trend of figures, whether upward or downward.

Procedure

1. One year is taken as a base year. Generally, the first or the last is taken as base year.
2. The figures of base year are taken as 100.
3. Trend percentages are calculated in relation to base year. If a figure in other year is less than the figure in base year the trend percentage will be less than 100 and it will be more than 100 if figure is more than base year figure. Each year's figure is divided by the base year's figure.

7. What is Ratios Analysis?*Ans :***Meaning**

Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. However, ratio analysis is not an end in itself. It is only a means of better understanding of financial strengths and weaknesses of a firm. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and interpreted. There are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios from the same keeping in mind the objective of analysis. The ratios may be used as a symptom like blood pressure, the pulse rate or the body temperature and their interpretation depends upon the calibre and competence of the analyst.

The following are the four steps involved in the ratio analysis :

- (i) Selection of relevant data from the financial statements depending upon the objective of the analysis.
- (ii) Calculation of appropriate ratios from the above data.
- (iii) Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from projected financial statements or the ratios of some other firms or the comparison with ratios of the industry to which the firm belongs.
- (iv) Interpretation of the ratios.

8. What are the objectives of Ratios Analysis?*Ans :*

Following are the objectives of ratio analysis:

- **Highlights the area of concern:** When accounting ratios are compared with the ideal ratios prevailing in the industry, it brings to light the area which requires the immediate attention of the management.
- **Facilitates comparison:** With the help of ratio analysis, comparisons of intra and inter-company performances become easier.
- **Evaluation of efficiency:** They provide a detailed overview of the liquidity, solvency, and profitability position of the business which in its entirety helps in evaluating the efficiency of the business.
- **Forecasting and planning:** One of the primary objectives of ratio analysis is that they help in comparing the trend in the financials over the past years which aids the management in preparing future budgets and forecasts.
- **Transparency to stakeholders:** Ratio analysis helps the various stakeholders in measuring the operative efficiency of the company, thereby ensuring complete transparency.
- **Better decision making:** Analysis of various accounting ratios helps the management in taking better and improved decisions.

9. Profitability ratios.*Ans :***Meaning**

The Primary objective of a business undertaking is to earn profits. Profit earning is considered essential for the survival of the business.

In the words of Lord Keynes, "Profit is the engine that drives the business enterprise". A business needs profits not only for its existence but also for expansion and diversification. The investors want an adequate return on their investments, workers want higher wages, creditors want higher security for their interest and loan and so on. A business enterprise can discharge its obligations to the various segments of the society only through earning of profits. Profits are, thus, a useful measure of overall efficiency of a business.

Profits to the management are the test of efficiency and a measurement of control ; to owners, a measure

of worth of their investment; to the creditors, the margin of safety ; to employees, a source of fringe benefits ; to Government, a measure of tax-paying capacity and the basis of legislative action ; to customers, a hint to demand for better quality and price cuts ; to an enterprise, less cumbersome source of finance for growth and existence and finally to the country, profits are an index of economic progress profitability ratios are calculated to measure the overall efficiency of the business. Generally, profitability ratios are calculated either in relation to sales or in relation to investment.

10. Characteristics of financial statements?

Ans :

The financial statements are prepared with a view to depict financial position of the concern. A proper analysis and interpretation of these statements enables a person to judge the profitability and financial strength of the business. The financial statements should be prepared in such a way that they are able to give a clear, and orderly picture of the concern. The ideal financial statements have the following characteristics :

1. Depict True Financial Position

The information contained in the financial statements should be such that a true and correct idea is taken about the financial position of the concern. No material information should be withheld while preparing these statements.

2. Effective Presentation

The financial statements should be presented in a simple and lucid way so as to make them easily understandable. A person who is not well versed with accounting terminology should also be able to understand the statements without much difficulty. This characteristic will enhance the utility of these statements.

3. Relevance

Financial statements should be relevant to the objectives of the enterprise. This will be possible when the person preparing these statements is able to properly utilise the accounting information. The information which is not relevant to the statements should be avoided, otherwise it will be difficult to make a distinction between relevant and irrelevant data.

4. Attractive

The financial statements should be prepared in such a way that important information is underlined so that it attracts the eye of the reader.

5. Easiness

Financial statements should be easily prepared. The balances of different ledger accounts should be easily taken to these statements. The calculation work should be minimum possible while preparing these statements. The size of the statements should not be very large. The columns to be used for giving the information should also be less. This will enable the saving of time in preparing the statements.

11. Solvency Ratios.

Ans :

Meaning

The term 'solvency' refers to the ability of a concern to meet its long term obligations. The long-term indebtedness of a firm includes debenture holders, financial institutions providing medium and long-term loans and other creditors selling goods on instalment basis. The long-term creditors of a firm are primarily interested in knowing the firm's ability to pay regularly interest on long-term borrowings, repayment of the principal amount at the maturity and the security of their loans. Accordingly, long-term solvency ratios indicate a firm's ability to meet the fixed interest and costs and repayment schedules associated with its long-term borrowings.

Choose the Correct Answer

1. Which of the following are types of ratios? [d]
(a) Liquidity ratios (b) Solvency ratios
(c) Profitability ratios (d) All the above
2. Liquid ratio is also known as _____. [c]
(a) Acid test ratio (b) Quick ratio
(c) Both (a) and (b) (d) None of the above
3. _____ ratio measures a relationship between net profit before interest and tax and total assets. [a]
(a) Return on total assets (b) Return on equity
(c) Return on capital employed (d) Return on equity shareholder's funds
4. _____ ratios measure the effectiveness with which a firm uses its available resources. [c]
(a) Liquidity ratios (b) Profitability ratios
(c) Activity ratios (d) None of the above
5. The formula for creditors turnover ratio is [b]
(a) $\frac{\text{Average trade creditors}}{\text{Net credit purchases}}$ (b) $\frac{\text{Net credit purchases}}{\text{Average trade creditors}}$
(c) $\frac{\text{Net credit sales}}{\text{Average trade debtors}}$ (d) $\frac{\text{Average stock}}{\text{Average cost of goods sold}}$
6. _____ and _____ are ratios used for measuring solvency of a firm. [c]
(a) Interest coverage ratio (b) Debt-equity ratio
(c) Both (a) and (b) (d) All the above
7. _____ refers to the ability of a firm to meet the short-term obligations/requirements as and when they arise. [d]
(a) Solvency (b) Profitability
(c) Turnover (d) Liquidity
8. The main objective of computing _____ ratio is to determine the operational efficiency of the management. [b]
(a) Gross profit ratio (b) Operating profit ratio
(c) Net profit ratio (d) Gross profit

9. If assets > liabilities, then a firm is said to be . [a]
(a) Solvent (b) Insolvent
(c) Both (a) and (b) (d) All the above
10. What are the components of return on equity? [c]
(a) Net profit after interest and tax (b) Shareholder's funds
(c) Both (a) and (b) (d) None of the above

Rahul Publications

Fill in the blanks

1. _____ is a very important tool which is used to measure the financial performance of a firm.
2. Current ratio = _____.
3. _____ ratio measures the relationship between gross profit and net sales.
4. Equity shareholder's funds means _____.
5. The formula for fixed assets turnover ratio is _____.
6. _____ is the ratio of external equities or outsiders funds to the shareholder's funds or internal funds.
7. The _____ ratio indicates the efficiency of the firm in the management of debtors.
8. _____ aids in analyzing the firm's capability of offering dividends to equity shareholders.
9. Return on shareholder's funds is also known as _____.
10. Proprietary ratio = _____.

ANSWERS

1. Ratio analysis
2. $\frac{\text{Current assets}}{\text{Current liabilities}}$
3. Gross profit
4. Equity share capital + Reserves and surplus - Fictitious assets
5. $\frac{\text{Net sales}}{\text{Net fixed assets}}$
6. Debt - equity ratio
7. Debtors turnover
8. Earning per share
9. Return on equity
10. $\frac{\text{Shareholders fund or equity}}{\text{Total assets}}$

UNIT IV

FUNDS FLOW ANALYSIS:

Concept of Funds – Meaning and Importance – Limitations – Statement of Changes in Working Capital – Statement of Sources and Application of Funds.

4.1 CONCEPT OF FUNDS

Q1. Define the term :

- (i) **Funds**
- (ii) **Flow of Funds**

Ans :

(i) **Funds**

The term 'funds' has been defined in a number of ways.

- (a) In a narrow sense, it means cash only and a funds flow statement prepared on this basis is called a cash flow statement. Such a statement enumerates net effects of the various business transactions on cash and takes into account receipts and disbursements of cash.
- (b) In a broader sense, the term 'funds' refers to money values in whatever form it may exist. Here 'funds' means all financial resources, used in business whether in the form of men, material, money, machinery and others.
- (c) In a popular sense, the term 'funds', means working capital, i.e., the excess of current over current liabilities. The working capital concept of funds has emerged due to the fact that total resources of a business are invested partly in fixed assets in the form of fixed capital and partly kept in form of liquid or near liquid form as working capital.

(ii) **Flow of Funds**

The term 'flow' means movement and includes both 'inflow' and 'outflow'. The term 'flow of funds' means transfer of economic values from

one asset of equity to another. Flow of funds is said to have taken place when any transaction makes changes in the amount of funds available before happening of the transaction. If the effect of transaction results in the increase of funds, it is called a source of funds and if it results in the decrease of funds, it is known as an application of funds. Further, in case the transaction does not change funds, it is said to have not resulted in the flow of funds. According to the working capital concept of funds, the term 'flow of funds' refers to the movement of funds in the working capital. If any transaction results in the increase in working capital, it is said to be a source or inflow of funds and if it results in the decrease of working capital, it is said to be an application or out-flow of funds.

Rule

The flow of funds occurs when a transaction changes on the one hand a non-current account and on the other a current account and vice-versa.

4.1.1 Meaning and Importance

Q2. What is a funds flow statement? Explain the significance of funds flow statement.

(OR)

Define a fund flow statement. Write a note on the importance of funds flow statement.

Ans :

(Imp.)

Meaning

Funds Flow Statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. It is a statement showing sources and uses of funds for a period of time.

Definitions

- i) **According to Foulke** "A statement of sources and application of funds is a technical device designed to analyse the changes in the financial condition of a business enterprise between two dates."
- ii) **According to Anthony** "The funds flow statement describes the sources from which additional funds were derived and the use to which these sources were put."
- iii) I.C.W.A. in Glossary of Management Accounting terms defines Funds Flow Statement as "a Statement either prospective or retrospective, setting out the sources and applications of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilisation and application of the same."

Thus, funds flow statement is a statement which indicates various means by which the funds have been obtained during a certain period and the ways to which these funds have been used during that period. The term 'funds' used here means working capital, i.e., the excess of current assets over current liabilities.

Importance

1. **It helps in the analysis of financial operations:** The financial statements reveal the net effect of various transactions on the operational and financial position of a concern. The balance sheet gives a static view of the resources of a business and the uses to which these resources have been put at a certain point of time. But it does not disclose the causes for changes in the assets and liabilities between two different points of time. The funds flow statement explains causes for such changes and also the effect of these changes on the liquidity position of the company. Sometimes a concern may operate profitably and yet its cash position may become more and more worse. The funds flow statement gives a clear answer to such a situation explaining what has happened to the profits of the firm.
2. **It throws light on many perplexing questions of general interest which otherwise may be difficult to be answered, such as :**

- (a) Why were the net current assets lesser in spite of higher profits and vice-versa?
- (b) Why more dividends could not be declared in spite of available profits ?
- (c) How was it possible to distribute more dividends than the present earnings ?
- (d) What happened to the net profit ? Where did they go ?
- (e) What happened to the proceeds of sale of fixed assets or issue of shares, debentures, etc. ?
- (f) What are the sources of the repayment of debt ?
- (g) How was the increase in working capital financed and how will it be financed in future ?

3. **It helps in the formation of a realistic dividend policy:** Sometimes a firm has sufficient profits available for distribution as dividend but yet it may not be advisable to distribute dividend for lack of liquid or cash resources. In such cases, a funds flow statement helps in the formation of a realistic dividend policy.

4. **It helps in the proper allocation of resources:** The resources of a concern are always limited and it wants to make the best use of these resources. A projected funds flow statement constructed for the future helps in making managerial decisions. The firm can plan the deployment of its resources and allocate them among various applications.

5. **It acts as a future guide:** A projected funds flow statement also acts as a guide for future to the management. The management can come to know the various problems it is going to face in near future for want off units. The firm's future needs of funds can be projected well in advance and also the timing of these needs. The firm can arrange to finance these needs more effectively and avoid future problems.

6. **It helps in appraising the use of working capital:** A funds flow statement helps in explaining how efficiently the management has used its working capital and also suggests ways to improve working capital position of the firm.

7. **It helps knowing the overall credit worthiness of a firm:** The financial institutions and banks such as State Financial Institutions, Industrial Development Corporation, Industrial Finance Corporation of India, Industrial Development Bank of India, etc. all ask for funds flow statement constructed for a number of years before granting loans to know the creditworthiness and paying capacity of the firm. Hence, a firm seeking financial assistance from these institutions has no alternative but to prepare funds flow statements.

Q3. State the purpose of funds flow statement.

Ans :

Funds flow statement or statement of changes in the financial position of a firm serves the following purposes,

- It helps the investors to determine the most significant factors which are responsible for facilitating changes in financial position.
- It helps to identify internal factors (i.e. internal operations) and external sources through which changes have been made.
- It helps to focus on the factors that are responsible for estimating the differences in equity, assets and liabilities.
- It is useful to emphasize the changes which took place in the investment assets.
- It also depicts the changes which have been made while collecting funds for investing in business.

Q4. What are the objectives of funds flow statement.

Ans :

The main objectives of funds flow statement are as follows,

- To represent the changes in the financial position of a firm during the accounting period.
- To estimate and measure the funds generated or depleted through internal operations.
- To determine the various sources from which the funds can be collected and also the different strategies with the help of which such funds can be utilized.
- To disclose hidden information which is not clear either in profit and loss account or in balance sheet.
- To represent the effect of entire transactions on the working capital of enterprise during the accounting period.

4.1.2 Limitations

Q5. Explain the limitations of funds flow statement.

Ans :

The funds flow statement has a number of uses, however, it has certain limitations also, which are listed below:

- It should be remembered that a funds flow statement is not a substitute of an income statement or a balance sheet. It provides only some additional information as regards changes in working capital.
- It cannot reveal continuous changes.
- It is not an original statement but simply arrangement of data given in the financial statements.
- It is essentially historic in nature and projected funds flow statement cannot be prepared with much accuracy.
- Changes in cash are more important and relevant for financial management than the working capital.

4.2 PROCEDURE FOR PREPARING A FUNDS FLOW STATEMENT

Q6. Explain the Procedure for Preparing a Funds Flow Statement.

Ans :

Funds Flow statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. Hence, the funds flow statement is prepared by comparing two balance sheets and with the help of such other information derived from the accounts as may be needed. Broadly speaking, the preparation of a funds flow statement consists of two parts:

1. Statement or Schedule of Charges in Working Capital.
2. Statement of Sources and Application of Funds.

4.2.1 Statement of Changes in Working Capital

Q7. Explain the steps involved in statement or schedule of changes in working capital.

(OR)

Draw the proforma of statement of schedules of changes in working capital.

Ans :

(Imp.)

Working Capital means the excess of current assets over current liabilities. Statement of changes in working capital is prepared to show the changes in the working capital between the two balance sheet dates. This statement is prepared with the help of current assets and current liabilities derived from the two balance sheets.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities.}$$

So,

- (i) An increase in current assets increases working capital.
- (ii) A decrease in current assets decreases, working capital.
- (iii) An increase in current liabilities decreases working capital; and
- (iv) A decrease in current liabilities increases working capital.

The change in the amount of any current asset or current liability in the current balance sheet as compared to that of the previous balance sheet either results in increase or decrease in working capital. The difference is recorded for each individual current asset and current liability. In case a current asset in the current period is more than in the previous period, the effect is an increase in working capital and it is recorded in the increase column. But if a current liability in the current period is more than in the previous period, the effect is decrease in working capital and it is recorded in the decrease column or vice versa. The total increase and the total decrease are compared and the difference shows the net increase or net decrease in working capital. It is worth noting that schedule of changes in working capital is prepared only from current assets and current liabilities and the other information is not of any use for preparing this statement. A typical form of statement or schedule of changes in working capital is as follows :

Statement of Schedule of Changes in Working Capital

			Effect on Working Capital	
Particulars	Previous Year	Current Year	Increase	Decrease
Current Assets:				
Cash in hand	XXX	XXX		
Cash at bank	XXX	XXX		
Bills Receivable	XXX	XXX		
Sundry Debtors	XXX	XXX		
Temporary Investments	XXX	XXX		
Stocks/Inventories	XXX	XXX		
Prepaid Expenses	XXX	XXX		
Accrued Incomes	XXX	XXX		
Total Current Assets (CA)	XXX	XXX		
Current Liabilities :				
Bills Payable	XXX	XXX		
Sundry Creditors	XXX	XXX		
Outstanding Expenses	XXX	XXX		
Bank Overdraft	XXX	XXX		
Short-term advances	XXX	XXX		
Dividends Payable	XXX	XXX		
Proposed dividends*	XXX	XXX		
Provision for taxation*	XXX	XXX		
Total Current Liabilities (CC)	XXX	XXX		
Working Capital (CA-CL)	XXX	XXX		
Net Increase or Decrease in	XXX	XXX		
Working Capital	XXX	XXX		

PROBLEMS

1. Prepare a Statement of changes in Working Capital from the following Balance Sheets of Many it and company Limited.

Balance Sheets
as at December 31

Particulars	2012 (₹)	2013 (₹)
I. Equity and Liabilities		
Shareholders' Funds :		
Equity share capital	5,00,000	5,00,000
Non-current-Liabilities :		
Debentures	3,70,000	4,50,000
Current Liabilities:		
Accounts Payable	96,000	1,92,000
Tax Payable	77,000	43,000
Interest Payable	37,000	45,000
Dividend Payable	50,000	35,000
Total	11,30,000	12,65,000
II. Assets		
Non-current Assets:		
Fixed Assets	6,00,000	7,00,000
Long-term Investments	2,00,000	1,00,000
Current Assets:		
Stock-in-Trade	1,50,000	2,25,000
Accounts Receivable	70,000	1,40,000
Work-in-Progress	80,000	90,000
Cash	30,000	10,000
Total	11,30,000	12,65,000

Sol :

Statement Showing Changes in Working Capital

Particulars	2012 (₹)	2013 (₹)	Effect on Working Capital	
			Increase (₹)	Decrease (₹)
Current Assets :				
Cash	30,000	10,000	20,000	
Accounts Receivable	70,000	1,40,000	70,000	
Stock-in-trade	1,50,000	2,25,000	75,000	
Work-in-progress	80,000	90,000	10,000	
Total Current Assets (CA)	3,30,000	4,65,000		

Current Liabilities:				
Tax Payable	77,000	43,000	34,000	–
Accounts Payable	96,000	1,92,000	–	96,000
Interest Payable	37,000	45,000	–	8,000
Dividend Payable	50,000	35,000	15,000	–
Total Current Liabilities (CL)	2,60,000	3,15,000		
Working Capital (CA-CL)	70,000	1,50,000		
Net Increase in Working Capital	80,000	–		80,000
	1,50,000	1,50,000	2,04,000	2,04,000

2. From the following balance sheets of Bharat Company prepare a statement showing changes in Working Capital.

Particulars	31.12.2012 (₹)	31.12.2011 (₹)
I. Equity and Liabilities		
Shareholder's Funds		
Share Capital	1,50,000	1,25,000
Reserve and Surplus		
– Profit and Loss Account	75,00	60,000
– Preliminary Expenses	(3,000)	(5,000)
Non-current Liabilities	–	–
Current liabilities Short-term Borrowings		
– Loans (Payable on demand)	20,000	–
Trade Payables		
– Trade creditors	45,000	50,000
– Bills payable	35,000	20,000
	3,22,000	2,50,000
II. Assets		
Non-current Assets		
Tangible Fixed Assets		
– Land	27,000	15,000
Intangible Assets		
– Goodwill	5,000	10,000
Non-current Investments	10,000	15,000
Current Assets		
– Inventories (Stock)	1,20,00	87,000
– Trade Receivables (Debtors)	90,000	98,000
– Cash and cash equivalents	70,000	25,000
	3,22,000	2,50,000

Sol.:

Statement Showing Changes in Working Capital

Particulars	2011 (₹)	2012 (₹)	Effect on Working Capital	
			Increase(₹)	Decrease(₹)
Current Assets:				
Cash	25,000	70,000	45,000	
Debtors'	98,000	90,000		8,000
Closing Stock	87,000	1,20,000	33,000	
Total Current Assets (CA)	2,10,000	2,80,000		
Current Liabilities:				
Trade Creditors	50,000	45,000	5,000	
Bills Payable	20,000	35,000		15,000
Loans (Payable on demand)	—	20,000		20,000
Total Current Liabilities (CL)	70,000	1,00,000		
Working Capital (CA-CL)	1,40,000	1,80,000		
Net increase in Working Capital	40,000	—	—	40,000
	1,80,000	1,80,000	83,000	83,000

3. The summarized balance sheet of Sugree Ltd. as on 31st March is given below

Liabilities	2009(₹)	2010(₹)	Assets	2009(₹)	2010(₹)
Share capital	2,00,000	2,50,000	Land & Building	2,00,000	1,90,000
Debentures	50,000	90,000	Machinery	1,50,000	1,74,000
Profit & Loss A/c	30,500	30,600	Inventory	1,00,000	74,000
Bank Loan	70,000	—	Sundry debtors	80,000	94,200
Creditors	1,50,000	1,35,200	Cash	500	8,600
Provision for taxation	30,000	35,000			

Prepare statement of changes in working capital

*Sol:***Statement Showing Changes in Working Capital**

Particulars	2009 Amount (₹)	2010 Amount (₹)	Effect on Working Capital	
			Increase (+) Amount (₹)	Decrease (-) Amount (₹)
A. Current Assets:				
Inventory	1,00,000	74,000		26,000
Sundry debtors	80,000	94,200	14,200	
Cash	500	8,600	8,100	
Total Current Asset (A)	1,80,500	1,76,800		
B. Current Liabilities:				
Creditors	1,50,000	1,35,200	14,800	
Provision for taxation	30,000	35,000		5,000
Total Current Liabilities (B)	1,80,000	1,70,200		
Working Capital (A - B)	500	6,600		
Increase in Working Capital	6,100			6,100
	6,600	6,600	37,100	37,100

4. From the following information provided by ABC company you are required to calculate the statement

Liabilities	Year (₹)	Year (₹)	Assets	Year (₹)	Year (₹)
	2009	2010		2009	2010
Equity share capital	2,00,000	4,50,000	Fixed assets	2,00,000	4,00,000
5% Debentures	20,000	25,000	Inventories	20,000	40,000
Short term loans and advances	10,000	15,000	Cash	10,000	15,000
Bills payable	15,000	10,000	Bills receivable	2,000	4,000
Sundry creditors	50,000	45,000	Bank	5,000	6,000
	2,95,000	5,45,000	Debtors	58,000	80,000
				2,95,000	5,45,000

Sol.:

Statement Showing Changes in Working Capital

Particulars	Previous Year 2009 (₹)	Current Year 2010 (₹)	Working Capital	
			Increase	Decrease
A) Current Assets				
Inventories	20,000	40,000	20,000	–
Cash	10,000	15,000	5,000	–
Bills receivable	2,000	4,000	2,000	–
Bank	5,000	6,000	1,000	–
Debtors	58,000	80,000	22,000	–
Total Current Assets (A)	95,000	1,45,000		
B) Current Liabilities				
Sundry creditors	50,000	45,000	5,000	
Short term loans and advances	10,000	15,000		5,000
Bills payable	15,000	10,000	5,000	
Total Current Liabilities (B)	75,000	70,000		
C) Working Capital (A – B)	20,000	75,000		
D) Increase in Working Capital	55,000			55,000
	75,000	75,000	60,000	60,000

5. From the following balance sheets of Company prepare a statement showing changes in working capital.

Particulars	31 st December 2008 (₹)	31 st December 2007 (₹)
Assets		
Goodwill	10,000	15,000
Cash	60,000	70,000
Debtors	40,000	30,000
Closing stock	1,00,000	90,000
Long term investments	20,000	20,000
Land	25,000	30,000
Preliminary expenses	5,000	10,000
Total	2,60,000	2,65,000
Liabilities		
Trade creditors	30,000	40,000
Bills payable	50,000	15,000
Loans	30,000	10,000
Share capital	1,00,000	1,50,000
Profit and Loss account	50,000	50,000
Total	2,60,000	2,65,000

Sol :

Statement Showing Changes in Working Capital

Particulars	Previous year 2007 (₹)	Current year 2008 (₹)	Effect on working capital	
			Increase (₹)	Decrease (₹)
Current Assets				
Cash	70,000	60,000		10,000
Debtors	30,000	40,000	10,000	–
Closing stock	90,000	1,00,000	10,000	–
Total [A]	1,90,000	2,00,000		
Current Liabilities				
Trade creditors	40,000	30,000	10,000	–
Bills payable	15,000	50,000	–	35,000
Total [B]	55,000	80,000		
Working Capital				
[A-B]	1,35,000	1,20,000		
Net decrease in working capital	–	15,000	15,000	–
	1,35,000	1,35,000	45,000	45,000

4.2.2 Statement of Sources and Application of Funds

Q8. Explain the Statement of Sources and Application of Funds.

Ans :

Funds flow statement is a statement which indicates various sources from which funds (working capital) have been obtained during a certain period and the uses or applications to which these funds have been put during that period. Generally, this statement is prepared in two formats :

- Report Form
- T Form or An Account Form (or) Self Balancing Type.

Specimen of Report From of Funds Flow Statement

Particulars	₹
Sources of Funds:	
Funds from Operations	XXX
Issue of Share Capital	XXX
Raising of long-term loans	XXX
Receipts from partly paid shares, called up	XXX
Sales of non current (fixed) assets	XXX
Non-trading receipts, such as dividends received	XXX
Sale of Investments (long-term)	XXX
Decrease in Working Capital	XXX
(as per schedule of changes in Working Capital)	XXX
Total	XXX
Applications or Uses of Funds :	
Funds Lost in Operations	XXX
Redemption of Preference Share Capital	XXX
Redemption of Debentures	XXX
Repayment of long-term loans	XXX
Purchase of non-current (fixed) assets	XXX
Purchase of long-term Investments	XXX
Non-trading payments	XXX
Payments of dividends*	XXX
Payment of tax*	XXX
Increase in Working Capital	XXX
(as per schedule of changes in working capital)	XXX
Total	XXX

**T Form or An Account Form or Self Balancing Type
Funds Flow Statement
(For the year ended.....)**

Sources	₹	Applications	₹
Funds from Operations	xxx	Funds lost in Operations	xxx
Issue of Share Capital	xxx	Redemption of Preference Share Capital	xxx
Issue of Debentures	xxx	Redemption of Debentures	xxx
Raising of long-term loans	xxx	Repayment of long-term loans	xxx
Receipts from partly paid shares, called up	xxx	Purchase of non-current (fixed) assets	xxx
Sale of non-current (fixed) assets	xxx	Purchase of long-term investments	xxx
Non-trading receipts such as dividends	xxx	Non-trading payments	xxx
Sale of long-term Investments	xxx	Payment of Dividends*	xxx
Net Decrease in Working Capital	xxx	Payment of tax*	xxx
	xxx	Net Increase in Working Capital	xxx

Note:

Payment of dividend and tax will appear as an application of funds only when these items are appropriations of profits and not current liabilities.

Q9. What are the sources of funds?

(OR)

Explain the format of funds from operation.

(OR)

Explain the format of adjusted profit and loss account.

Ans :

(Imp.)

The following are the sources from which funds generally flow (come), into the business :

1. Funds From Operations (or) Trading Profits

Trading profits or the profits from operations of the business are the most important and major source of funds. Sales are the main source of inflow of funds into the business as they increase current assets (cash, debtors or bills receivable) but at the same time funds flow out of business for expenses and cost of goods sold. Thus, the net effect of operations will be a source of funds if inflow from sales exceeds the outflow for expenses and cost of goods sold and vice-versa. But it must be remembered that funds from operations do not necessarily mean the profit as shown by the profit and loss account of a firm, because there are many non-fund or non-operating items which may have been either debited or credited to profit and loss account.

The examples of such items on the debit side of a profit and loss account are : Amortization of fictitious and intangible assets such as goodwill, Preliminary expenses and Discount on issue of shares and debentures written off; Appropriation of Retained Earnings, such as Transfers to Reserves, etc., Depreciation and depletion ; Loss on sale of fixed assets ; Payment of dividend, etc. The non-fund items are those which may be operational expenses but they do not affect funds of the business, e.g., for depreciation charged to profit and loss account, funds really do not move out of business. Non-operating items are those which although may result in the outflow of funds but are not related to the trading operations of the business, such as loss on sale of machinery or payment of dividends.

Basically, there are two methods of calculating funds from operations :

- (a) The first method is to prepare the profit and loss account afresh by taking into consideration only fund and operational items which involve funds and are related to the normal operations of the business. The balancing figure in this case will be either funds generated from operations or funds lost in operations depending upon whether the income or credit side of profit and loss account exceeds the expense or debit side of profit and loss account or vice-versa.
- (b) The second method (which is generally used) is to proceed from the figure of net profit or net loss as arrived at from the profit and loss account already prepared. Funds from operations by this method can be calculated as under :

(a) Calculation of Funds from Operation

Particulars	
Closing Balance of P & L A/c or Retained Earnings (as given in the balance sheet)	xxx
Add: Non-fund and Non-operating items which have been already debited to P&L A/c:	
(i) Depreciation and Depletion	xxx
(ii) Amortization of fictitious and Intangible Assets such as :	xxx
(a) Goodwill	
(b) Patents	

(c) Trade Marks	xxx
(d) Preliminary Expenses	xxx
(e) Discount on Issue of Shares, etc.	xxx
(iii) Appropriation of Retained Earnings, such as :	
(a) Transfer to General Reserve	xxx
(b) Dividend Equalisation Fund	xxx
(c) Transfer to Sinking Fund	xxx
(d) Contingency Reserve, etc.	xxx
(iv) Loss on Sale of any non-current (fixed) assets such as :	
(a) Loss on sale of land and building	xxx
(b) Loss on sale of machinery	xxx
(c) Loss on sale of furniture	xxx
(d) Loss on sale of long-term investments, etc.	xxx
(v) Dividends including :	
(a) Interim Dividend	xxx
(b) Proposed Dividend (if it is an appropriation of profits and not taken as current liability)	xxx
(vi) Provision for Taxation (if it is not taken as current liability)	xxx
(vii) Any other non-fund/non-operating items which have been debited to P/L A/c	xxx
Total (A)	xxx
Less: Non-fund or Non-operating items which have already been credited to P&L A/c	
(i) Profit or Gain from the sale of non-current (fixed) assets such as :	
(a) Profit on sale of land and building	xxx
(b) Profit on sale of plant & machinery	xxx
(c) Profit on sale of long-term investments, etc.	xxx
(ii) Appreciation in the value of fixed assets, such as increase in the value of land if it has been credited to P/L A/c	xxx
(iii) Dividends Received	xxx
(iv) Excess Provision retransferred to P/L A/c or written off	xxx
(v) Any other non-operating item which has been credited to P/L A/c	xxx
(vi) Opening balance of P&L A/c or Retained Earnings (as given in the balance sheet)	xxx
Total (B)	xxx
Total (A) – Total (B) = Funds generated by operations	xxx

- (b) Funds from operations can also be calculated by preparing Adjusted Profit and Loss Account as follows:

Adjusted Profit and Loss Account

Particulars	✓	Particulars	✓
To Depreciation & Depletion or amortization		By Opening Balance (of P & L A/c)	
To Transfers from excess provisions			
To Appreciation in the value of fixed assets			
To Dividends received			
To Interest on investments			
To Profit on sale of fixed or non-current assets			
To Funds from Operations (balancing figure in case debit side exceeds credit side)			
To Dividends (including interim dividend)			
To Proposed Dividend (if not taken as a current liability)			
To Provision for taxation (if not taken as a current liability)			
To Closing balance (of P & L A/c)			
To Funds lost in Operations (balancing figure, in case credit side exceeds the debit side)			

2. Issue of Share Capital

If during the year there is any increase in the share capital, whether preference or equity, it means capital has been raised during the year. Issue of shares is a source of funds as it constitutes inflow of funds. Even the calls received from partly paid shares constitutes an inflow of funds. It should also be remembered that it is the net proceeds from the issue of share capital which amounts to a source of funds and hence in case shares are issued at premium, even the amount of premium collected shall become a source of funds. The same is true when shares are issued at discount ; it will not be the nominal value of shares but the actual realisation after deducting discount that shall amount to inflow of funds. But sometimes shares are issued otherwise than in cash, the following rules must be followed :

- (i) Issue of shares or making of partly paid shares as fully paid out of accumulated profits in the form of bonus shares is not a source of funds.
- (ii) Issues of shares for consideration other than current assets such as against purchase of land, machines, etc. does not amount to inflow of funds.
- (iii) Conversion of debentures or loans into shares also does not amount to inflow of funds.

In all the three cases mentioned above, both the amounts involved are non-current and do not involve any current assets or funds.

3. Issue of Debentures and Raising of Loans, etc

Issue of debentures or raising of loans (long-term), whether secured or unsecured results in the flow of funds into the business. The inflow of funds is the actual proceeds from the issue of such debentures or

raising of loans, i.e., including the amount of premium or excluding discount, if any. However, loans raised for consideration other than a current asset, such as for purchase of building, will not constitute inflow of funds because in that case the accounts involved are only fixed or non-current.

4. **Sale of Fixed (non-current) Assets and Long-term or Trade investments**

When any fixed or non-current asset like land, building, plant and machinery, furniture, long-term investments, etc. are sold it generates funds and becomes a source of funds. However, it must be remembered that if one fixed asset is exchanged for another fixed asset, it does not constitute an inflow of funds because no current assets are involved.

5. **Non-Trading Receipts**

Any non-trading receipt like dividend received, refund of tax, rent received, etc. also increases funds and is treated as a source of funds because such an income is not included in the funds from operations.

6. **Decrease in Working Capital**

If the working capital decreases during the current period as compared to the previous period, it means that there has been a release of funds from working capital and it constitutes a source of funds.

Q10. What are the applications of funds?

Ans :

1. **Funds lost in operations**

Sometimes the result of trading in a certain year is a loss and some funds are lost during that period in trading operations. Such loss of funds in trading amounts to an outflow of funds and is treated as an application of funds.

2. **Redemption of preference share capital**

If during the year any preference shares are redeemed, it will result in the outflow of funds and is taken as an application of funds. When the shares are redeemed at premium or discount, it is the net amount paid (including premium or excluding discount, as the case may be). However, if shares are redeemed in exchange of some other type of shares or debentures, it does not constitute an outflow of funds as no current account is involved in that case.

3. **Repayment of loans or redemption of debentures, etc.**

In the same way as redemption of preference share capital, redemption of debentures or repayment of loans also constitute an application of funds.

4. **Purchase of any non-current or fixed asset**

When any fixed or non-current asset like land, building, plant and machinery, furniture, long-term investments, etc. are purchased, funds outflow from the business. However, if fixed assets are purchased for a consideration of issue of shares or debentures or if some fixed asset is exchanged for another, it does not involve any funds and hence not an application of funds.

5. **Payments of dividends and tax**

Payments of dividends and tax are also applications of funds. It is the actual payment of dividend (may be interim dividend) and tax which should be taken as an outflow of funds and not the mere declaration of dividend or creating of a provision for taxation.

6. **Any other non-trading payment**

Any payment or expense not related to the trading operations of the business amounts to outflow of funds and is taken as an application of funds. The examples could be drawings in case of sole trader or partnership firms, loss of cash, etc)

PROBLEMS

6. B.M. Company presents the following information and you are required to calculate funds from operations :

Profit and Loss Account

Particulars		Particulars	
To Expenses:		By Gross Profit	2,00,000
Operation	1,00,000	By Gain on Sale of Plant	20,000
Depreciation	40,000		
To Loss on Sale of building	10,000		
To Advertisement Suspense A/c	5,000		
To Discount (allowed to customers)	500		
To Discount on Issue of Shares written off	500		
To Goodwill	12,000		
To Net Profit	52,000		
	<u>2,20,000</u>		<u>2,20,000</u>

Sol :

Calculation of Funds from Operations

Particulars		
Net Profit (as given)		52,000
Add: Non-fund or non-operating items which have been debited to P/L A/c:		
Depreciation	40,000	
Loss on sale of building	10,000	
Advertisement written off	5,000	
Discount on issue of shares written off	500	
Goodwill written off	12,000	67,500
		1,19,500
Less: Non-fund or non-operating items which have been credited to P/L A/c :		
Gain on sale of plant	20,000	20,000
Funds from Operations		<u>99,500</u>

Alternatively:

Adjusted Profit and Loss Account

Particulars	₹	Particulars	₹
To Depreciation	40,000	By Opening balance	—
To Loss on sale of building	10,000	By Gain on sale of plant	20,000
To Advertisement Suspense A/c	5,000	By Funds from Operations	
To Discount on issue of shares	500	(balancing figure)	99,500
To Goodwill	12,000		
To Closing balance	52,000		
	<u>1,19,500</u>		<u>1,19,500</u>

7. Calculate 'Funds from Operations from the information given below as on 31st March, 2013

- (i) Net profit for the year ended 31st March 2013, ₹ 6,50,000.
- (ii) Gain on the sale of building ₹ 35,500.
- (iii) Goodwill appears in the books at ₹ 1,80,000 out of that 10 per cent has been written off during the year.
- (iv) Old machinery worth ₹ 8,000 has been sold for ₹ 6,500 during the year.
- (v) ₹ 1,25,000 have been transferred to the General Reserve Fund.
- (vi) Depreciation has been provided during the year on machinery and furniture at 20% whose total cost is ₹ 6,50,000.

Sol.:

Calculation of Funds from Operations

Particulars	₹	₹
Net profit for the year (as given)		6,50,000
Add: Non-fund and non-operating items which have been debited to P/L A/c:		
Goodwill written off	18,000	
Los on sale, of machinery (₹ 8,000-6,500)	1,500	
Transfer to General Reserve Fund	1,25,000	
Depreciation @ 20% on 6,50,000	1,30,000	2,74,500
Less : Non-fund and non-operating items which have been credited to P/L A/c :		9,24,500
Gain on sale of building	35,500	35,500
Funds from Operations		8,89,000

Alternatively**Adjusted Profit and Loss Account**

Particulars	₹	Particulars	₹
To Goodwill	18,000	By Gain on sale of building	35,500
To Loss on sale of machinery	1,500	By Funds from operations	
To Transfer to General Reserve Fund	1,25,000	(balancing figure)	8,89,000
To Depreciation	1,30,000		
To Closing balance	6,50,000		
	<u>9,24,500</u>		<u>9,24,500</u>

8. From the following Profit and Loss Account compute the funds from operations.

Profit and Loss Account

Particulars	₹	Particulars	₹
To Salaries	5,000	By Gross profit b/d	1,000
To Rent	2,000	By Discount	5,000
To Depreciation	1,000	By Interest on investment	4,000
To Preliminary expenses	2,000	By Net loss	5,000
To Loss on sale of land	5,000		
	<u>15,000</u>		<u>15,000</u>

Calculation of Funds from Operations

Particulars	₹	₹
Net loss as per profit and loss account		-5,000
Add: Non-fund and non-operating items which have been debited to P/c A/c :		
Depreciation	1,000	
Preliminary expenses	2,000	
Loss on sale of land	5,000	+8,000
Less : Non-fund and non-operating items which have been credited to P/L A/c		+3,000
Interest on investment		-4,000
Funds Lost in Operations		<u>1,000</u>

9. From the following balance sheets and additional information given, you are required to calculate funds from operations for the year ended 2011.

Liabilities	2010	2011	Assets	2010	2011
Share Capital	1,00,000	1,50,000	Land & Buildings	1,00,000	95,000
General Reserve	30,000	30,000	Plant & Machinery	80,000	90,000
Profit & Loss A/c	20,000	22,000	Stocks	70,000	1,10,000
6% Debentures	80,000	80,000	Debtors	20,000	25,000
Creditors	65,000	58,000	Investments	—	10,000
Provision for tax	5,000	10,000	Cash	10,000	10,000
			Goodwill	20,000	10,000
	<u>3,00,000</u>	<u>3,50,000</u>		<u>3,00,000</u>	<u>3,50,000</u>

Additional Information :

- During 2011, dividends of ₹ 15,000 were paid.
- Depreciation written off plant and machinery amounted to ₹ 6,000 and no depreciation has been charged on land and buildings.
- Provision for tax made during the year ₹ 5,000.
- Profit on sale of machinery ₹ 2,000.

Sol :

Calculation of Funds from Operations

Particulars		
Closing balance of P/L A/c given in the B/S		22,000
Add: Non-fund or non-operating items already debited to P/L A/c :		
Depreciation	6,000	
Dividends	15,000	
Provision for tax	5,000	
Goodwill	10,000	36,000
		58,000
Less: Non-fund or non-operating items already credited to P/L A/c :		
Profit on sale of machinery	2,000	
Opening balance of P/L A/c (given in B/S)	20,000	22,000
Funds from Operations		36,000

1. Provision for tax has been treated as a non-current liability.
2. Goodwill written off during the year is : ` 20,000 – ` 10,000 = ` 10,000

Alternatively**Adjusted Profit and Loss Account**

Particulars	`	Particulars	`
To Depreciation	6,000	By Opening balance	20,000
To Dividends	15,000	By Profit on sale of machinery	2,000
To Provision for tax	5,000	By Funds from operations	36,000
To Goodwill	10,000	(balancing figure)	
To Closing balance	22,000		
	<u>58,000</u>		<u>58,000</u>

10. From the following condensed balance sheets of Abhishek Ltd. for the year ending 31st March, 2012 and 2013, draw out a Funds Flow Statement and a Statement of Changes in Working Capital.

Liabilities	2012 (`)	2013 (`)	Assets	2012 (`)	2013 (`)
Equity Share Capital	3,00,000	4,00,000	Goodwill	60,000	55,000
6% Red. Pref. Shares Capital	80,000	50,000	Land & Buildings	1,25,000	85,000
Capital Reserve	-	20,000	Plant & Machinery	1,20,000	2,25,000
General Reserve	30,000	40,000	Furniture	15,000	12,000
P&LA/c	26,000	35,000	Trade Investment	12,000	48,000
Sundry Creditors	30,000	58,000	Sundry Debtors	65,000	1,05,000
BIP	12,000	8,000	Inventories	90,000	84,000
O/S Expenses	6,000	5,000	B/R	16,000	30,000
Prop. Dividend	30,000	42,000	Cash	13,000	20,000
Provision for Taxation	32,000	36,000	Bank	15,000	20,000
			Preliminary Expenses	15,000	10,000
	<u>5,46,000</u>	<u>6,94,000</u>		<u>5,46,000</u>	<u>6,94,000</u>

Additional information :

- (i) A piece of land has been sold out in 2013 and the balance has been revalued. Profit on sale and revaluation being transferred to capital reserve account.
- (ii) Depreciation on Plant and Machinery has been written off ` 24,000 in 2013.
- (iii) No depreciation is charged on land and buildings.
- (iv) A machinery was sold for ` 16,000 (WDV Being ` 20,000)
- (v) No furniture is sold out in the year 2013.
- (vi) An interim dividend of ` 20,000 has been paid.
- (vii) ` 3000 has been received as dividend on trade investments.

Sol.:

In the given problem proposed dividend and provision for taxation is showed in liabilities side of the balance sheet. However there are two ways for dealing with these two transactions.

1. When these items are considered as current liabilities.
2. When these items are not considered as current liabilities but treated as appropriation of profits.

We are solving the given problem by considering proposed dividend and provision for taxation as current liabilities.

Statement of changes in working capital

Particulars	2012 (₹)	2013 (₹)	Increase in W.C (₹)	Decrease in W.C (₹)
Current Assets:				
Sundry Debtors	65,000	1,05,000	40,000	–
Inventories	90,000	84,000	–	6,000
Bills Receivable (B/R)	16,000	30,000	14,000	–
Cash	13,000	20,000	7,000	–
Bank	15,000	20,000	5,000	–
Total (A)	1,99,000	2,59,000		
Current Liabilities:				
Sundry Creditors	30,000	58,000		28,000
Bills Payable (B/P)	12,000	8,000	4,000	
Outstanding Expenses	6,000	5,000	1,000	
Proposed Dividend	30,000	42,000		12,000
Provision for Taxation	32,000	36,000		4,000
Total (B)	1,10,000	1,49,000		
Working Capital (A – B)	89,000	1,10,000		
Increase in Working Capital	21,000			21,000
	1,10,000	1,10,000	71,000	71,000

Funds from Operation

Particulars	Amount (₹)	Particulars	Amount (₹)
To Transfer to General Reserve	10,000	By Balance b/d	26,000
To Depreciation on Plant & machinery	24,000	By Dividend on trade investment	3,000
To Depreciation on furniture	3,000	By funds from operation (bal. fig)	77,000
To loss on sale of machinery	4,000		
To Goodwill (written off)	5,000		
To Preliminary Expenses (written off)	5,000		
To Interim Dividend	20,000		
To Balance c/d	35,000		
	1,06,000		1,06,000

Land and Buildings A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,25,000	By Bank (Sales)	60,000
To capital reserve	20,000	(Balancing figure)	
		By Balance c/d	85,000
	<u>1,45,000</u>		<u>1,45,000</u>

Plant and Machinery A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,20,000	By Bank (Sales)	16,000
To Bank (Purchases)	1,49,000	By Depreciation	24,000
(Balancing figure)		By Adjusted P & L	4,000
		(Loss on Sale)	
		(20,000-16,000)	
		By Balance c/d	2,25,000
	<u>2,69,000</u>		<u>2,69,000</u>

Furniture A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	15,000	By Depreciation	3,000
		By Balance c/d	12,000
	<u>15,000</u>		<u>15,000</u>

Trade Investment A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	12,000	By Balance c/d	48,000
To Bank (Purchases)	36,000		
(Balancing figure)			
	<u>48,000</u>		<u>48,000</u>

Funds flow Statement

Sources	Amount (₹)	Applications	Amount (₹)
Increase in share capital	1,00,000	Redemption of preference share capital	30,000
Sale of land and Building	60,000	Plant and machinery (Purchase)	1,49,000
Sale of machinery	16,000	Trade investment (Purchase)	36,000
Dividend received on trade investment	3,000	Interim Dividend paid	20,000
Funds from Operation (Bal. fig)	77,000	Increase in working capital	21,000
	2,56,000		2,56,000

11. From the following Balance Sheets of Pioneers Ltd as on 31.3.12 and 31.3.2013, prepare

(i) A funds flow statement

(ii) A schedule of changes in the working capital.

Liabilities	2012 (₹)	2013 (₹)	Assets	2012 (₹)	2013 (₹)
Share capital	4,00,000	4,00,000	Goodwill	48,000	48,000
General Reserve	56,000	72,000	Building	1,60,000	1,44,000
P & L A/c	64,000	62,000	Plant	1,48,000	1,44,000
Sundry Creditors	32,000	11,600	Investments	40,000	48,000
Bills payable	4,800	3,200	Bills receivable	8,000	8,800
Provision for taxation	64,000	72,000	Stock	1,20,000	93,600
Provision for Doubtful debts	1,600	2,400	Debtors	72,000	76,000
			Cash at Bank	26,400	60,800
	6,22,400	6,23,200		6,22,400	6,23,200

Additional Information:

(i) Depreciation on plant ₹ 32,000

(ii) Provision for taxation of ₹ 76,000 was made during the year 2013

(iii) Interim Dividend paid ₹ 32,000

Sol.:

(Imp.)

Schedule/Statement of Changes in Working Capital

Particulars	2012 (₹)	2013 (₹)	Increase in W.C (₹)	Decrease in W.C (₹)
Current Assets :				
Bills Receivable	8,000	8,800	800	
Stock	1,20,000	93,600		26,400
Debtors	72,000	76,000	4,000	
Cash at Bank	26,400	60,800	34,400	
Total (A)	2,26,400	2,39,200		

Current Liabilities :				
Sundry Creditors	32,000	11,600	20,400	
Bills Payable	4,800	3,200	1,600	
Provision for Taxation (Assumed as Current Liability)	64,000	72,000		8,000
Provision for doubtful debts	1,600	2,400		800
Total (B)	1,02,400	89,200		
Working Capital (A - B)	1,24,000	1,50,000		
Increase in Working Capital	26,000	–	–	26,000
	1,50,000	1,50,000	61,200	61,200

Funds from Operation

Particulars	Amount (₹)	Particulars	Amount (₹)
To Transfer to General Reserve	16,000	By Balance b/d	64,000
To Depreciation on Building	16,000	By Funds from operations	94,000
To Depreciation on Plant	32,000		
To Interim Dividend	32,000		
To Balance c/d	62,000		
	1,58,000		1,58,000

Investment A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	40,000	By Balance c/d	48,000
To Bank (Purchases)	8,000		
	48,000		48,000

Buildings A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,60,000	By Depreciation	16,000
		By Balance c/d	1,44,000
	1,60,000		1,60,000

Plant A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,48,000	By Depreciation	32,000
To Bank (Purchases)	28,000	By Balance c/d	1,44,000
	1,76,000		1,76,000

Funds Flow Statement (Statement of Sources and Applications)

Sources	Amount	Applications	Amount
	()		()
Funds from operations	94,000	Plant (Purchase)	28,000
		Investments (Purchase)	8,000
		Interim Dividend paid	32,000
		Increase in Working capital	26,000
	94,000		94,000

12. Following are the Balance Sheets of Rani Exports Ltd. for the years 2009 and 2010. You are required to prepare funds flow statement.

Balance Sheet

Liabilities	2009 ()	2010 ()	Assets	2009 ()	2010 ()
Creditors for goods	80,000	1,25,000	Stock	1,00,000	1,35,000
Creditors for expenses	5,000	6,000	Sundry Debtors	1,12,500	1,22,500
Bills payable	50,000	55,000	Cash	20,000	32,500
Share Capital	2,75,000	3,10,000	Prepaid expenses	12,500	11,000
Securities premium	25,000	40,000	Plant and Machinery	3,50,000	4,40,000
Profit & Loss Account	50,000	1,00,000	Goodwill	50,000	35,000
Debentures	1,50,000	1,00,000	Investments	90,000	90,000
General Reserve	1,00,000	1,30,000			
	7,35,000	8,66,000		7,35,000	8,66,000

Sol.:

(Imp.)

Statement of Changes in Working Capital

Particulars	2009 ()	2010 ()	Increase in W.C ()	Decrease in W.C ()
Current Assets:				
Stock	1,00,000	1,35,000	35,000	
Sundry Debtors	1,12,500	1,22,500	10,000	
Cash	20,000	32,500	12,500	
Prepaid expenses	12,500	11,000		1,500
Total (A)	2,45,000	3,01,000		

Current Liabilities:				
Creditors for goods	80,000	1,25,000		45,000
Creditors for expenses	5,000	6,000		1,000
Bills Payable	50,000	55,000		5,000
Total (B)	1,35,000	1,86,000		
Working Capital (A - B)	1,10,000	1,15,000		
Increase in Working Capital	5,000			5,000
	1,15,000	1,15,000	57,500	57,500

Funds from Operation

Particulars	Amount (₹)	Particulars	Amount (₹)
To General Reserve (Transfer)	30,000	By Balance b/d	50,000
To Goodwill (written off)	15,000	By Funds from operation	95,000
To Balance c/d	1,00,000		
	1,45,000		1,45,000

Funds Flow Statement (Statement of Sources and Applications)

Sources	Amount (₹)	Applications	Amount (₹)
Issue of shares (Increase in share capital)	35,000	Redemption of debentures	50,000
Increase in share premium	15,000	Plant and machinery (Purchase)	90,000
Funds from operation	95,000	Increase in working capital	5,000
	1,45,000		1,45,000

13. The following are the summaries of the Balance Sheets of Ajay Ltd. as at 31-12-1994 and 1995.

Balance Sheet

Liabilities	31-12-94 (₹)	31-12-95 (₹)	Assets	31-12-94 (₹)	31-12-95 (₹)
Share Capital	2,00,000	2,50,000	Land and Buildings	2,00,000	1,90,000
General Reserves	50,000	60,000	Plant	1,50,000	1,74,000
Profit and Loss a/c	30,500	30,600	Stock	1,00,000	74,000
Bank Loan (Short term)	70,000	-	Debtors	80,000	64,200
Creditors	1,50,000	1,35,200	Cash	500	600
Provision for Taxation	30,000	35,000	Bank	-	8,000
	5,30,500	5,10,800		5,30,500	5,10,800

Additional Information:

- (a) Depreciation was written off on Plant ₹ 14,000 in 1995.
- (b) Dividend of ₹ 20,000 was paid during 1995.
- (c) Income Tax Provision made during the year was ₹ 25,000
- (d) A piece of land has been sold during the year at cost.

You are required to prepare a Statement Showing Sources and Applications of Funds for the year 1995 and schedule of changes in Working Capital.

Sol.:

Schedule of Changes in Working Capital

Particulars	1994 (₹)	1995 (₹)	Increase in W.C (₹)	Decrease in W.C (₹)
Current Assets:				
Stock	1,00,000	74,000		26,000
Debtors	80,000	64,200		15,800
Cash	500	600	100	
Bank		8,000	8,000	
Total (A)	1,80,500	1,46,800		
Current Liabilities:				
Bank loan	70,000		70,000	
Creditors	1,50,000	1,35,200	14,800	
Total (B)	2,20,000	1,35,200		
Working Capital (A - B)	(39,500)	11,600		
Net Increase in W.C	51,100			51,100
	11,600	11,600	92,900	92,900

Statement of Sources and Applications (Funds Flow Statement) for the year ended 31st Dec. 1995

Sources	Amount (₹)	Application	Amount (₹)
Issue of capital	50,000	Purchase of Plant	38,000
Sales of Land and Building	10,000	Income Tax paid during 2007	20,000
Funds from operation	69,100	Payment of dividend	20,000
		Net increase in W.C	51,100
	1,29,100		1,29,100

Working Notes:**Plant A/c**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,50,000	By Depreciation	14,000
To cash-purchases (Balancing figure)	38,000	By balance c/d	1,74,000
	1,88,000		1,88,000

Provision for Taxation A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To cash (Tax paid) (Balancing figure)	20,000	By Balance b/d	30,000
To Balance c/d	35,000	By adjusted P&L a/c	25,000
	55,000		55,000

Adjusted Profit & Loss A/c

Particulars	Amount (₹)	Particulars	Amount (₹)
To Depreciation	14,000	By Balance b/d	30,500
To Transfer to General Reserve	10,000	By Funds from Operations	69,100
To Provision for Taxation	25,000	(Balancing figure)	
To Dividend	20,000		
To Balance c/d	30,600		
	99,600		99,600

Exercise Problems

1. From the following Balance Sheet of X Co. Ltd. Prepare a Statement of Changes in Working Capital and the Funds Flow Statement for the year ended 31st March, 2006.

BALANCE SHEETS as on 31st March

Liabilities	2005 Rs.	2006 Rs.	Assets Rs.	2005 Rs.	2006
Share Capital	3,00,000	3,50,000	Goodwill	1,00,000	80,000
Debentures	1,50,000	2,50,000	Machinery	4,10,000	5,40,000
General Reserve	1,00,000	1,50,000	Investment	30,000	80,000
Profit & Loss	60,000	70,000	Discount on Issue of		
Provision for			Debentures	5,000	–
Depreciation			Cash at Bank	1,20,000	1,30,000
on Machinery	90,000	1,30,000	Sundry Debtor	80,000	1,90,000
Sundry Creditors	75,000	1,10,000	Stock	40,000	55,000
Bills Payable	10,000	15,000			
	7,85,000	10,75,000		7,85,000	10,75,000

During the year investment costing Rs. 30,000 were sold for Rs. 28,000 A new machine purchased for Rs. 45,000 and the payment was made in fully paid shares.

[Ans : 1,87,000]

2. The following are the summarised Balance sheets of a company as on 31st Dec- 2005 and 2006:

Liabilities	31-12-2005 Rs.	31-12-2006 Rs.
Equity share Capital	2,00,000	2,40,000
8% Debentures	50,000	–
Share Premium	–	10,000
General Reserve	30,000	50,000
Profit & Loss Account	48,000	68,000
Sundry Creditors	1,30,000	1,50,000
Proposed Dividend	20,000	24,000
Provision for Depreciation :		
Plant & Machinery	1,40,000	1,50,000
Furniture	6,000	4,000
	6,24,000	6,96,000

Assets		
Land and Buildings	1,05,000	1,50,000
Plant and Machinery (at cost)	2,90,000	3,20,000
Furniture (at cost)	9,000	10,000
Inventories	1,30,000	1,05,000
Sundry Debtors	75,000	85,000
Cash	15,000	26,000
	6,24,000	6,96,000

Additional information is as follows:

1. Furniture which cost Rs.5,000, Written down value 1,000 was sold during the year 2006 for Rs.2,000
2. Plant and Machinery which cost Rs.20,000 and in respect of which Rs. 13,000 had been written off as depreciation was sold during the year for Rs.3,000
4. The dividend of 2005 was paid during 2006.

You are required to prepare (a) a Statement of changes in working capital during 2000 and (b) Funds flow statement for the year 2000.

[Ans : 1,71,000]

Short Question and Answers

1. What is a funds flow statement?

Ans :

Meaning

Funds Flow Statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. It is a statement showing sources and uses of funds for a period of time.

Definitions

- i) **According to Foulke** "A statement of sources and application of funds is a technical device designed to analyse the changes in the financial condition of a business enterprise between two dates."
- ii) **According to Anthony** "The funds flow statement describes the sources from which additional funds were derived and the use to which these sources were put."
- iii) I.C.W.A. in Glossary of Management Accounting terms defines Funds Flow Statement as "a Statement either prospective or retrospective, setting out the sources and applications of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilisation and application of the same."

Thus, funds flow statement is a statement which indicates various means by which the funds have been obtained during a certain period and the ways to which these funds have been used during that period. The term 'funds' used here means working capital, i.e., the excess of current assets over current liabilities.

2. Importance of funds flow statement.

Ans :

i) It helps in the analysis of financial operations

The financial statements reveal the net effect of various transactions on the operational and financial position of a concern. The balance sheet gives a static view of the resources of a business and the uses to which these resources have been put at a certain point of time. But it does not disclose the causes for changes in the assets and

liabilities between two different points of time. The funds flow statement explains causes for such changes and also the effect of these changes on the liquidity position of the company. Sometimes a concern may operate profitably and yet its cash position may become more and more worse. The funds flow statement gives a clear answer to such a situation explaining what has happened to the profits of the firm.

ii) It throws light on many perplexing questions of general interest which otherwise may be difficult to be answered, such as

- (a) Why were the net current assets lesser in spite of higher profits and vice-versa?
- (b) Why more dividends could not be declared in spite of available profits ?
- (c) How was it possible to distribute more dividends than the present earnings ?
- (d) What happened to the net profit ? Where did they go ?
- (e) What happened to the proceeds of sale of fixed assets or issue of shares, debentures, etc. ?
- (f) What are the sources of the repayment of debt ?
- (g) How was the increase in working capital financed and how will it be financed in future ?

iii) It helps in the formation of a realistic dividend policy

Sometimes a firm has sufficient profits available for distribution as dividend but yet it may not be advisable to distribute dividend for lack of liquid or cash resources. In such cases, a funds flow statement helps in the formation of a realistic dividend policy.

iv) It helps in the proper allocation of resources

The resources of a concern are always limited and it wants to make the best use of these resources. A projected funds flow statement constructed for the future helps in making managerial decisions. The firm can plan the deployment of its resources and allocate them among various applications.

v) It acts as a future guide

A projected funds flow statement also acts as a guide for future to the management. The management can come to know the various problems it is going to face in near future for want off units. The firm's future needs of funds can be projected well in advance and also the timing of these needs. The firm can arrange to finance these needs more effectively and avoid future problems.

3. State the purpose of funds flow statement.

Ans :

Funds flow statement or statement of changes in the financial position of a firm serves the following purposes,

- (a) It helps the investors to determine the most significant factors which are responsible for facilitating changes in financial position.
- (b) It helps to identify internal factors (i.e. internal operations) and external sources through which changes have been made.
- (c) It helps to focus on the factors that are responsible for estimating the differences in equity, assets and liabilities.
- (d) It is useful to emphasize the changes which took place in the investment assets.

4. What are the objectives of funds flow statement.

Ans :

The main objectives of funds flow statement are as follows,

- (a) To represent the changes in the financial position of a firm during the accounting period.
- (b) To estimate and measure the funds generated or depleted through internal operations.
- (c) To determine the various sources from which the funds can be collected and also the different strategies with the help of which such funds can be utilized.

5. Explain the limitations of funds flow statement.

Ans :

The funds flow statement has a number of uses, however, it has certain limitations also, which are listed below:

- i) It should be remembered that a funds flow statement is not a substitute of an income statement or a balance sheet. It provides only some additional information as regards changes in working capital.
- ii) It cannot reveal continuous changes.
- iii) It is not an original statement but simply are-arrangement of data given in the financial statements.
- iv) It is essentially historic in nature and projected funds flow statement cannot be prepared with much accuracy.
- v) Changes in cash are more important and relevant for financial management than the working capital.

6. Funds From Operations (or) Trading Profits

Ans :

Trading profits or the profits from operations of the business are the most important and major source of funds. Sales are the main source of inflow of funds into the business as they increase current assets (cash, debtors or bills receivable) but at the same time funds flow out of business for expenses and cost of goods sold. Thus, the net effect of operations will be a source of funds if inflow from sales exceeds the outflow for expenses and cost of goods sold and vice-versa. But it must be remembered that funds from operations do not necessarily mean the profit as shown by the profit and loss account of a firm, because there are many non-fund or non-operating items which may have been either debited or credited to profit and loss account.

The examples of such items on the debit side of a profit and loss account are : Amortization of fictitious and intangible assets such as goodwill, Preliminary expenses and Discount on issue of shares and debentures written off; Appropriation of Retained Earnings, such as Transfers to Reserves, etc., Depreciation and depletion ; Loss on sale of fixed assets ; Payment of dividend, etc. The non-fund items are those which may be operational expenses but they do not affect funds of the business, e.g., for depreciation charged to profit and loss account, funds really do not move out of business. Non-operating items are those which although may result in the outflow of funds but are not related to the trading operations of the business, such as loss on sale of machinery or payment of dividends.

7. What are the applications of funds?

Ans :

1. Funds lost in operations

Sometimes the result of trading in a certain year is a loss and same funds are lost during that period in trading operations. Such loss of funds in trading amounts to an outflow of funds and is treated as an application of funds.

2. Redemption of preference share capital

If during the year any preference shares are redeemed, it will result in the outflow of funds and is taken as an application of funds. When the shares are redeemed at premium or discount, it is the net amount paid (including premium or excluding discount, as the case may be). However, if shares are redeemed in exchanges of some other type of shares or debentures, it does not constitute an outflow of funds as no current account is involved in that case.

3. Repayment of loans or redemption of debentures, etc.

In the same way as redemption of preference share capital, redemption of debentures or repayment of loans also constitute an application of funds.

4. Purchase of any non-current or fixed asset

When any fixed or non-current asset like land, building, plant and machinery, furniture, long-term investments, etc. are purchased, funds outflow from the business. However, if fixed assets are purchased for a consideration of issue of shares or debentures or if some fixed asset is exchanged for another, it does not involve any funds and hence not an application of funds.

5. Payments of dividends and tax

Payments of dividends and tax are also applications of funds. It is the actual payment of dividend (may be interim dividend) and tax which should be taken as an outflow of funds and not the mere declaration of dividend or creating of a provision for taxation.

Choose the Correct Answers

1. Which of the following are sources of funds ? [c]
 - a) Non-trading receipts
 - b) Funds from operations
 - c) Both (a) and (b)
 - d) Non-trading payments
2. Which of the following is a non-current asset ? [a]
 - a) Goodwill
 - b) Cash balance
 - c) Bills receivable
 - d) None
3. Application of funds is a result of [d]
 - a) Sale of plant
 - b) Payment of creditors
 - c) Issue of share capital
 - d) Purchase of land
4. Parties who are interested in knowing the financial position of a business are, [d]
 - a) Owners
 - b) Employees
 - c) Financial institutions
 - d) All the above
5. Working capital increases when there is [d]
 - a) Increase in current liabilities
 - b) Decrease in current liabilities
 - c) Increase in current assets
 - d) Both (b) and (c)
6. Working capital = [c]
 - a) $WC = \text{Net profit} + \text{Current liabilities}$
 - b) $WC = \frac{\text{Fixed assets}}{\text{Current assets}}$
 - c) $WC = \text{Current assets} - \text{Current liabilities}$
 - d) $WC = \text{Fixed assets} + \text{Current liabilities}$
7. Statement of changes in working capital is prepared in [b]
 - a) Balance sheet
 - b) Funds flow statement
 - c) Cash flow statement
 - d) None
8. Funds flow statement is useful in [d]
 - a) Allocation of resources
 - b) Analysis of financial statements
 - c) Identifying credit worthiness of a firm
 - d) All the above
9. Working capital from business operations can be determined from [b]
 - a) Balance sheet
 - b) Profit and loss account
 - c) Funds flow statement
 - d) None
10. For funds flow statement provision for taxation will be treated as an item of [d]
 - a) Internal application
 - b) External source
 - c) External application
 - d) Internal source

Fill in the Blanks

1. When one account is current and another is non-current it results into the preparation of _____
2. Difference between current assets and current liabilities is known as _____
3. Building sold on credit is a _____ of fund in a funds flow statement.
4. A decrease in current liabilities results in _____ of working capital.
5. Any transaction that decreases working capital is _____
6. Fund flow refers to change in _____ capital
7. Building sold on credit of a _____ of funds
8. Goods purchased on credit _____ in flow of funds
9. Commission outstanding is an _____ of fund
10. Any gain on sale of non current asset should be _____ from the netprofit for determining funds from operation.

ANSWERS

1. Flow of funds
2. Working capital
3. Source
4. Increase
5. Application of funds
6. Working
7. Source
8. Does not result
9. Application
10. Deducted

UNIT V

CASH FLOW ANALYSIS (AS-3):

Meaning – Importance – Differences between Funds Flow and Cash Flow Statements – Procedure for preparation of Cash Flow Statement.

5.1 CASH FLOW ANALYSIS (AS-3)

5.1.1 Meaning

Q1. What do you mean by cash flow statement?

(OR)

Define the term cash flow statement.

Ans :

(Imp.)

Meaning

Cash Flow Statement is a statement which describes the inflows (sources) and outflows (uses) of cash and cash equivalents in an enterprise during a specified period of time. Such a statement enumerates net effects of various business transactions on cash and its equivalents and takes into account receipts and disbursements of cash. A cash flow statement summarizes the causes of changes in cash position of a business enterprise between dates of two balance sheets. According to AS-3 (Revised), an enterprise should prepare a cash flow Statement and should present it for each period for which financial statements are prepared. The terms cash, cash equivalents and cash flows are used in this statement with the following meanings:

1. Cash comprises cash on hand and demand deposits with banks.
2. Cash equivalents are short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Cash equivalent are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes. For an investment to qualify as a cash equivalent, it must be readily convertible to a known amount of cash and be subject to an insignificant risk of change in value. Therefore, an investment normally qualifies as a cash equivalent only when it has a short-maturity, of say, three months or less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they are in substance, cash equivalents: for example, preference shares of a company acquired shortly before their specified redemption date (provided there is only an insignificant risk of failure of the company to repay the amount at maturity).
3. Cash flows are inflows and outflows of cash and cash equivalents. Flow of cash is said to have taken place when any transaction makes changes in the amount of cash and cash equivalents available before happening of the transaction. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (source) and if it results in the decrease of total cash, it is known as outflow (use) of cash.

Cash flows exclude movements between items that constitute cash or cash equivalents because these components are part of the cash management of an enterprise rather than part of its operating, investing and financing activities. Cash management includes the investment of excess cash in cash equivalents.

5.1.2 Importance

Q2. State the importance of cash flow statement.

Ans : (Imp.)

(a) Helps to make Cash Forecast

Cash Flow Statement, no doubt, helps the management to make a cash forecast for the near future. A projected Cash Flow Statement helps the management about the cash position which is the basis for all operations and, thus, the management sees light relating to cash position, viz. how much cash is needed for a specific purpose, sources of internal and external issues, etc.

(b) Helps the Internal Management

It helps the internal management to determine the financial policy to be adopted in future since it supplies information relating to funds, e.g. taking decision about the replacement of fixed assets or repayment of long-term liabilities, etc.

(c) Reveals the Cash Position

It is a significant pointer about the movement of cash, i.e. whether there is any increase in cash or decrease in cash and the reasons thereof which helps the management. Moreover, it explains the reasons for small cash balance even though there is sufficient profit, or vice versa. Besides, the management can compare the original forecast with the actual one in order to understand the trend of movement of cash and the variation therefore.

(d) Reveals the result of Cash Planning

How far and to what extent the cash planning becomes successful is revealed by the analysis of Cash Flow Statement. The same is possible

by making a comparison between the projected Cash Flow Statement/Cash Budget and the actual one - and the measures to be taken accordingly.

Q3. Explain the features of cash flow statement.

Ans : (Imp.)

- (i) Cash Flow Statement is very dynamic in character since it records the investment of cash from the beginning of the period to the end of the period.
- (ii) It is a periodical statement as it covers a particular period.
- (iii) This statement does not recognize matching principles.
- (iv) This statement helps to calculate Cash from Operations/Cash Flows from Operating Activities.
- (v) It exhibits the changes of financial positions relating to operational activities, investing activities and financial activities, respectively, by which an analyst can draw his conclusion.

Q4. Explain the advantages and disadvantages of cash flow statement.

(OR)

Describe the advantage and limitations of cash flow statement.

Ans : (Imp.)

Advantages

The chief advantages of cash flow statement are as follows :

1. Since a cash flow statement is based on the cash basis of accounting, it is very useful in the evaluation of cash position of a firm.
2. A projected cash flow statement can be prepared in order to know the future cash position of a concern so as to enable a firm to plan and coordinate its financial operations properly. By preparing this statement, a firm can come to know as to how much cash will be generated into the firm and how much cash will be needed to make various payments and hence the firm can well plan to arrange for the future requirements of cash.

- 3) A comparison of the historical and projected cash flow statements can be made so as to find the variations and deficiency or otherwise in the performance so as to enable the firm to take immediate and effective action.
 - 4) A series of intra-firm and inter-firm cash flow statements reveals whether the firm's liquidity (short-term paying capacity) is improving or deteriorating over a period of time and in comparison to other firms over a given period of time.
 - 5) Cash flow statement helps in planning the repayment of loans, replacement of fixed assets and other similar long-term planning of cash. It is also significant for capital budgeting decisions.
 - 6) It better explains the causes for poor cash position in spite of substantial profits in a firm by throwing light on various applications of cash made by the firm. It further helps in answering some intricate questions like -what happened to the net profits? Where did the profits go? Why more dividends could not be paid in spite of sufficient available profit?
 - 7) Cash flow analysis is more useful and appropriate than funds flow analysis for short-term financial analysis as in a very short period it is cash which is more relevant than the working capital for forecasting the ability of the firm to meet its immediate obligations.
 - 8) Cash flow statement prepared according to AS-3 (Revised) is more suitable for making comparisons than the funds flow statement as there is no standard format used for the same.
 - 9) Cash flow statement provides information of all activities classified under operating, investing and financing activities, The funds statement even when prepared on cash basis, did not disclose cash flows from such activities separately, Thus, cash flow statement is more useful than the funds statement.
- (ii) Some people feel that as working capital is a wider concept of funds, a funds flow statement provides a more complete picture than cash flow statement.
 - (iii) Cash flow statement is not suitable for judging the profitability of a firm as non-cash charges are ignored while calculating cash flows from operating activities.
 - (iv) A cash flow statement is not a substitute of an income statement, it is complementary to an income statement. Net cash flow does not mean the net income of a firm.
 - (v) A cash flow statement is also not a substitute of funds flow statement which provides information relating to the causes that lead to increase or decrease in working capital.
 - (vi) A comparative study of cash flow statements may give misleading results.

5.2 PROCEDURE FOR PREPARATION OF CASH FLOW STATEMENT

Q5. Explain the procedure for preparing cash flow statement.

Ans :

(Imp.)

According to AS-3 (Revised), the cash flow statement should report cash flows during the period classified by operating, investing and financing activities. Thus, cash flows are classified into three main categories :

1. Cash flows from operating activities.
2. Cash flows from investing activities.
3. Cash flows from financing activities.

1. Cash Flows from Operating Activities

Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities.

The amount of cash flows arising from operating activities is a key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise, pay dividends, repay loans, and make new investments without recourse to

Limitations

Despite a number of uses, cash flow statements suffers from the following limitations :

- (i) As cash flow statement is based on cash basis of accounting, it ignores the basic accounting concept of accrual basis.

external sources of financing. Information about the specific components of historical operating cash flows is useful, in conjunction with other information, in forecasting future operating cash flows.

Cash flows from operating activities are primarily derived from the principal revenue-producing activities of the enterprise. Therefore, they generally result from the transactions and other events that enter into the determination of net profit or loss.

Examples of cash flows from operating activities (for non-financial companies) are:

- (a) cash receipts from the sale of goods and the rendering of services
- (b) cash receipts from royalties, fees, commissions, and other revenue
- (c) cash payments to suppliers of goods and services
- (d) cash payments to and on behalf of employees
- (e) cash receipts and cash payments of an insurance enterprise for premiums and claims, annuities and other policy benefits.
- (j) cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities ; and
- (g) cash receipts and payments relating to futures contracts, forward contracts, option contracts, and swap contracts when the contracts are held for dealing or trading purposes.

Some transactions, such as the sale of an item of plant, may give rise to a gain or loss which is included in the determination of net profit or loss. However, the cash flows relating to such transactions are cash flows from investing activities.

Examples of cash flows from operating activities (for financial companies) are

- (i) Receipts from interest and commission
- (ii) Receipts from recoveries of loans previously written off.
- (iii) Receipts from sale of securities.
- (iv) Dividend received on securities.

- (v) Payment of interest on loans and deposits.
- (vi) Payments to employees.
- (vii) Payments for purchase of securities.
- (viii) Cash payments or refunds of income taxes unless they can be specifically identified with financing, and investing activities.

2. Cash Flows From Investing Activities

Investing activities are the acquisition and disposal of long term assets and other investments not included in cash equivalents. The separate disclosure of cash flows arising from investing activities is important because the cash flows represent the extent to which expenditures have been made for resources intended to generate future income and cash flows.

Examples

- (a) cash payments to acquire fixed assets (including intangibles) These payments include those relating to capitalised research & development costs and self constructed fixed assets;
- (b) cash receipts from disposal of fixed assets (including intangibles);
- (c) cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes);
- (d) cash receipts from disposal of shares, warrants, or debt instruments of other enterprises and interest in joint venture (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes) ;
- (e) cash advances and loans made to third parties (other than advances and loans made by a financial enterprise);
- (f) cash receipts from the repayment of advances and loans made to third parties (other than loans of a financial enterprise);
- (g) cash payments for futures contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes, or the payments are classified as financing activities; and

- (h) cash receipts from futures contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes, or the receipts are classified activities.

3. Cash Flows From Financing Activities

Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise.

The separate disclosure of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by providers of funds (both capital and borrowings) to the enterprise.

Examples

- (a) Cash proceeds from issuing shares or other similar instruments :
- (b) Cash proceeds from issuing debentures, loans, notes, bonds, and other short-or long-term borrowings; and
- (c) Cash repayments of amounts borrowed such as redemption of debentures, bonds, preference shares.

Q6. Explain the proforma of cash flow statement.

Ans :

A widely used format of cash flow statement (Direct Method) is given below:

Cash Flow Statement (for the year ended.....)

Particulars	₹	₹
Cash Flows From Operating Activities		
Cash receipt from customers	xxx	
Cash paid to suppliers and employees	(xxx)	
Cash generated from operations	xxx	
Income - tax paid	(xxx)	
Cash flow before extraordinary items	xxx	
Extraordinary items	xxx	
Net cash from Operating activities (A)		xxx
Cash Flows From Investing Activities		
Individual Items of cash inflows and outflows from investing activities (such as purchase/sale of fixed assets, purchase or sale of investments, interest received, dividend received etc.	xxx xxx	
Net Cash from (used in) investing activities (B)	xxx	xxx
Cash Flows From Financing Activities		
Individual items of cash inflows and outflows from financing activities (such as) proceeds from issue of shares, long-term borrowings, repayments of long-term borrowings, interest paid, dividend paid etc.)	xxx xxx	
Net cash from (used in) financing activities (C)	xxx	xxx
Net Increase (Decrease) in cash and cash equivalents		xxx
Cash and cash equivalents at the beginning of the period		xxx
Cash and cash equivalents at the end of the period		xxx

Format of Cash Flow Statement (Indirect Method) :**Revised Format of Cash Flow Statement as per AS-3 (Indirect Method)**

Particulars	Amount ()	Amount ()
Cash Flows From Operating Activities :		
Net profit before taxation (excluding extraordinary profit/loss)	xxx	
Add : Depreciation	xxx	
Good will written off	xxx	
Preliminary expenses written off	xxx	
Interest expenses (for long - term loan/debentures)	xxx	
Loss on sale of assets, long-term investments	xxx	
Proposed dividends	xxx	
Less : Profit on sale of investment, assets etc	xxx	
Interest income (from long - term investments)	xxx	
Dividend income (from long -term investments)	xxx	
Operating Profit/Cash Generated from Operations Before Working Capital Changes	xxx	
Decrease in Debtors/ (Increase in Debtors)	xxx	
Decrease instocks/ (Increase in Stocks)	xxx	
Decrease in Bills Receivable / (Increase in Bills Receivable)	xxx	
Decrease in Prepaid Expenses / (Increase in Prepaid Expenses)	xxx	
Increase in Creditors / (Decrease in Creditors)	xxx	
Increase in Bills Payable / (Decrease in Bills Payable)	xxx	
Increase in Outstanding Expenses / (Decrease in Outstanding Expenses)	xxx	
Cash Generated from Operations	xxx	
Less : Income taxes paid	xxx	
Net Cash from Operating Activities (A)	xxx	
Cash Flows from Investing Activities :		
Purchase of Fixed Assets	(xxx)	
Purchase of Investments	(xxx)	
Proceeds from Sale of Fixed Assets	xxx	
Proceeds from Sale of Investments	xxx	
Interest Received	xxx	
Dividend Received	xxx	xxx
Net Cash from Investing Activities (B)		xxx
Cash Flows from Financing Activities :		
Proceeds from Issue of Share Capital	xxx	
Proceeds from Long- term Loans	xxx	
Proceeds from Issue of Debentures	xxx	
Redemption of Preference Shares	(xxx)	
Redemption of Debentures	(xxx)	
Interest paid	(xxx)	

Repayment of Long-term Loans/Borrowing	(xxx)	
Dividends paid	(xxx)	
Interim dividends paid	(xxx)	
Net Cash from Financing Activities (C)		xxx
Net Increase In Cash and Cash Equivalents (A + B + C)		xxx
Add : Cash and Cash Equivalents at the Beginning of the Period		xxx
Cash and Cash Equivalents at the End of the Period		xxx

Note : The values in brackets indicate deductions i.e., (–) sign.

5.3 DIFFERENCES BETWEEN FUNDS FLOW AND CASH FLOW STATEMENTS

Q7. How does a cash flow statement differ from funds flow statement.

(OR)

Distinguish between funds flow statement and cash flow statement.

(OR)

Compare and contrast funds flow statement and cash flow statement.

Ans :

(Imp.)

S.No.	Basis of Difference	Funds Flow Statement	Cash Flow Statement
1.	Basis of Concept	It is based on a wider concept of funds, i.e., working capital	It is based on a narrower concept of funds, i.e., cash
2.	Basis of Accounting	It is based on accrual basis of accounting.	It is based on cash basis of accounting
3.	Schedule of changes in working Capital	Schedule of changes in working capital is prepared to show the changes in current assets and current liabilities.	No such schedule of changes in working capital is prepared
4.	Method of Preparing	Fund Flow Statement reveals the the sources and applications of funds. The net difference between sources and applications of funds represents net increase or decrease in working capital.	It is prepared by classifying all cash inflows and outflows in terms of operating, investing and financing activities. The net difference represents the net increase or decrease in cash and cash equivalents.
5.	Basis of Usefulness	It is useful in planning intermediate and long term financing	It is more useful for short-term analysis and cash planning of the business.
6.	Basis of Improvement	Improvement in funds (working capital) position of a firm does not necessarily lead to improvement in cash position.	Improvement in cash position results in improvement of funds (working capital) position of the firm
7.	Cash and Cash Equivalents	The opening and closing balances of cash are included in the schedule of changes in working capital.	The balances of cash and cash equivalents at the beginning and at the end of the period are shown in the cash flow statement.

PROBLEMS**1. Calculate Cash generated from Operations**

Purchases	₹ 1,50,000
Sales	₹ 2,00,000
Expenses	₹ 20,000
Creditors at the beginning of the year	₹ 30,000
Creditors at the end of the year	₹ 40,000

Sol :**Calculation of Cash from Operations (If Profit is not Given)**

$$\begin{aligned}
 \text{Cash from Operation} &= \text{Cash Sales} - (\text{Cash Purchases} + \text{Cash Operating Expenses}) \\
 &= 2,00,000 - (1,40,000 + 20,000) \\
 &= 2,00,000 - 1,60,000 \\
 &= 40,000
 \end{aligned}$$

Working Notes

$$\begin{aligned}
 \text{Cash Purchases} &= (\text{Total Purchases} + \text{Opening Creditor}) - \text{Closing Creditor} \\
 &= (1,50,000 + 30,000) - 40,000 \\
 &= 1,80,000 - 40,000 \\
 &= 1,40,000
 \end{aligned}$$

2. Calculate cash from operations:

Total sales	₹ 80,000
Debtors at the beginning	₹ 6,000
Debtors at the end	₹ 11,000
Total purchases	₹ 60,000
Creditors at the beginning	₹ 10,000
Creditors at the end	₹ 15,000
Total operating expenses	₹ 6,000
Prepaid expenses at the Beginning	₹ 2,000
Prepaid expenses at the End	₹ 1,000
Outstanding expenses at the end	₹ 2,000

Sol :**Calculation of Cash from Operations (If Profit is not Given)**

$$\text{Cash from Operation} = \text{Cash Sales} - (\text{Cash Purchases} + \text{Cash Operating Expenses})$$

Cash Sales

$$\begin{aligned}
 \text{Cash Sales} &= \text{Total Sales} + \text{Opening Debtors} - \text{Closing Debtors} \\
 &= 80,000 + 6,000 - 11,000 = 75,000
 \end{aligned}$$

Cash Purchases

$$\begin{aligned}\text{Cash Purchases} &= \text{Total Purchases} + \text{Opening Creditors} - \text{Closing Creditors} \\ &= 60,000 + 10,000 - 15,000 \\ &= 55,000\end{aligned}$$

Cash Operating Expenses

$$\begin{aligned}\text{Cash Operating Expenses} &= (\text{Total Operating Expenses}) - (\text{Decrease in prepaid expenses} \\ &\quad + \text{Closing O/S Expenses.}) \\ &= 6,000 - (1,000 + 2,000) \\ &= 6,000 - 3,000 \\ &= 3,000 \\ \therefore \text{Cash from Operations} &= 75,000 - (55,000 + 3,000) \\ &= 75,000 - 58,000 \\ &= 17,000.\end{aligned}$$

3. Calculate cash from operations:

Purchases ` 2,25,000; Sales ` 3,00,000; Expenses ` 40,000,
Debtors at the beginning of the year ` 45,000
Debtors at the end of the year ` 60,000.

Sol :

Calculation of Cash from Operations (If Profit is not Given)

$$\text{Cash from Operation} = \text{Cash Sales} - (\text{Cash Purchases} + \text{Cash Operating Expenses})$$

Cash Sales

$$\begin{aligned}\text{Cash Sales} &= \text{Total Sales} + \text{Opening Debtors} - \text{Closing Debtors} \\ &= 3,00,000 + 45,000 - 60,000 = 2,85,000\end{aligned}$$

Cash Purchases

$$\begin{aligned}\text{Cash Purchases} &= \text{Total Purchases} + \text{Opening Creditors} - \text{Closing Creditors} \\ &= 2,25,000 + 0 - 0 \\ &= 2,25,000\end{aligned}$$

Cash Operating Expenses

$$\begin{aligned}\text{Cash Operating Expenses} &= 40,000 \\ \text{Cash from Operations} &= 2,85,000 - (2,25,000 + 40,000) \\ &= 2,85,000 - 2,65,000 \\ &= 20,000\end{aligned}$$

4. From the following summarized financial statements of Exway Ltd. as at 31st March, 2005 and 31st March, 2006 respectively prepare Cash Flow Statement by Indirect Method.

Capital & Liabilities	as at 31-3-2005 Rs.	as at 31-3-2006 Rs.	Property & Assets	31-3-2005 Rs.	31-3-2006 Rs.
Share Capital :			Land at cost	2,00,000	2,00,000
10% Redeemable			Building at cost		
Preference Share			less Dep.	3,00,000	2,75,000
Capital	10,00,000	5,00,000	Plant & Mach.		
Equity Shares Capital			at cost		
of Rs. 10 each			Less Dep.	27,00,000	30,00,000
fully paid	30,00,000	32,00,000	Investments		
Securities Premium	3,00,000	2,70,000	(at cost)	8,00,000	8,50,000
Capital Redemption			Stock in Trade	16,00,000	26,00,000
Reserve	---	3,00,000	Book Debts	20,00,000	18,75,000
General Reserve	5,00,000	3,00,000	Loans & Advances	3,50,000	1,75,000
Profit & Loss A/c	3,20,000	4,30,000	Cash & Bank		
Secured Loan	8,80,000	9,70,000	Balances	50,000	25,000
Proposed Dividend	4,00,000	5,30,000			
Sundry Creditors	16,00,000	25,00,000			
	80,00,000	90,00,000		80,00,000	90,00,000

- (a) During the year 5,00,000 redeemable preference shares of Rs. 100 were redeemed at a premium of 10%. The premium was paid out of securities premium account. For this purpose 20,000 equity shares were issued fully paid for cash at a premium of 10%. The Capital Redemption Reserve was credited out of transfer from General Reserve.
- (b) Depreciation provided during the year was : on Building Rs.25,000; on Plant and Machinery Rs. 3,00,000.
- (c) A plant (original cost Rs.95,000, depreciation provided till 31-3-2005 Rs. 78,000) was sold for Rs. 35,000 and profit on sale was transferred to Profit and Loss A/c.
- (d) Dividend proposed for 2005 was fully paid in 2006.

Sol :

Cash Flow Statement

Particulars	Rs.	Rs.
A) Cash Flows from Operating Activities		
Net Profit before taxation and extraordinary items (WN-1)	7,22,000	
Adjustment for Depreciation (Rs.3,00,000 + Rs.25,000)	3,25,000	
Operating Profit before working capital changes	10,47,000	
Increase in Creditors	9,00,000	
Decrease in Loans & Advances	1,75,000	
Decrease in Debtors	1,25,000	
Increase in Stock in Trade	(10,00,000)	
Net Cash from operating activities		12,47,000
B) Cash Flows from Investing Activities		
Sale of Plant	35,000	
Purchase of Plant & Machinery (WN-2)	(6,17,000)	
Purchase of Investments	(50,000)	
Net Cash used in investing activities		(6,32,000)
C) Cash Flows from Financing Activities		
Issue of Equity Shares	2,00,000	
Securities Premium	20,000	
Secured Loan	90,000	
Payment of Dividend	(4,00,000)	
Redemption of Preference Shares (WN-6)	(5,50,000)	
Net Cash used in financing activities		(6,40,000)
Net decrease in Cash and Cash equivalents		(25,000)
Cash and Cash equivalents at the beginning of the period		50,000
Cash and Cash equivalents at the end of the period		25,000

Working Notes :

(1)

Adjusted Profit And Loss Account

Dr.

Cr

Particulars	Rs.	Particulars	Rs.
To Proposed Dividend	5,30,000	By Balance b/d	3,20,000
To General Reserve	1,00,000	By Profit on Sale of Plant	18,000
To Profit & Loss A/c	4,30,000	By Net Profit before taxation and extra - ordinary items	7,22,000
	10,60,000		10,60,000

(2)

Dr. **Plant And Machinery Account** Cr.

Particulars	Rs.	Particulars	Rs.
To Balance b/d	27,00,000	By Depreciation A/c	3,00,000
To Adj. Profit & Loss A/c	18,000	By Bank	35,000
To Bank (Purchase of Plant & Machinery - Bal.Fig.)	6,17,000	By Balance c/d	30,00,000
	33,35,000		33,35,000

(3)

Dr. **Redeemable Preference Share Capital Account** Cr.

Particulars	Rs.	Particulars	Rs.
To Pref. Shareholders A/c	5,00,000	By Balance b/d	10,00,000
To Balance c/d	5,00,000		
	10,00,000		10,00,000

(4)

Dr. **Securities Premium Account** Cr.

Particulars	Rs.	Particulars	Rs.
To Pref. Shareholders A/c	50,000	By Balance b/d	3,00,000
To Balance c/d	2,70,000	By Bank	20,000
	3,20,000		3,20,000

(5)

Dr. **Equity Share Capital Account** Cr.

Particulars	Rs.	Particulars	Rs.
To Balance c/d	32,00,000	By Balance b/d	30,00,000
		By Bank	2,00,000
	32,00,000		32,00,000

(6)

Dr. **Preference Shareholders Account** Cr.

Particulars	Rs.	Particulars	Rs.
To Bank A/c	5,50,000	By Preference share Capital A/c	5,00,000
		By Securities Premium A/c	50,000
	5,50,000		5,50,000

(7)

General Reserve Account

Particulars	Rs.	Particulars	Rs.
To Capital Redemption Reserve	3,00,000	By Balance b/d	5,00,000
To Balance c/d	3,00,000	By Profit & Loss A/c	1,00,000
	6,00,000		6,00,000

5. From the following information prepare Cash Flow Statement by Indirect Method.

Comparative Balance Sheet Excellent Ltd.

Liabilities and Capital	As at 31-3-2006 Rs.	As at 31-3-2005 Rs.	Assets	As at 31-3-2006 Rs.	As at 31-3-2005 Rs.
Share Capital :	50,00,000	40,00,000	Fixed Assets	31,00,000	30,00,000
Reserves and Surplus	15,00,000	5,00,000	Investments	1,50,000	--
Secured Loans	35,00,000	40,00,000	Cash and Bank		
Current Liabilities	50,00,000	60,00,000	Balances	2,50,000	1,25,000
			Stocks, Stores,		
			Work-in-progress	75,00,000	78,75,000
			Sundry Debtors	40,00,000	35,00,000
	1,50,00,000	1,45,00,000		1,50,00,000	1,45,00,000

- (i) The net profit for the year after adjustment in respect of provisions for dividends and taxation was Rs. 10,00,000.
- (ii) There was addition to Fixed Assets during the year amounting to Rs. 4,00,000 and Depreciation for the year was Rs. 3,00,000.

Sol :

Cash Flow Statement

Particulars	Rs.	Rs.
A) Cash Flows from Operating Activities		
Net Profit before taxation and extraordinary items	10,00,000	
Adjustment for Depreciation	3,00,000	
Operating Profit before working capital changes	13,00,000	
Decrease in Stock, Stores & WIP	3,75,000	
Decrease in Current Liabilities	(10,00,000)	
Increase in Sundry Debtors	(5,00,000)	
Net Cash from operating activities		1,75,000
B) Cash Flow from Investing Activities		
Purchase of Fixed Assets	(4,00,000)	
Purchase of Investments	(1,50,000)	
Net Cash used in investing activities		(5,50,000)
C) Cash Flows from Financing Activities		
Issue of Share Capital	10,00,000	
Payment of Secured Loans	(5,00,000)	
Net Cash provided by financing activities		5,00,000
Net increase in Cash and Cash equivalents		1,25,000
Cash and Cash Equivalents at the beginning of the period		1,25,000
Cash and Cash equivalents at the end of the period		2,50,000

6. Following balance sheets of XYZ Co. Ltd., for the years 2005 and 2006 are available. Prepare a Cash Flow Statement by Indirect Method.

Liabilities and Capital	(Rs. in Thousand)		Assets	(Rs. in thousands)	
	2005	2006		2005	2006
Share Capital	150	225	Land	150	150
Securities Premium	–	7.5	Plant	156	150
General Reserve	75	90	Furniture	10.5	13.5
P & L A/c	15	22.5	Investment	90	120
6% Debentures	105	75	Debtors	45	105
Provision for Depn. on Plant	75	84	Stock	90	97.5
Depn. on Furniture	7.5	9	Cash	45	67.5
Tax Payable	30	45			
Sundry Creditors	129	142.5			
	586.5	703.5		586.5	703.5

Additional Information:

- (i) Plant purchased for Rs. 6,00,000 (depreciated value Rs.3,000 was sold for cash Rs. 1,200 on 30th September.
- (ii) On 29th June furniture was purchased for Rs. 3,000.
- (iii) Depreciation on plant 8%. Depreciation on furniture $12\frac{1}{2}\%$ on average cost.
- (iv) Dividend $22\frac{1}{2}\%$ on original share capital.

Sol :

Cash Flow Statement

Particulars	Rs.('000)	Rs.('000)
A) Cash Flows from Operating Activities		
Net Profit before taxation and extraordinary items		61.05
Adjustment for Depreciation	13.50	
Operating Profit before working capital changes	74.55	
Increase in Tax	15.00	
Increase in Creditors	13.50	
Increase in Debtors	(60.00)	
Increase in Stock	(7.50)	
Net Cash from operating activities		35.55
B) Cash Flows from Investing Activities		
Sale of Plant	1.2	
Purchase of Furniture	(3.0)	
Purchase of Investment	(30.0)	
Net Cash used for investing activities		(31.80)

C) Cash Flows from Financing Activities		
Issue of Share Capital	75.00	
Securities Premium	7.50	
Redemption of Debentures	(30.00)	
Dividend Paid	(33.75)	
Net cash provided by financing activities		18.75
Net increase in cash and equivalents		22.50
Cash and Cash equivalents at the beginning		45.00
Cash and Cash equivalents at the end		67.50

7. The balance sheets of Western Manufacturers Ltd. as on 1st April, 2005

Liabilities	1st April (2005) Rs.	31st March (2006) Rs.	Assets	1st April (2005) Rs.	31st March (2006) Rs.
Share Capital :	2,50,000	2,50,000	Land and Buildings	1,50,000	1,50,000
5% Debentures	1,00,000	80,000	Machinery	82,000	90,000
Sundry Creditors	1,15,000	1,08,000	Stock in Trade	1,00,000	1,14,000
Profit & Loss Account	20,000	27,000	Sundry Debtors	85,000	81,000
Depreciation Fund	40,000	44,000	Cash and Bank Balance	60,000	55,000
Reserve for			Temporary		
Contingencies	70,000	55,000	Investments	1,31,000	95,000
Outstanding Expenses	15,000	24,000	Prepaid Expenses	2,000	3,000
	6,10,000	5,88,000		6,10,000	5,88,000

The following additional information is also available

- New machinery was purchased for Rs. 30,000 but old machinery costing Rs. 15,000 was sold for Rs. 5,000 accumulated depreciation was Rs. 8,000.
- Rs. 20,000, 5% debentures were redeemed by purchase from open market @ Rs. 96.
- Rs. 36,000 investments were sold at book value.
- 12% dividend was paid in cash.
- Rs. 15,000 was debited to contingency reserve for settlement of previous tax liability.

You are required to prepare Cash Flow Statement by Indirect Method.

Sol.:

(Imp.)

Cash Flow Statement

Particulars	Rs.	Rs.
A) Cash Flows from Operating Activities		
Net Profit before taxation and extraordinary items	45,200	
Adjustment for Depreciation	12,000	
Operating Profit before working capital changes	57,200	
Increase in Outstanding Expenses	9,000	
Decrease in Sundry Debtors	4,000	
Decrease in Temp. Investments	36,000	
Decrease in Sundry Creditors	(7,000)	
Increase in Stock in Trade	(14,000)	
Increase in Prepaid Expenses	(1,000)	
Tax Paid	(15,000)	
Net Cash from operating activities		69,200
B) Cash flows from investing activities		
Sale of Machinery	5,000	
Purchase of Machinery	(30,000)	
Net Cash used in investing activities		(25,000)
C) Cash flows from financing activities		
Redemption of Debentures	(19,200)	
Payment of Dividend	(30,000)	
Net Cash used in financing activities		(49,200)
Net decrease in cash & cash equivalents		(5,000)
Cash and cash equivalents at the beginning of the period		60,000
Cash and cash equivalents at the end of the period		55,000

Working Notes

(1)

Adjusted Profit And Loss Account

Dr.

Cr.

Particulars	Rs.	Particulars	Rs.
To P/L A/c (27,000 – 20,000)	7,000	By Profit on Redemption of Debentures	800
To Loss on Sale of Machinery	2,000	By Net Profit before Taxation and Extraordinary Items	45,200
To Machinery (written off) (3)	7,000		
To Dividend paid	30,000		
	46,000		46,000

(2) Depreciation Fund Account

Dr.

Cr.

Particulars	Rs.	Particulars	Rs.
To Machinery A/c	8,000	By Balance b/d	40,000
To Balance c/d	44,000	By P/L A/c (Current year's Depreciation)	12,000
	52,000		52,000

(3) Depreciation Fund Account

Dr.

Cr.

Particulars	Rs.	Particulars	Rs.
To Balance b/d	82,000	By Depreciation Fund	8,000
To Bank A/c	30,000	By Bank	5,000
		By Adj. P/L A/c (Loss)	2,000
		By Adj. P/L A/c (obsolete machinery written off : Bal. Fig.)	7,000
		By Balance c/d	90,000
	1,12,000		1,12,000

8. The Balance Sheets of a firm as on 31st December 2008 and 2009 are given below :

Liabilities	2008	2009	Assets	2008	2009
Share Capital	1,00,000	1,60,000	Fixed Assets (Cost)	1,52,000	2,00,000
Retained Earnings			Inventory	93,400	89,200
	70,250	85,300	Debtors	30,800	21,100
Accumulated Depreciation	60,000	40,000	Prepaid expenses	3,950	3,000
12% Debenture	50,000	-	Bank	28,100	20,000
Creditors	28,000	48,000			
	3,08,250	3,33,300		3,08,250	3,33,300

Additional Information

- Net profit is Rs. 27,050.
 - Depreciation charged Rs. 10,000
 - Cash dividend declared during the period Rs. 12,000.
 - An addition to the building was made during the year at a cost of Rs. 78,000 and fully depreciated equipment costing Rs. 30,000 was discarded as no salvage being realized.
- Prepare a Cash Flow Statement.

Sol.:

Adjusted Profit & Loss A/C

Particulars	Amount	Particulars	Amount
To Provision for depreciation	10,000	By Balance b/d	70,250
To Dividend	12,000		
To Balance c/d	85,300	By Adjusted Profit	37,050
	1,07,300		1,07,300

Fixed Assets Account

Dr.	Particulars	Amount	Cr.	Particulars	Amount
	To Balance b/d	1,52,000		By Accumulated Dep.	30,000
	To Bank	78,000		By Balance c/d	2,00,000
		2,30,000			2,30,000

Accumulated Depreciation Account

Dr.	Particulars	Amount	Cr.	Particulars	Amount
	To Fixed Assets	30,000		By Balance b/d	60,000
	To Balance c/f	40,000		By Profit & Loss A/c.	10,000
		70,000			70,000

Cash Flow Statement for the year ending on 31.12.09 (As per A.S.-3)

Particulars	Amount Rs.	Amount Rs.
(1) Cash Flow from Operating Activities		
Profit before tax (after non-cash & extraordinary items)		37,050
Add/Less : Changes in Working Capital		
- Decrease in Inventory	4,200	
- Decrease in Debtors	9,700	
- Increase in Creditors	20,000	
- Decrease in pre-paid expenses	950	34,850
Cash flows from operating activities		71,900
Less : Tax Paid		Nil
Net Cash Flow From Operating Activities (A)		71,900
(2) Cash Flow from Investing Activities :		
- Purchase of Building	(78,000)	
Net Cash Flow From Investing Activities (B)		(78,000)
(3) Cash Flow from Financing Activities :		
- Issued Equity Shares	60,000	
- Dividend paid	(12,000)	
- Redemption of debenture	(50,000)	
Net Cash Flow From Financing Activities (C)		(2,000)
Net Cash Flow From All Activities (A + B + C)		(8,100)
Add : Opening Cash and Bank Balance		28,100
Closing Cash and Bank Balance		20,000

9. From the following information, prepare cash flow statement :

Balance - Sheet

Liabilities	1-1-2012	31-12-2-12	Assets	1-1-2012	31-12-2012
Share Capital	2,00,000	2,00,000	Cash	8,000	10,000
Profit & Loss	50,000	90,000	Bank	22,000	20,000
Bank Loan	10,000	-	Debtors	10,000	20,000
Outstanding Expenses	5,000	1,000	Stock	25,000	15,000
Creditors	15,000	20,000	Non-current asset	2,35,000	2,75,000
Provision for tax	20,000	25,000			
Unclaimed Dividend	-	4,000			
	3,00,000	3,40,000		3,00,000	3,40,000

Net profit for the year 2012 after providing Rs. 20,000 as depreciation was Rs. 60,000. During the year 2012, company declared equity dividend @ 10% and paid Rs. 15,000 as Income-tax.

Sol :

(Imp.)

Cash flow statement for the year ended on December 2012

Particulars	Amount Rs.	Amount Rs.
(1) Cash Flow from Operating Activities		
Increase in Profit & Loss account	40,000	-
Add : Proposed dividend (10% of 2,00,000)	20,000	
Net Profit	60,000	
Add : Depreciation	20,000	
Provision of Income tax	20,000	
Funds from operations	1,00,000	
Add : Increase in creditors	5,000	-
Decrease in stock	10,000	-
Less : Increase in debtors	(10,000)	-
Decrease in outstanding expenses	(4,000)	-
Cash generated from operations	1,01,000	
Less : Tax paid	(15,000)	-
Net Cash Provided By Operating Activities (A)		86,000
(2) Cash Flow From Investing Activities:		
Purchase of Non-current Asset (2,95,000 - 2,35,000)	(60,000)	
Net Cash Provided By Investing Activities (B)		(60,000)
(3) Cash Flow From Financing Activities :		
Repayment of loan	(10,000)	
Repayment of dividend (20,000 - 4,000)	(16,000)	
Net Cash Provided By Financing Activities (C)		(26,000)
Net Cash Flow From All Activities (A + B + C)		Nil
Add : Opening balance of cash & bank		30,000
Closing balance of cash & bank Balance		30,000

10. From the following Balance - Sheet prepare cash flow statement for the year 2012.

Liabilities	1-1-2012	31-12-2012	Assets	1-1-2012	31-12-2012
Share Capital	1,25,000	1,53,000	Cash	10,000	7,000
Creditors	40,000	44,000	Debtors	30,000	50,000
Loan from X	25,000	-	Stock	40,000	25,000
Loan from bank	40,000	50,000	Machinery	80,000	55,000
			Land	35,000	50,000
			Building	35,000	60,000
	2,30,000	2,47,000		2,30,000	2,47,000

During the year a machine costing Rs.10,000 with accumulated depreciation Rs. 3,000 was sold for Rs. 5,000.

Sol :

Cash flow statement for the year ended on December 2012

Particulars	Amount Rs.	Amount Rs.
(1) Cash Flow from Operating Activities		
Capital at the end of the year	1,53,000	-
Less : Capital at the beginning of the year	(1,25,000)	
Profit for the year	28,000	
Add : Loss on sale of machinery	2,000	
Depreciation	18,000	
Profit before changes in working capital	48,000	
Add : Increase in creditors	4,000	
Decrease in stock	15,000	
Less : Increase in debtors	(20,000)	47,000
Net Cash Provided by Operating Activities (A)		47,000
(2) Cash Flow From Investing Activities :		
Sale of Machinery	5,000	
Purchase of land	(15,000)	
Purchase of Building	(25,000)	
Net Cash Provided by Investing Activities (B)		(35,000)
(3) Cash Flow From Financing Activities :		
Loan from bank	10,000	
Repayment of loan from X	(25,000)	
Net Cash Provided by Financing Activities (C)		(15,000)
Net Cash Flow From All Activities (A + B + C)		(3,000)
Add : Opening balance of cash & bank		10,000
Closing balance of cash & bank		7,000

Working Note :

Machinery Account

Dr.		Cr.	
Particulars	Amount	Particulars	Amount
To Balance b/d	80,000	By Bank a/c	5,000
		By Loss on sale	2,000
		By Depreciation	18,000
		By Balance c/f	55,000
	80,000		80,000

11. The following are the summarized financial statements of Ambuja Co. Ltd. for 2012 and 2013:

Statement of Financial Position

Particulars	2013	2012
Assets :		
Cash	9,000	15,000
Debtors	25,000	31,000
Stock	60,000	45,000
Fixed asset at cost	1,20,000	1,05,000
	2,14,000	1,96,000
Liabilities :		
Share Capital	32,500	31,500
6% Debentures due on 31-12-2015	50,000	70,000
Retained Earnings	38,500	27,500
Creditors	20,000	12,500
Income - tax Payable	36,000	27,500
Accumulated Depreciation	37,000	27,000
	2,14,000	1,96,000

Income Statement (For the Year Ending 31st December)

Particulars	Amount	Amount
Sales	4,25,000	4,50,000
Operating Expenses (including depreciation Rs. 10,000)	3,40,000	3,80,800
Interest on Debentures	3,000	4,200
Net Profit Before Tax	82,000	65,000
Income Statement	36,000	27,500
	46,000	37,500

Statement of Retained Earnings

Particulars	Amount	Amount
Retained Earnings -Beginning	27,500	25,000
Profit for the year	46,000	37,500
	73,500	62,500
Dividends	35,000	35,000
Retained Earnings - End	38,500	27,500

Sol.:

Cash Flow Statement

Particulars	Amount	Amount
(1) Cash Flow from Operating Activities		
Net Profit		82,000
(Changes in working capital)		
Decrease in Debtors	6,000	
Increase in Creditors	7,500	
Depreciation	10,000	
	23,500	
Increase in Stock	(15,000)	8500
Cash Provided By Operating Activities		90,500
Less : Tax Paid		(27,500)
Net Cash Provided By Operating Activities (A)		63,000
2) Cash Flow From Investing Activities :		
Purchase of fixed assets	(15,000)	(15,000)
Net Cash Provided by Investing Activities (B)		(15,000)
3) Cash Flow From Financing Activities :		
Issue of shares	1,000	
Redemption of Debentures	(20,000)	
Dividend Paid	(35,000)	(54,000)
Net Cash Provided By Financing Activities (C)		(54,000)
Net Cash Flow From All Activities (A + B + C)		(6,000)
Add : Opening balance of cash		15,000
Closing balance of bank		9000

12. The summarized balance sheet of Bhadresh Ltd. as on 31-12-05 and 31-12-2006 are as follows :

Liabilities	2005	2006	Assets	2005	2006
Share Capital	4,50,000	4,50,000	Fixed asset	4,00,000	3,20,000
General Reserve	3,00,000	3,10,000	Investment	50,000	60,000
Profit & Loss a/c	56,000	68,000	Stock	2,40,000	2,10,000
Creditors	1,68,000	1,34,000	Debtor	2,10,000	4,55,000
Tax provision	75,000	10,000	Bank	1,49,000	1,97,000
Mortgage loan	-	2,70,000			
	10,49,000	12,42,000		10,49,000	12,42,000

Additional Information

- Investment costing Rs.8,000 were sold for Rs. 8,500
- Tax provision made during the year was Rs. 9,000
- During the year part of fixed assets costing Rs 10,000 was sold for Rs. 12,000 and the profit was included in P & L A/c. You are required to prepare cash flow statement for 2006.

Sol :

Cash flow statement for the year ended 31-12-2006

Particulars	Rs.	Rs.
1. Cash Flow from Operating Activities		
Net profit before tax (Rs. 28,500 in case Profit on sale on Investment & Fixed Asset not considered)	31,000	
Adjustment for :		
Depreciation	70,000	
Profit on sale of investment	(500)	
Profit on sale of Fixed assets	(2,000)	
Decrease in stock	30,000	
Decrease in creditor	(34,000)	
Increase in debtor	(2,45,000)	
Income tax paid	(74,000)	
Net cash from operating activities (A)		(2,24,500)
2. Cash flows from Investing activities :		
Investment purchases	(18,000)	
Sale of investment	8,500	
Sale of Fixed assets	12,000	
Net cash from investing activities (B)		2,500
3. Cash flows from financing activities :		
Mortgage loan taken (C)	2,70,000	2,70,000
Net Cash Flow from all activities (A + B + C)		48,000
Add : opening cash balance		1,49,000
Closing cash balance		1,97,000

Fixed Assets A/c

Dr.

Cr.

Particulars	Rs.	Particulars	Rs.
To Balance b/d	4,00,000	By Bank a/c	12,000
To Profit and Loss a/c	2,000	By Dep.	70,000
		By Balance c/d	3,20,000
	4,02,000		4,02,000

Provision for tax A/c

Dr.

Cr.

Particulars	Rs	Particulars	Rs
To Bank (tax paid)	74,000	By Balance b/d	75,000
To Balance c/d	10,000	By P & L A/c (provision)	9,000
	84,000		84,000

Investment A/c

Dr.

Cr.

Particulars	Rs	Particulars	Rs
To Balance b/d	50,000	By Bank (sale)	8,500
To P & L A/c	500	By Balance c/d	60,000
To Bank (purchase)	18,000		
	68,500		68,500

Adjusted P & L A/c

Particulars	Rs	Particulars	Rs
To Provision for tax	9,000	By Balance b/d	56,000
To Provision for General Reserve	10,000	By Profit on sale of Inv.	500
To Balance c/d	68,000	By Profit on sale of Fixed Asset	2,000
		By Adjusted Profit a/c	28,500
	87,000		87,000

13. From the following summary cash account of Y Ltd., prepare cash flow statement for the current year ended March 31 in accordance with AS-3 using the direct method. The company does not have any cash equivalents.

Summary Cash Account for the current year ended March 31.

Particulars	Rs.	Particulars	Rs.
Opening Balance	50,000	Payment to suppliers	20,00,000
Issue of equity shares	3,00,000	Purchase of fixed assets	2,00,000
Receipts from customers	28,00,000	Overhead expenses	2,00,000
Sale of fixed assets	1,00,000	Wages and salaries	1,00,000
		Taxation	2,50,000
		Dividend	50,000
		Repayment of bank loan	3,00,000
		Closing Balance	1,50,000
	32,50,000		32,50,000

Sol :

(Feb.-17)

- (i) Cash Receipts from Customers = 28,00,000
(ii) Cash Payments = 20,00,000
Cash paid for expenses = 2,00,000 + 1,00,000 = 3,00,000

Cashflow Statement

Particulars	Amount	Amount
Cash flow from operating activities		
Cash receipts	28,00,000	
(-) Cash payment	20,00,000	
(-) Cash paid for expenses	3,00,000	
Cashflow generated from operating activities		5,00,000
(-) Tax paid		2,50,000
Cashflow operating activity → (A)		2,50,000
<u>Cashflow from investing activities</u>		
Sale of fixed assets	1,00,000	
(-) Purchase of fixed assets	(2,00,000)	
Cashflow from investing activities → (B)		(1,00,000)
<u>Cashflow from financing activities</u>		
Issue of equity shares	3,00,000	
Repayment of bank loan	(3,00,000)	
Dividend paid	(50,000)	
Cashflow from financing activities → (C)		(50,000)
Net increase in cash & its equivalents		1,00,000
(+) Opening balance of cash & its equivalents		50,000
Closing balance of cash & its equivalents		1,50,000

14. From the following details, prepare a cash flow statement.

Balance Sheets

Liabilities	2017 (₹)	2018 (₹)	Assets	2017 (₹)	2018 (₹)
Share Capital	10,000	15,000	Land	4,000	4,000
P & L A/c	5,000	8,000	Machinery	3,000	5,000
General Reserve	4,000	6,000	Stock	10,000	12,000
Creditors	8,000	12,000	Debtors	10,000	15,000
Bills payable	5,000	3,000	Cash	5,000	8,000
	32,000	44,000		32,000	44,000

Additional Information :

During the year depreciation charged on machinery for ₹ 1,000 and dividend paid ₹ 2,000.

Sol/:

(Jan.-19, Imp.)

Cash flow statement

Particulars	Amount (₹)	Amount (₹)
Cash flows from operating activities :		
Increase in the balance of P and L A/c	3,000	
Adjustments for non - cash items :		
Add : Increase in reserves	2,000	
Dividend paid	2,000	
Depreciation	1,000	
Operating profit before working capital changes	8,000	
Adjustments for changes in current operating assets and liabilities		
Add : Increase in creditors	4,000	
Less : Decrease in Bills payable	(2,000)	
Less : Increase in Debtors	(5,000)	
Less : Increase in Stock	(2,000)	
Net cash from operating activities		3,000
Investing activities		
Purchase of machinery (WN-1)	(3,000)	
Net cash used in investing activities		(3,000)
Financing activities :		
Increase in share capital	5,000	
Dividend paid	2,000	
		3,000
Net increase in cash or cash equivalents		3,000
Cash and cash equivalent at the beginning of the year.		5,000
Cash and cash equivalent at the end of the year.		8,000

Working Notes - 1

Machinery Account			
Dr.		Cr.	
Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	3,000	By depreciation	1,000
To cash purchased balance figure	3,000	By balance c/d	5,000
	6,000		6,000

15. From the following information prepare cash flow statement by indirect method of Ram Business Corporation.

Liabilities and Capital	Jan.-1, 2015	31-12-2015	Assets	Jan.-1, 2015	31-12-2015
Share capital	35,000	43,500	Cash and bank	40,000	44,400
Surplus	15,000	19,500	Accounts receivable	10,000	20,700
Bonds payable	22,000	22,000	Inventories	15,000	15,000
Bonds payable discount	(2,000)	(1,800)	Land and building	4,000	4,000
Current liabilities	30,000	20,000	Business premises	20,000	16,000
Bank loan	-	12,000	Plant and equipment	15,000	17,000
			Accumulated depreciation	(5,000)	(2,800)
			Patents and trademarks	1,000	900
	1,00,000	1,15,200		1,00,000	1,15,200

Additional Information

- (i) A building that costs ₹ 4,000 and which had a book value at ₹ 1,000 was sold for ₹ 1,400.
- (ii) The depreciation charge for the period was ₹ 800.
- (iii) There was a ₹ 5,000 issue of capital stock.
- (iv) Cash dividend of ₹ 2,000 and stock dividend of ₹ 3,500 were declared.

Sol.:

(Aug.-18, Imp.)

Cash Flow Statement in the Books of Ram Business Corporation for the Year Ending 2015

Particulars	Amount (₹)	Amount (₹)
Cash Flows from Operating Activities		
Surplus	4,500	
Add: Depreciation accumulated	3,000	
Patents and trademarks written off	100	
Bonds payable discount	(200)	2,900
		7,400
Less: Increase in accounts receivable	(10,700)	
Profit on sale of building	(400)	
Decrease in current liabilities	(10,000)	(21,100)
Net Cash from Operating Activities (A)		(13,700)

Cash Flow from Investing Activities		
Purchase of plant and equipment	(2,000)	
Proceeds from sale of building	1,400	(600)
Net Cash Flow from Investing Activities (B)		(600)
Cash Flow from Financing Activities		
Issue of capital stock	5,000	
Dividend paid in stock	3,500	
Dividend paid	(2,000)	
Bank loan	12,000	
Amortization of discounted bond	200	18,700
Net Cash Flow from Financing Activities (C)		18,700
Net increase in cash equivalents (A + B + C)		4,400
Add: Cash at beginning		40,000
Net Cash at End		44,400

Working Notes

Dr.		Building Account (Business Premises)		Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)	
To Balance b/d	20,000	By Cash sales	1,400	
To P & L a/c (Profit on Sale)	400	By Accumulated depreciation	3,000	
(Bal. fig.)		By Balance c/d	16,000	
	20,400		20,400	

Dr.		Capital Stock Account		Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)	
To Balance b/d	43,500	By Cash	5,000	
		By Stock dividends	3,500	
		By Balance c/d	35,000	
	43,500		43,500	

Dr.		Accumulated Depreciation Account		Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)	
To Balance b/d	2,800	By Profit and loss a/c	800	
To Building a/c	3,000	By Balance c/d	5,000	
	5,800		5,800	

Exercise Problems

2. Following are the summarised Balance Sheets of A Ltd. as on 31st December, 2006 and 2007

Assets	2006 (`)	2007 (`)	Liabilities	2006 (`)	2007 (`)
Fixed Assets	4,00,000	3,20,000	Share Capital	4,50,000	4,50,000
Investments	50,000	60,000	General Reserve	3,00,000	3,10,000
Stock	2,40,000	2,10,000	Profit and Loss A/c	56,000	68,000
Debtors	2,10,000	4,55,000	Creditors	1,68,000	1,34,000
Bank	1,49,000	1,97,000	Provision for Taxation	75,000	10,000
Bills Payable	-	2,70,000			
	10,49,000	12,42,000		10,49,000	12,42,000

Additional Information :

- (i) Investment costing ` 8,000 were sold during the year 2007 for ` 8,500.
- (ii) Provision for taxation made during the year 2007 was ` 9,000.
- (iii) During the year 2007, part of fixed assets having book value of ` 10,000 were sold for ` 12,000.
- (iv) Dividend paid during the year 2007 amounted to ` 40,000.

Prepare Cash Flow Statement for the year ended 31st December, ` 2007.

(Ans: Net cash flows from operating activities ` 85,500; Net cash flows from investing activities ` 2,500; Net cash used in financing activities ` 40,000; Net increase in cash and cash equivalents ` 48,000.)

4. From the following information prepare a Cash Flow Statement.

Liabilities	2012 (`)	2013 (`)	Assets	2012 (`)	2013 (`)
Capital	15,00,000	16,00,000	Goodwill	4,00,000	3,00,000
Reserves	1,00,000	1,20,000	Machinery	10,00,000	11,00,000
Debentures	4,00,000	2,80,000	Furniture	4,00,000	6,00,000
Bank Loan	1,00,000	-	Stock	3,00,000	1,00,000
Current Liabilities	50,000	60,000	Debtors	50,000	1,00,000
Provision for Tax	50,000	1,40,000	Cash	50,000	20,000
Provision for Dividend	20,000	20,000	Preliminary expenses	20,000	
	22,20,000	22,20,000		22,20,000	22,20,000

Additional Information :

During 2013 depreciation written off on machinery and furniture was ` 1,00,000 and ` 1,50,000 respectively.

(Ans: Net cash flows from operating activities ` 6,40,000; Net cash flows from investing activities ` 5,50,000; Net cash used in financing activities ` 1,20,000; Net decrease in cash and cash equivalents ` 30,000).

5. From the following information prepare cash flow statement.

Comparative Balance Sheet of Sunshine Limited

Liabilities and Capital	31-3-2010 (₹)	31-3-2009 (₹)	Assets	31-3-2010 (₹)	31-3-2009 (₹)
Share Capital	25,00,000	20,00,000	Fixed Assets	15,50,000	15,00,000
Reserves & Surplus	7,50,000	2,50,000	Investments	75,000	
Secured Loans Balance	17,50,000	20,00,000	Cash & Bank	1,25,000	62,500
Current liabilities	25,00,000	30,00,000	Stocks, Stores, Work in Progress	37,50,000	39,37,500
Sundry Debtors	20,00,000	17,50,000			
	75,00,000	72,50,000		75,00,000	72,50,000

- (i) The profit for the year after adjustment in respect of provisions for dividends and taxation was ₹ 5,00,000.
- (ii) There was addition to fixed assets during the year amounting to ₹ 2,00,000 and depreciation for the year was ₹ 1,50,000.

(Ans: Net cash from operating activities ₹ 87,500; Net cash from investing activities ₹ - 2,75,000; Net cash flow from financing activities ₹ 2,50,000; Net increase in cash and cash equivalents ₹ 62,500).

Short Question and Answers

1. Cash flow statement.

Ans :

Meaning

Cash Flow Statement is a statement which describes the inflows (sources) and outflows (uses) of cash and cash equivalents in an enterprise during a specified period of time. Such a statement enumerates net effects of various business transactions on cash and its equivalents and takes into account receipts and disbursements of cash. A cash flow statement summarizes the causes of changes in cash position of a business enterprise between dates of two balance sheets. According to AS-3 (Revised), an enterprise should prepare a cash flow Statement and should present it for each period for which financial statements are prepared. The terms cash, cash equivalents and cash flows are used in this statement with the following meanings:

1. Cash comprises cash on hand and demand deposits with banks.
2. Cash equivalents are short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Cash equivalents are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes. For an investment to qualify as a cash equivalent, it must be readily convertible to a known amount of cash and be subject to an insignificant risk of change in value. Therefore, an investment normally qualifies as a cash equivalent only when it has a short-maturity, of say, three months or less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they are in substance, cash equivalents: for example, preference shares of a company acquired shortly before their specified redemption date (provided there is only an insignificant risk of failure of the company to repay the amount at maturity).

2. Importance of cash flow statement.

Ans :

(a) Helps to make Cash Forecast

Cash Flow Statement, no doubt, helps the management to make a cash forecast for the near future. A projected Cash Flow Statement helps the management about the cash position which

is the basis for all operations and, thus, the management sees light relating to cash position, viz. how much cash is needed for a specific purpose, sources of internal and external issues, etc.

(b) Helps the Internal Management

It helps the internal management to determine the financial policy to be adopted in future since it supplies information relating to funds, e.g. taking decision about the replacement of fixed assets or repayment of long-term liabilities, etc.

(c) Reveals the Cash Position

It is a significant pointer about the movement of cash, i.e. whether there is any increase in cash or decrease in cash and the reasons thereof which helps the management. Moreover, it explains the reasons for small cash balance even though there is sufficient profit, or vice versa. Besides, the management can compare the original forecast with the actual one in order to understand the trend of movement of cash and the variation therefore.

3. Explain the features of cash flow statement.

Ans :

- (i) Cash Flow Statement is very dynamic in character since it records the investment of cash from the beginning of the period to the end of the period.
- (ii) It is a periodical statement as it covers a particular period.
- (iii) This statement does not recognize matching principles.
- (iv) This statement helps to calculate Cash from Operations/Cash Flows from Operating Activities.
- (v) It exhibits the changes of financial positions relating to operational activities, investing activities and financial activities, respectively, by which an analyst can draw his conclusion.

4. Limitations of cash flow statement.

Ans :

Despite a number of uses, cash flow statements suffers from the following limitations :

- (i) As cash flow statement is based on cash basis of accounting, it ignores the basic accounting concept of accrual basis.
- (ii) Some people feel that as working capital is a wider concept of funds, a funds flow statement provides a more complete picture than cash flow statement.
- (iii) Cash flow statement is not suitable for judging the profitability of a firm as non-cash charges are ignored while calculating cash flows from operating activities.
- (iv) A cash flow statement is not a substitute of an income statement, it is complementary to an income statement. Net cash flow does not mean the net income of a firm.
- (v) A cash flow statement is also not a substitute of funds flow statement which provides information relating to the causes that lead to increase or decrease in working capital.

5. Cash Flows from Operating Activities

Ans :

Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities.

The amount of cash flows arising from operating activities is a key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise, pay dividends, repay loans, and make new investments without recourse to external sources of financing. Information about the specific components of historical operating cash flows is useful, in conjunction with other information, in forecasting future operating cash flows.

Cash flows from operating activities are primarily derived from the principal revenue-producing activities of the enterprise. Therefore, they generally result from the transactions and other events that enter into the determination of net profit or loss.

Examples of cash flows from operating activities (for non-financial companies) are:

- (a) Cash receipts from the sale of goods and the rendering of services
- (b) Cash receipts from royalties, fees, commissions, and other revenue
- (c) Cash payments to suppliers of goods and services
- (d) Cash payments to and on behalf of employees
- (e) Cash receipts and cash payments of an insurance enterprise for premiums and claims, annuities and other policy benefits.

6. Cash Flows From Investing Activities

Ans :

Investing activities are the acquisition and disposal of long term assets and other investments not included in cash equivalents. The separate disclosure of cash flows arising from investing activities is important because the cash flows represent the extent to which expenditures have been made for resources intended to generate future income and cash flows.

Examples

- (a) Cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalised research & development costs and self constructed fixed assets;
- (b) Cash receipts from disposal of fixed assets (including intangibles);
- (c) Cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes).

7. Cash Flows From Financing Activities

Ans :

Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise.

The separate disclosure of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by providers of funds (both capital and borrowings) to the enterprise.

Examples

- (a) Cash proceeds from issuing shares or other similar instruments :
- (b) Cash proceeds from issuing debentures, loans, notes, bonds, and other short-or long-term borrowings; and
- (c) Cash repayments of amounts borrowed such as redemption of debentures, bonds, preference shares.

1. The net cash flow are classified into operating, financing and investing activities in _____. [a]
 - a) Cash flow statement
 - b) Funds flow statement
 - c) Balance sheet
 - d) None
2. Cash flows from _____ activities result from the major revenue producing activities of a firm [c]
 - a) Financing
 - b) Investing
 - c) Operating
 - d) Both (a) and (b)
3. The net cash flow are classified into operating, financing and investing activities in _____. [a]
 - a) Cash flow statement
 - b) Funds flow statement
 - c) Balance sheet
 - d) None
4. Cash payment to supplier of goods and services is a _____ activity [c]
 - a) Investing
 - b) Financing
 - c) Operating
 - d) both b and c
5. Cash proceed from issuing shares is a _____ activity. [b]
 - a) Investing
 - b) Financing
 - c) Operating
 - d) All
6. Cash receipts from disposal of shares is a _____ activity. [a]
 - a) Investing
 - b) Financing
 - c) Operating
 - d) None
7. _____ is an analysis of flow of cash in a business over a future period of time. [c]
 - a) Cash in flow
 - b) Cash outflow
 - c) Cash budget
 - d) All
8. Repayment of loans and borrowings is a _____ activity. [b]
 - a) Investing
 - b) Financing
 - c) Operating
 - d) All
9. Improvement in cash position results in improvement of _____ of the firm. [b]
 - a) Funds from operation
 - b) working capital
 - c) Funds flow statement
 - d) Cash flow statement
10. Cash flow statement mainly classified into _____ activities. [d]
 - a) One
 - b) two
 - c) four
 - d) three

Fill in the Blanks

1. _____ reveals the effects of transactions involving the changes in cash or cash equivalents.
2. Cash flow statement is useful for _____
3. Cash flows are _____ and _____ of cash and cash equivalents.
4. Income from investments is a cash flow from _____ activities.
5. A cashflow statement is generally _____ in nature
6. Cash flow statement (based on AS-3) indicates change in _____
7. Buy back of shares comes under _____
8. Cash payments to suppliers for goods and services is an example of _____
9. Exchange of Asset is a _____
10. A cashflow statement is not a substitute of _____

ANSWERS

1. Cash flow statement
2. Short-term financial analysis
3. Inflows and outflows
4. Investing
5. historical
6. Cash and cash equivalents
7. Financing activity
8. Operating activity
9. Non cash transaction
10. Income Statement

FACULTY OF COMMERCE
B.Com. III Year VI Semester(CBCS) Examination
Model Paper - I
COST CONTROL AND MANAGEMENT ACCOUNTING

Time: 3 Hours

Max. Marks: 80

PART – A (5 × 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

ANSWERS

1. Distinguish between absorption costing and marginal costing. (Unit-I, SQA. 1)
2. Given Margin of Safety Rs. 20,000 (which represents 20% of Sales); P/V Ratio = 50%. Find out the Break-Even Sales and Fixed Cost. (Unit-I, Prob. 2)
3. Compare and contrast fixed budget and flexible budget. (Unit-II, SQA. 8)
4. Calculate Material Price Variance of Product 'A' Standard Price (Rs. Per Unit) 5.00; Actual Price (Rs. Per Unit) 6.00; Units Produced 600. (Unit-II, Prob. 5)
5. Explain the limitations of ratio analysis. (Unit-III, SQA. 3)
6. Prepare a Statement of changes in Working Capital from the following Balance Sheets of Many it and company Limited.

Balance Sheets as at December 31

Particulars	2012 (₹)	2013 (₹)
I. Equity and Liabilities		
Shareholders' Funds :		
Equity share capital	5,00,000	5,00,000
Non-current-Liabilities :		
Debentures	3,70,000	4,50,000
Current Liabilities:		
Accounts Payable	96,000	1,92,000
Tax Payable	77,000	43,000
Interest Payable	37,000	45,000
Dividend Payable	50,000	35,000
Total	11,30,000	12,65,000
II. Assets		
Non-current Assets:		
Fixed Assets	6,00,000	7,00,000
Long-term Investments	2,00,000	1,00,000
Current Assets:		
Stock-in-Trade	1,50,000	2,25,000
Accounts Receivable	70,000	1,40,000
Work-in-Progress	80,000	90,000
Cash	30,000	10,000
Total	11,30,000	12,65,000

(Unit-IV, Prob. 1)

7. Calculate Cash generated from Operations

Purchases	₹ 1,50,000
Sales	₹ 2,00,000
Expenses	₹ 20,000
Creditors at the beginning of the year	₹ 30,000
Creditors at the end of the year	₹ 40,000

(Unit-V, Prob. 1)

8. Cash flow statement.

(Unit-V, SQA. 1)

PART - B (5 × 12 = 60 Marks)**Note:** Answer all the questions in not exceeding four pages each.

9. (a) Define Management Accounting. Discuss the nature and scope of Management Accounting.

(Unit-I, Q.No. 1)

OR

- (b) From the following particulars, find;

- (i) Fixed Costs
- (ii) Break Even sales
- (iii) Total Sales and
- (iv) Profit

Margin of Safety ₹ 10,000 which represents 40% of Sales: P/v ratio 50%.

(Unit-I, Prob. 11)

10. (a) The following standard and actual data relate to a manufacturing concern:

Material	SQ	SP	AQ	AP
	Kgs	₹	Kgs	₹
X	40	10	42	8
Y	30	08	35	10

Find the Material Cost Variances.

(Unit-II, Prob. 9)

OR

- (b) The following information at 50% capacity is given. Prepare a flexible budget and forecast the profit or loss at 60%, 70% and 90% capacity.

Particulars	Expenses at 50% capacity
Fixed Expenses :	₹
Salaries	50,000
Rent and Taxes	40,000
Depreciation	60,000
Administrative Expenses	70,000
Variable Expenses :	
Materials	2,00,000
Labour	2,50,000
Others	40,000
Semi-Variable Expenses :	
Repairs	1,00,000
Indirect Labour	1,50,000
Others	90,000

It is estimated that fixed expenses will remain constant at all capacities. Semi-Variable expenses will not change between 45% and 60% capacity, will rise by 10% between 60% and 75% capacity, a further increase of 5% when capacity crosses 75%.

Estimated sales at various levels of capacity are :

Capacity	Sales (₹)
60%	11,00,000
70%	13,00,000
90%	15,00,000

(Unit-II, Prob. 2)

11. (a) Calculate :

- (i) Gross Profit Ratio
- (ii) Net Profit Ratio
- (iii) Operating Ratio
- (iv) Operating Profit Ratio.

Particulars	₹
Sales	10,00,000
Cost of goods sold	6,00,000
Operating Expenses	2,00,000
Non-operating Expenses	40,000

(Unit-III, Prob. 19)

OR

(b) Explain the various techniques of financial statement analysis.

(Unit-III, Q.No. 6)

12. (a) What is a funds flow statement? Explain the significance of funds flow statement.

(Unit-IV, Q.No. 2)

OR

(b) The following are the summaries of the Balance Sheets of Ajay Ltd. as at 31-12-1994 and 1995.

Balance Sheet

Liabilities	31-12-94 (₹)	31-12-95 (₹)	Assets	31-12-94 (₹)	31-12-95 (₹)
Share Capital	2,00,000	2,50,000	Land and Buildings	2,00,000	1,90,000
General Reserves	50,000	60,000	Plant	1,50,000	1,74,000
Profit and Loss a/c	30,500	30,600	Stock	1,00,000	74,000
Bank Loan (Short term)	70,000	-	Debtors	80,000	64,200
Creditors	1,50,000	1,35,200	Cash	500	600
Provision for Taxation	30,000	35,000	Bank	-	8,000
	5,30,500	5,10,800		5,30,500	5,10,800

Additional Information:

- (a) Depreciation was written off on Plant ` 14,000 in 1995.
- (b) Dividend of ` 20,000 was paid during 1995.
- (c) Income Tax Provision made during the year was ` 25,000
- (d) A piece of land has been sold during the year at cost.

You are required to prepare a Statement Showing Sources and Applications of Funds for the year 1995 and schedule of changes in Working Capital.

(Unit-IV, Prob. 13)

13. (a) The balance sheets of Western Manufacturers Ltd. as on 1st April, 2005

Liabilities	1st April (2005) Rs.	31st March (2006) Rs.	Assets	1st April (2005) Rs.	31st March (2006) Rs.
Share Capital :	2,50,000	2,50,000	Land and Buildings	1,50,000	1,50,000
5% Debentures	1,00,000	80,000	Machinery	82,000	90,000
Sundry Creditors	1,15,000	1,08,000	Stock in Trade	1,00,000	1,14,000
Profit & Loss Account	20,000	27,000	Sundry Debtors	85,000	81,000
Depreciation Fund	40,000	44,000	Cash and Bank Balance	60,000	55,000
Reserve for			Temporary		
Contingencies	70,000	55,000	Investments	1,31,000	95,000
Outstanding Expenses	15,000	24,000	Prepaid Expenses	2,000	3,000
	6,10,000	5,88,000		6,10,000	5,88,000

The following additional information is also available

- (a) New machinery was purchased for Rs. 30,000 but old machinery costing Rs. 15,000 was sold for Rs. 5,000 accumulated depreciation was Rs. 8,000.
- (b) Rs. 20,000, 5% debentures were redeemed by purchase from open market @ Rs. 96.
- (c) Rs. 36,000 investments were sold at book value.
- (d) 12% dividend was paid in cash.
- (e) Rs. 15,000 was debited to contingency reserve for settlement of previous tax liability.

You are required to prepare Cash Flow Statement by Indirect Method.

(Unit-V, Prob. 7)

OR

- (b) How does a cash flow statement differ from funds flow statement.

(Unit-V, Q.No. 7)

FACULTY OF COMMERCE
B.Com. III Year VI Semester(CBCS) Examination
Model Paper - II

COST CONTROL AND MANAGEMENT ACCOUNTING

Time: 3 Hours

Max. Marks: 80

PART – A (5 × 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

ANSWERS

1. Define Break Even Analysis. (Unit-I, SQA. 12)
2. A plant introduces a product in the quantity of 10,000 units at a cost of Rs. 3.00 per unit.
 If 20,000 units are produced the cost per unit is Rs. 2.50. What is the variable cost per unit. (Unit-I, Prob. 3)
3. What are the objectives of standard costing? (Unit-II, SQA. 10)
4. The Standard and Actual requirement of material A are as under :
 Standard : 10,000 units @ Rs. 4.00 per unit
 Actual : 13,000 units @ Rs. 3.80 per unit
 Calculate the Material Cost Variance. (Unit-II, Prob. 6)
5. What is Trend Analysis? (Unit-III, SQA. 6)
6. Calculate 'Funds from Operations from the information given below as on 31st March, 2013
 (i) Net profit for the year ended 31st March 2013, ₹ 6,50,000.
 (ii) Gain on the sale of building ₹ 35,500.
 (iii) Goodwill appears in the books at ₹ 1,80,000 out of that 10 per cent has been written off during the year.
 (iv) Old machinery worth ₹ 8,000 has been sold for ₹ 6,500 during the year.
 (v) ₹ 1,25,000 have been transferred to the General Reserve Fund.
 (vi) Depreciation has been provided during the year on machinery and furniture at 20% whose total cost is ₹ 6,50,000. (Unit-IV, Prob. 7)
7. Calculate cash from operations:

Total sales	₹ 80,000
Debtors at the beginning	₹ 6,000
Debtors at the end	₹ 11,000
Total purchases	₹ 60,000
Creditors at the beginning	₹ 10,000
Creditors at the end	₹ 15,000

Total operating expenses	₹ 6,000
Prepaid expenses at the Beginning	₹ 2,000
Prepaid expenses at the End	₹ 1,000
Outstanding expenses at the end	₹ 2,000

(Unit-V, Prob. 2)

8. Importance of cash flow statement.

(Unit-V, SQA. 2)

PART – B (5 × 12 = 60 Marks)**Note:** Answer all the questions in not exceeding four pages each.

9. (a) How does management accounting differ from financial accounting.

(Unit-I, Q.No. 7)

OR

(b)	Year	Sales	Profit
	2015	3,00,000	40,000
	2016	4,50,000	85,000

Using the above information, calculate :

- (i) P/V Ratio
(ii) Fixed cost
(iii) BEP
(iv) Sales required to earn a profit of Rs. 1,00,000.

(Unit-I, Prob. 14)

10. (a) A factory is currently working at 50% capacity and produces 10000 units. Estimate the profits or the company when it works at 60% and 80% capacity.

At 60% working raw material cost increases by 2% and selling price falls by 2%. At the 80% working, raw material cost increases by 5% and selling price falls by 5%.

At 50% capacity working the product costs ₹ 180 per unit and is sold at ₹ 200 per unit.

The unit cost of ₹ 1.80 is made up as follows:

Particulars	₹
Material	100
Labour	30
Factory Overhead	30 (40% Fixed)
Administrative Overhead	20(50% Fixed)

(Unit-II, Prob. 4)

OR

- (b) S.V. Ltd. has furnished you the following data :

	Budgeted	Actual July 2006
Number of working days	25	27
Production in units	20,000	22,000
Fixed overheads	Rs. 30,000	Rs. 31,000

Budgeted fixed overhead rate is Re. 1.00 per hour. In July 2006 the actual hours worked were 31,500.

- Calculate : (i) Efficiency variance
 (ii) Capacity variance
 (iii) Calendar variance
 (iv) Volume variance
 (v) Expenditure variance and
 (vi) Total overhead variance.

(Unit-II, Prob. 16)

11. (a) X Ltd. has a current ratio of 4.5:1 and acid test ratio of 3:1. If the inventory is ₹ 24,000, find out its current liabilities.

(Unit-III, Q.No. 15)

OR

- (b) The following is the Trading and P&L A/c for the year ended 31st March, 2013 and the Balance Sheet on that date of ABC Ltd.

Particulars	₹	Particulars	₹
To Opening Stock	9,950	By Sales	85,000
To Purchases	54,525	By Closing Stock	14,900
To Wages	1,425		
To Gross Profit	34,000		
	99,900		99,900
To Administration Expenses	15,000	By Gross Profit	34,000
To Selling expenses	3,000	By Interest	300
To Financial expenses	1,500	By Profit on sale of shares	600
To Loss on sale of Assets	400		
To Net Profit	15,000		
	34,900		34,900

Balance Sheet

Liabilities	₹	Assets	₹
Share Capital	20,000	Land & Buildings	15,000
Reserves	9,000	Plant & Machinery	8,000
Current Liabilities	13,000	Stock	14,900
P&L A/c	6,000	Debtors	7,100
Cash at Bank	3,000		
	48,000		48,000

Calculate :

- (i) Gross profit ratio
- (ii) Net profit ratio
- (iii) Operating ratio
- (iv) Current ratio
- (v) Acid test ratio
- (vi) Stock turnover ratio.

(Unit-III, Prob. 21)

12. (a) From the following balance sheets and additional information given, you are required to calculate funds from operations for the year ended 2011.

Liabilities	2010 `	2011 `	Assets	2010 `	2011 `
Share Capital	1,00,000	1,50,000	Land & Buildings	1,00,000	95,000
General Reserve	30,000	30,000	Plant & Machinery	80,000	90,000
Profit & Loss A/c	20,000	22,000	Stocks	70,000	1,10,000
6% Debentures	80,000	80,000	Debtors	20,000	25,000
Creditors	65,000	58,000	Investments	—	10,000
Provision for tax	5,000	10,000	Cash	10,000	10,000
			Goodwill	20,000	10,000
	<u>3,00,000</u>	<u>3,50,000</u>		<u>3,00,000</u>	<u>3,50,000</u>

Additional Information :

1. During 2011, dividends of ` 15,000 were paid.
2. Depreciation written off plant and machinery amounted to ` 6,000 and no depreciation has been charged on land and buildings.
3. Provision for tax made during the year ` 5,000.
4. Profit on sale of machinery ` 2,000.

(Unit-IV, Q.No. 9)

OR

- (b) From the following Balance Sheets of Pioneers Ltd as on 31.3.12 and 31.3.2013, prepare
- (i) A funds flow statement
 - (ii) A schedule of changes in the working capital.

Liabilities	2012 (`)	2013 (`)	Assets	2012 (`)	2013 (`)
Share capital	4,00,000	4,00,000	Goodwill	48,000	48,000
General Reserve	56,000	72,000	Building	1,60,000	1,44,000
P & L A/c	64,000	62,000	Plant	1,48,000	1,44,000
Sundry Creditors	32,000	11,600	Investments	40,000	48,000
Bills payable	4,800	3,200	Bills receivable	8,000	8,800
Provision for taxation	64,000	72,000	Stock	1,20,000	93,600
Provision for Doubtful debts	1,600	2,400	Debtors	72,000	76,000
			Cash at Bank	26,400	60,800
	<u>6,22,400</u>	<u>6,23,200</u>		<u>6,22,400</u>	<u>6,23,200</u>

Additional Information:

- (i) Depreciation on plant ₹ 32,000
 (ii) Provision for taxation of ₹ 76,000 was made during the year 2013
 (iii) Interim Dividend paid ₹ 32,000 (Unit-IV, Prob. 11)
13. (a) Describe the advantage and limitations of cash flow statement. (Unit-V, Q.No. 4)

OR

- (b) From the following details, prepare a cash flow statement.

Balance Sheets

Liabilities	2017 (₹)	2018 (₹)	Assets	2017 (₹)	2018 (₹)
Share Capital	10,000	15,000	Land	4,000	4,000
P & L A/c	5,000	8,000	Machinery	3,000	5,000
General Reserve	4,000	6,000	Stock	10,000	12,000
Creditors	8,000	12,000	Debtors	10,000	15,000
Bills payable	5,000	3,000	Cash	5,000	8,000
	32,000	44,000		32,000	44,000

Additional Information :

During the year depreciation charged on machinery for ₹ 1,000 and dividend paid ₹ 2,000.

(Unit-V, Prob. 14)

FACULTY OF COMMERCE
B.Com. III Year VI Semester(CBCS) Examination
Model Paper - III

COST CONTROL AND MANAGEMENT ACCOUNTING

Time: 3 Hours

Max. Marks: 80

PART – A (5 × 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

ANSWERS

1. What is CVP Analysis?

(Unit-I, SQA. 2)

2. A manufacturing company finds that while the cost of making a component No. 0.51 in shown workshop is ₹ 8.00 each, the same is available in market at ₹ 6.50 with an assurance of continuous Supply. Give your suggestion whether to make or buy this component. Give also your views in case the supplier reduces the price from ₹ 6.50 to ₹ 5.50. The cost data is as follows:

	₹
Materials	3.00
Direct labour	2.00
Other Variable Expenses	1.00
Depreciation and other Fixed Expenses	2.00
	8.00

(Unit-I, Prob. 15)

3. Variance Analysis.

(Unit-II, SQA. 11)

4. From the data given below, calculate each of the three wage variance for the two departments:

Particulars	Dept. - A	Dept. - B
Actual Gross Wages	Rs. 1,968	Rs. 1,789
Std. Hours produced	8,000	6,000
Std. Rate per hour	0.30 P	0.35 Paise
Actual Hours worked	8,200	5,800

(Unit-II, Prob. 11)

5. What are the objectives of Ratios Analysis?

(Unit-III, SQA. 8)

6. What is a funds flow statement?

(Unit-IV, SQA. 1)

7. Calculate cash from operations:

Purchases ₹ 2,25,000; Sales ₹ 3,00,000; Expenses ₹ 40,000,

Debtors at the beginning of the year ₹ 45,000

Debtors at the end of the year ₹ 60,000.

(Unit-V, Prob. 3)

8. Explain the features of cash flow statement.

(Unit-V, SQA. 3)

PART – B (5 × 12 = 60 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. (a) Explain the advantages and limitations of Management Accounting. **(Unit-I, Q.No. 6)**

OR

- (b) Abhishek Ltd manufactures a product whose cost details are given below:

Material Rs. 35; Labour Rs. 12.50; Factory OH (50% Fixed) Rs. 62.50; Sales Overhead (25% Variable) Rs. 8.00; 60,000 Units of Rs. 118.00.

The Company sells 60,000 units of the product at Rs. 143 per unit in the domestic market. It received an order to supply 20,000 units of the product at Rs. 98 per unit, which will be sold in the Foreign Market. There is sufficient spare capacity available (with the company. Should the company accept or reject the offer? **(Unit-I, Prob. 24)**

10. (a) Excellent Engineering works had prepared its budget for 2018, based on the production of one lakh units of their only product as follows :

	(Rs. in '000's)
a) Raw Materials	252
b) Direct Labour	75
c) Direct Expenses	10
d) Works Overhead (60% Fixed)	225
e) Administration Overheads	40
f) Selling Overheads (50% Fixed)	20

For want of demand, the actual production for that period was only 60,000 units. Calculate the budgeted cost per unit under both the original plan and under actual performance.

(Unit-II, Prob. 3)

OR

- (b) From the data given below, calculate each of the three wage variance for the two departments:

Particulars	Dept. - A	Dept. - B
Actual Gross Wages	Rs. 1,968	Rs. 1.789
Std. Hours produced	8,000	6,000
Std. Rate per hour	0.30 P	0.35 Paise
Actual Hours worked	8,200	5,800

(Unit-II, Prob. 11)

11. (a) From the following information, make out a statement of proprietors tuna with as many details as possible:

- (a) Current ratio = 2.5
 (b) Liquid ratio = 1.5
 (c) Proprietary ratio = 0.75 (Fixed Assets/Proprietary Fund)
 (d) Working capital = ₹ 60,000
 (e) Reserves and surplus = ₹ 40,000
 (f) Bank O.D. = 10,000.

Note: There are no long term loans or investments in fictitious assets.

(Unit-III, Prob. 23)

OR

- (b) The following are the Balance Sheets of Ram Ltd. and Shyam Ltd. for the year ending 31-3-2012.

Liabilities	Ram Ltd. (₹)	Shyam Ltd. (₹)	Assets	Ram Ltd. (₹)	Shyam Ltd. (₹)
Equity share capital	2,50,000	1,70,000	Land and buildings	3,50,000	2,75,000
Pref. share capital	1,20,000	80,000	Plant and machinery	2,70,000	3,00,000
Reserves and surplus	50,000	70,000	Investment (Temporary)	72,000	12,000
Loans	3,50,000	2,79,000	Book-debts	47,500	25,000
Bills payable	25,000	14,000	Prepaid expenses	35,400	-
Sundry creditor	18,000	8,000	Cash at bank	48,690	21,000
O/S expenses	8,590	4,500			
Dividend declared	2000	7,500			
	8,23,590	6,33,000		8,23,590	6,33,000

Prepare a Comparative Balance Sheet and analyze Financial Position.

(Unit-III, Prob. 4)

12. (a) From the following condensed balance sheets of Abhishek Ltd. for the year ending 31st March, 2012 and 2013, draw out a Funds Flow Statement and a Statement of Changes in Working Capital.

Liabilities	2012 (₹)	2013 (₹)	Assets	2012 (₹)	2013 (₹)
Equity Share Capital	3,00,000	4,00,000	Goodwill	60,000	55,000
6% Red. Pref. Shares Capital	80,000	50,000	Land & Buildings	1,25,000	85,000
Capital Reserve	-	20,000	Plant & Machinery	1,20,000	2,25,000
General Reserve	30,000	40,000	Furniture	15,000	12,000
P&LA/c	26,000	35,000	Trade Investment	12,000	48,000
Sundry Creditors	30,000	58,000	Sundry Debtors	65,000	1,05,000
BIP	12,000	8,000	Inventories	90,000	84,000
O/S Expenses	6,000	5,000	B/R	16,000	30,000
Prop. Dividend	30,000	42,000	Cash	13,000	20,000
Provision for Taxation	32,000	36,000	Bank	15,000	20,000
			Preliminary Expenses	15,000	10,000
	5,46,000	6,94,000		5,46,000	6,94,000

Additional information :

- (i) A piece of land has been sold out in 2013 and the balance has been revalued. Profit on sale and revaluation being transferred to capital reserve account.
- (ii) Depreciation on Plant and Machinery has been written off ₹ 24,000 in 2013.
- (iii) No depreciation is charged on land and buildings.
- (iv) A machinery was sold for ₹ 16,000 (WDV Being ₹ 20,000)
- (v) No furniture is sold out in the year 2013.
- (vi) An interim dividend of ₹ 20,000 has been paid.
- (vii) ₹ 3000 has been received as dividend on trade investments.

(Unit-IV, Prob. 10)

OR

- (b) Explain the objectives and limitations of funds flow statement. **(Unit-IV, Q.No. 4, 5)**
- 13. (a) Explain the procedure for preparing cash flow statement. **(Unit-V, Q.No. 5)**

OR

- (b) From the following information prepare cash flow statement by indirect method of Ram Business Corporation.

Liabilities and Capital	Jan.-1, 2015	31-12-2015	Assets	Jan.-1, 2015	31-12-2015
Share capital	35,000	43,500	Cash and bank	40,000	44,400
Surplus	15,000	19,500	Accounts receivable	10,000	20,700
Bonds payable	22,000	22,000	Inventories	15,000	15,000
Bonds payable discount	(2,000)	(1,800)	Land and building	4,000	4,000
Current liabilities	30,000	20,000	Business premises	20,000	16,000
Bank loan	–	12,000	Plant and equipment	15,000	17,000
			Accumulated depreciation	(5,000)	(2,800)
			Patents and trademarks	1,000	900
	1,00,000	1,15,200		1,00,000	1,15,200

Additional Information

- (i) A building that costs ₹ 4,000 and which had a book value at ₹ 1,000 was sold for ₹ 1,400.
- (ii) The depreciation charge for the period was ₹ 800.
- (iii) There was a ₹ 5,000 issue of capital stock.
- (iv) Cash dividend of ₹ 2,000 and stock dividend of ₹ 3,500 were declared.

(Unit-V, Prob. 15)

FACULTY OF COMMERCE
B.Com. III Year VI-Semester (CBCS) Examination
September / October - 2020
MANAGERIAL ACCOUNTING

Time: 2 Hours

Max. Marks: 80

PART-A (4 × 5 = 20 Marks)

Note: Answer any Four questions.

ANSWERS

1. Need of Management Accounting. (Unit-I, SQA.16)
2. Marginal Costing Vs Absorption Costing. (Unit-I, SQA.1)
3. CVP Analysis. (Unit-I, SQA.2)
4. Following information relates to Coromandel Co. Ltd. Which produces washing machines.

Cost per unit Material ` 50; Labour ` 25; Direct Expenses ` 15; Fixed Expenses ` 10; Profit ` 20; Selling price ` 120

The production capacity of the factory is 10,000 units. At present, a supplier has offered to sell the same item for ` 95. Should the company produce the item or buy it from the supplier? Give reasons. (Unit-I, Prob.17)
5. From the information given below, prepare a Manufacturing Overhead Budget for the quarter ending December 31, 2010. (Out of Syllabus)

Budget output during the quarter 5,000 units; Fixed Overheads ` 30,000; Variable Overheads ` 15,000 (varying at the rate of ` 5 per unit); Semi - Variable Overheads ` 21,000 (40% fixed and 60% varying @ 3 per unit)
6. Standard Costing Vs Historical Costing. (Unit-II, SQA.1)
7. The standard Quantity of material specified for the production of 1 unit of finished goods is 3 Kgs. The actual production is 300 units and the actual quantity of material used is 925 Kgs. The standard price is ` 2 per Kg. Find out Material Quantity variance. (Unit-II, Prob.7)
8. From the following particulars, find the minimum number of units required to be sold so that no cash loss is incurred. Selling Price ` 20; Variable Cost per unit ` 10; Administration Expenses ` 10,000; Depreciation ` 6,000. (Unit-I, Prob.13)

PART - B (4 × 15 = 60 Marks)

Note: Answer any Four questions in not exceeding Four pages each.

9. Define Management Accounting. Explain its importance. (Unit-I, Q.No.1, 4)
10. How does Management Accounting differ from Financial Accounting? (Unit-I, Q.No.7)
11. Explain in detail the importance of Marginal Costing. (Unit-I, Q.No.11)

12. From the following particulars, find;

- (a) Fixed Costs
- (b) Break Even sales
- (c) Total Sales and
- (d) Profit

Margin of Safety ₹ 10,000 which represents 40% of Sales: P/v ratio 50%.

(Unit-I, Prob.11)

13. Anand Ltd. produces 2,00,000 units of a product 'Jay' at a Total Cost of ₹ 25,00,000 including ₹ 10 per unit of Variable Cost. The Selling Price is ₹ 15 per unit. On account of recession, demand has fallen and Anand Ltd has to cut the Selling Price by 20%. The management wants to know whether the factory should be shut-down till the demand picks up again or continue production.

(Unit-I, Prob.23)

14. Sanjay Ltd. manufactures a product whose cost details are given below:

Particulars	₹
Material	35.00
Labour	12.50
Factory Overhead (50% Fixed)	62.50
Sales Overhead (25% Variable)	08.00
60,000 units	118.00

The company sells, 60,000 units of the product at ₹ 143 per unit in the domestic market. It receives an order to supply 20000 units of the product at ₹ 98 per unit, which will be sold in the foreign market. There is sufficient spare capacity available with the company. Should the Company accept or reject the offer?

(Unit-I, Prob.24)

15. A factory is currently working at 50% capacity and produces 10000 units. Estimate the profits or the company when it works at 60% and 80% capacity.

(Unit-II, Prob.4)

At 60% working raw material cost increases by 2% and selling price falls by 2%. At the 80% working, raw material cost increases by 5% and selling price falls by 5%.

At 50% capacity working the product costs ₹ 180 per unit and is sold at ₹ 200 per unit.

The unit cost of ₹ 1.80 is made up as follows:

Particulars	₹
Material	100
Labour	30
Factory Overhead	30 (40% Fixed)
Administrative Overhead	20(50% Fixed)

16. Following information is given about a Ltd. Concern you are required to prepare a Selling Overheads Budget:

Advertisement 2,000

Salaries of Sales Department 2,000

Expenses of Sales Department (fixed) 950

Salesman's remuneration:

Salaries 6,000

Commission @ 1% on Sales affected

Carriage outward: Estimated @ 5% on sales

Agent Commission 6% on Sales

Sales during the period were estimated as follows:

` 1,00,000 including Agent's sales ` 10,000

` 1,50,000 including Agent's sales ` 20,000

` 2,00,000 including Agent's sales ` 20,000

(Out of Syllabus)

17. The following standard and actual data relate to a manufacturing concern:

(Unit-II, Prob.9)

Material	SQ	SP	AQ	AP
	Kgs	`	Kgs	`
X	40	10	42	8
Y	30	08	35	10

Find the Material Cost Variances.

18. What is Standard Costing? List out the advantages of Standard Costing.

(Unit-II, Q.No.14,17)

FACULTIES OF COMMERCE**B.Com. VI – Semester (CBCS) (Instant) Examination****September / October - 2019****MANAGERIAL ACCOUNTING****Time : 3 Hours]****[Max. Marks : 80****PART - A (5 × 4 = 20 Marks)****[Short Answer Type]****Note:** Answer any five of the following questions not exceeding 20 lines each.**ANSWERS**

1. Functions of Managerial Accounting. **(Unit-I, SQA.4)**
2. A plant introduces a product in the quantity of 10,000 units at a cost of Rs. 3.00 per unit. If 20,000 units are produced the cost per unit is Rs. 2.50. What is the variable cost per unit. **(Unit-I, Prob.3)**

3. The sales and profits during two years are as follows :

Year	Sales (in Rs.)	Profit (Rs.)
2017	3,00,000	30,000
2018	4,00,000	50,000

You are required to calculate Breakeven point and Margin of Safety.

(Unit-I, Prob.6)

4. The following particulars are extracted from the records of ABC Ltd.

Particulars	Products	
	R	S
Sales (per unit)	200	250
Material Consumption	5 Kg	6 Kg
Material Cost	Rs. 25	Rs. 30
Direct Wages	Rs. 20	Rs. 22
Direct Expenses	Rs. 6	Rs. 8
Machine Hours (used)	4 Hrs	5 Hrs
Fixed Overheads	Rs. 22	Rs. 25

(Unit-I, Prob.5)

Direct wages per hour is Rs. 6 Find out the profitability if the key factor is material.

5. Budget Manual **(Unit-II, SQA.15)**
6. Calculate the Sales
Opening stock Rs. 60,000 ; Purchases Rs. 70,000 ; Direct expenses Rs. 40,000 ; Closing stock Rs. 35,000 **(Out of Syllabus)**
7. Standard Costing. **(Unit-II, SQA.9)**
8. The Standard and Actual requirement of material A are as under :
Standard : 10,000 units @ Rs. 4.00 per unit
Actual : 13,000 units @ Rs. 3.80 per unit
Calculate the Material Cost Variance. **(Unit-II, Prob.6)**

PART - B (5 × 12 = 60 Marks)**[Essay Answer Type]**

Note: Answer all the questions in not exceeding four pages each.

9. (a) Define Management Accounting and explain its advantages and limitations. (Unit-I, Q.No.1,6)
OR

- (b) Define and distinguish between Cost and Management Accounting. (Unit-I, Q.No.8)

10. (a) The following data is given :

Fixed Expenses Rs. 10,00,000; Variable Expenses Rs. 10 per unit.

Selling price Rs. 15 per unit.

Indicate the number of units to be manufactured and sold

(i) to Breakeven

(ii) to earn a profit of Rs. 10,000

(iii) What additional units would be necessary to increase the above profit by Rs. 5,000

(Unit-I, Prob.9)

(OR)

- (b) A company produces only one product, which had the following costs :

Variable manufacturing costs Rs. 4 per unit

Fixed Manufacturing cost Rs. 1,00,000 per annum

The normal capacity is set at 1,00,000 units

There are no work-in-process inventories. Fixed overhead rate is Rs. 1 per unit.

In 2018, the company produced 1,00,000 units and sold 90,000 units at a price of Rs. 8 per unit. In 2019, the company produced 1,10,000 units and sold 1,15,000 units at the same price.

You are required to prepare Income statement for 2018 and 2019 based on Absorption costing and Marginal costing.

(Unit-I, Prob.10)

11. (a) Following is the information related to Coromandel Company Ltd. Producing washing machines. Cost (per unit) Materials Rs. 50 ; Labour Rs. 25 ; Direct Expenses Rs. 15 ; Fixed expenses Rs. 10; Profit Rs. 20; Selling price Rs. 120.

The production capacity of the factory is 10,000 units. At present, a supplier has offered to sell the same item for Rs. 95. Should the company produce the item or buy it from the supplier? Give reasons.

(Unit-I, Prob.17)

(OR)

- (b) Anand Ltd., produces 2,00,000 units of a product X at a total cost of Rs. 25,00,000 including Rs. 10 per unit of variable cost. The selling price is Rs. 15 per unit. On account of recession, demand has fallen and Anand Ltd. has to cut the selling price by 20%. The management wants to know if the factory should be shut-down till the demand picks up again ?

(Unit-I, Prob.23)

12. (a) From the following particulars, prepare a production Budget of Arun sales corporation for the year ended June 20, 2018.

Product	Sales-units (As per Sales Budget)	Estimated stock in units	
		July 1, 2017	June 30, 2018
X	3,00,000	28,000	30,000
Y	2,00,000	10,000	9,000
Z	1,40,000	16,000	16,000

(Out of Syllabus)

(OR)

- (b) Excellent Engineering works had prepared its budget for 2018, based on the production of one lakh units of their only product as follows :

	(Rs. in 000's)
(a) Raw Materials	252
(b) Direct Labour	75
(c) Direct Expenses	10
(d) Works Overhead (60% Fixed)	225
(e) Administration Overheads	40
(f) Selling Overheads (50% Fixed)	20

For want of demand, the actual production for that period was only 60,000 units. Calculate the budgeted cost per unit under both the original plan and under actual performance.

(Unit-II, Prob.3)

13. (a) From the data given below, calculate each of the three wage variance for the two departments:

Particulars	Dept. - A	Dept. - B
Actual Gross Wages	Rs. 1,968	Rs. 1,789
Std. Hours produced	8,000	6,000
Std. Rate per hour	0.30 P	0.35 P
Actual Hours worked	8,200	5,800

(Unit-II, Prob.11)

(OR)

- (b) From the given data calculate :

(i) Material Price variance (ii) Material Cost Variance (iii) Material Mix variance

Standards :

(i) 250 kg of Raw material is required for producing 175 kgs of finishing products.

(ii) Price of material per kg. Rs. 4

Actuals :

(i) Production Rs. 52,500 kg

(ii) Materials consumed 70,000 kgs

(iii) Cost of materials Rs. 2,73,000

(Unit-II, Prob.8)

FACULTIES OF COMMERCE
B.Com. VI – Semester (CBCS) (Instant) Examination
May / June - 2019
MANAGERIAL ACCOUNTING

Time : 3 Hours]

[Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

ANSWER

1. Features of Management Accounting. (Unit-I, SQA.3)
2. Calculate the sales required to earn a profit of Rs. 1,20,000. (Unit-I, Prob.1)
 Sales Rs. 6,00,000; Variable Cost Rs. 3,75,000, Fixed Cost Rs. 1,80,000.
3. Given Margin of Safety Rs. 20,000 (which represents 20% of Sales); P/V Ratio = 50%. Find out the Break-Even Sales and Fixed Cost. (Unit-I, Prob.2)
4. From the following table, find out the profitability. (Unit-I, Prob.4)

	Product A (Rs.)	Product B (Rs.)
Sale Price (Per Unit)	20	200
Variable Cost (Per Unit)	9	110
Contribution	11	90
Mfg. Time-Hours of the Machine	3	20

5. Budget Centre (Unit-II, SQA.13)
6. Calculate the cost of Production: (Out of Syllabus)
 Opening Stock Rs. 10,000; Purchases Rs. 20,000; Direct Expenses Rs. 5,000;
 Sales Rs. 50,000; Closing Stock Rs. 65,000.
7. Standard Rate. (Unit-II, SQA.14)
8. Calculate Material Price Variance of Product 'A' Standard Price (Rs. Per Unit) 5.00; Actual Price (Rs. Per Unit) 6.00; Units Produced 600. (Unit-II, Prob.5)

PART - B (5 × 12 = 60 Marks)

Note: Answer ALL the questions in not exceeding four pages each.

9. (a) Define Management Accounting and explain its objectives and scope. (Unit-I, Q.No.1,5)
- OR
- (b) Define and distinguish between Financial and Management Accounting. (Unit-I, Q.No.7)

10. (a) The following figures are extracted from the books of Vijay Irons Ltd. for the year 2018 and 2019 March, whose capacity is 10,000 irons per year. **(Unit-I, Prob.7)**

Direct Materials	Rs. 3.50 per unit
Direct Labour	Rs. 0.50 per unit
Fixed overhead	Rs. 2.00 per unit
Selling Price per unit	Rs. 8.00

	2018	2019
Production in Units	10,000	10,000
Sales in Units	8,000	12,000

Prepare Cost Statements assuming that the Company uses Marginal Costing.

OR

- (b) The following data are available from the records of a Company: Sales Rs. 1,00,000; Variable Cost Rs. 60,000; Fixed Cost Rs. 20,000.

You are required to calculate P/V Ratio; BEP and Margin of Safety. Also study the impact of change in the following variable on P/V ratio; BEP and Margin of Safety.

(i) Increase in selling price by 10%

(ii) Decrease in Fixed Cost by Rs. 5,000.

(Unit-I, Prob.8)

11. (a) The cost of manufacturing of 8000 units of 'X' product is given below:
Direct Materials Rs. 8,000; Direct Labour Rs. 64,000; Variable Overheads Rs. 32,000. Fixed Overheads Rs. 40,000; Fixed Overheads is inclusive of Rs. 24,000 that continues regardless of the decision. The same product is available in the market for Rs. 16 per unit. Should the company make or buy the product.

(Unit-I, Prob.16)

OR

- (b) Ahhishek Ltd manufactures a product whose cost details are given below:
Material Rs. 35; Labour Rs. 12.50; Factory OH (50% Fixed) Rs. 62.50; Sales Overhead (25% Variable) Rs. 8.00; 60,000 Units of Rs. 118.00.

The Company sells 60,000 units of the product at Rs. 143 per unit in the domestic market. It received an order to supply 20,000 units of the product at Rs. 98 per unit, which will be sold in the Foreign Market. There is sufficient spare capacity available (with the company). Should the company accept or reject the offer?

(Unit-I, Prob.24)

12. (a) You are requested to prepare a Sales Overhead Budget from the forecasts given below:

	Rs.
Advertisement	5,000
Salaries of Sales Dept.	10,000
Expenses of Sales Dept.	3,000
Counter Salesmen Salary Allowances	12,000

Commission at 10% on their sales and Expenses at 5% on their Sales.
Sales have been budgeted as under.

Period	Counter Sales (Rs.)	Travelling Salesman Sales (Rs.)
A	1,60,000	20,000
B	2,40,000	30,000
C	2,80,000	40,000

(Out of Syllabus)

OR

- (b) The following expenses are incurred in a factory for the months of January and February in a particular year:

	Jan. (Rs.)	Feb. (Rs.)
Wages	16,000	20,000
Salaries	10,000	12,000
Factory Expenses	14,000	16,000

Calculate the Budgeted Cash Outflow for the month of February taking in to account that:

- (i) Wages are paid at the beginning of next week
- (ii) Salaries are paid at the beginning of next month, and
- (iii) Time lag in case of factory expenses is two weeks.

(Out of Syllabus)

13. (a) The details regarding composition and weekly wage rates of labour force engaged on a job scheduled to be completed in 30 weeks are as follows:

Category of workers	Std. No. of Workers	Weekly Wage Rate per Labourer	No. of Workers	Actual Weekly Wage Rate per Labourer
Skilled	75	60	70	70
Semi-Skilled	45	40	30	50
Unskilled	60	30	80	20

The work is actually completed in 32 weeks. Calculate the various labour variances.

(Unit-II, Prob.10)

OR

- (b) Calculate Overhead Variances :

	Standard	Actual
No. of Units	4,000	3,800
Working Days	20	21
Fixed Overhead	Rs. 40,000	Rs. 39,000

(Unit-II, Prob.13)