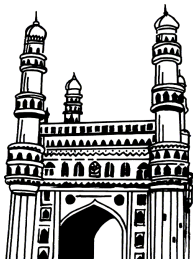
Rahul's ✔
Topper's Voice

AS PER CBCS SYLLABUS



B.B.A.

II Year III Sem

(Osmania University)

Latest Edition

FINANCIAL MANAGEMENT

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

Also useful for :
Kakatiya *University*
Satavahana *University*
Mahatma Gandhi University
Palamuru University
Telangana University

Price : ₹ .199/-

- by -

WELL EXPERIENCED LECTURER

Since 1986

***Rahul Publications*™**

Hyderabad. Cell : 9391018098, 9505799122.

All disputes are subjects to Hyderabad Jurisdiction only

Subjects List

Skill Enhancement Course-1

(a) Communication Skills

(b) Professional Skills

Skill Enhancement Course-2

(a) Basic Quality Management

(b) Advanced Computer

Skills Discipline Specific Course

- Human Resource Management
- Information Technology for Business
- Financial Management
- English
- **Second Language**
  - (i) Telugu
  - (ii) Hindi
  - (iii) Sanskrit

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*

Sole Distributors : **Cell : 9391018098, 9505799122**

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.

FINANCIAL MANAGEMENT

CONTENTS

STUDY MANUAL

SOLVED MODEL PAPERS

SOLVED PREVIOUS QUESTION PAPERS

SYLLABUS

UNIT - I

NATURE OF FINANCIAL MANAGEMENT :

Finance and relation with other disciplines; Scope of Financial Management; Profit Maximization Vs. Wealth Maximization Vs. Value Maximin Traditional and Modern Approach of FM; Functions of finance – Objectives of Financial Management; Investment Decision, Financing Decision, Current Assets Management Decision and Dividend Decision - Organisation of finance function;

UNIT - II

CONCEPT OF TIME VALUE OF MONEY :

Concept of Time Value of Money, compounding, discounting, present value, future value, and annuity; capital budgeting –meaning, features; applications of Discounted Cash Flow (DCF) in capital budgeting, calculation of NPV and IRR

UNIT - III

SOURCES OF LONG TERM FINANCE :

Sources of Long term finance- features of equity shares, preference shares, debentures, long term loans; Capital Structure – meaning, determinants of capital structure; cost of capital – component costs of capital, weighted average cost of capital; Dividend Policy Decision – types of dividend, determinants of dividend policy.

UNIT - IV

WORKING CAPITAL MANAGEMENT :

Gross Vs net working capital, determinants of working capital; Management of Cash - Preparation of Cash Budgets (Receipts and Payment Method only); Cash management technique (Lock box, concentration banking)

UNIT - V

RECEIVABLES MANAGEMENT – OBJECTIVES :

Credit Policy, Cash Discount, Debtors Outstanding and Ageing Analysis; Inventory Management (Very Briefly) - ABC Analysis; Minimum Level; Maximum Level; EOQ (Basic Model); Reorder Level; Safety Stock.

Contents

UNIT - I

UNIT - II

Topic **Page No.**

UNIT - III

UNIT - IV

Frequently Asked & Important Questions

UNIT - I

1. Define financial management. Elucidate the relationship between financial management and other disciplines of management.

Ans : **(July.-23, Jan.-23, March-22, May-19)**

Refer Unit-I, Q.No. 1, 3.

---

2. Explain in detail the goals of finance function.

Ans : **(July.-23, Jan.-23, March-22, Dec.-21, July-21, May-19, June-18)**

Refer Unit-I, Q.No. 7.

---

3. Distinguish between Profit Maximization and Wealth Maximization.

Ans : **(July.-23, Dec.-21, July-21)**

Refer Unit-I, Q.No. 10.

---

4. State the various approaches to finance function.

Ans : **(Imp.)**

Refer Unit-I, Q.No. 13.

---

5. Explain the various decisions of financial manager.

Ans : **(July.-23, Jan.-23, March-22, May-19)**

Refer Unit-I, Q.No. 16.

---

6. "Finance function is closely related to other functions" - Discuss.

Ans : **(Jan.-23, June-18)**

Refer Unit-I, Q.No. 18.

UNIT - II

1. Define Time value of money. Explain the reasons for time value of money.

Ans : **(Jan.-23, Imp.)**

Refer Unit-II, Q.No. 1.

---

2. Explain briefly about future value techniques.

Ans : **(Imp.)**

Refer Unit-II, Q.No. 3.

3. Explain briefly about present value techniques.

Ans : **(July.-23, Jan.-23, Imp.)**

Refer Unit-II, Q.No. 4.

---

4. You have paid in lumpsum an amount of ` 2,00,000/- towards the repayment of a loan of ` 1,50,000/- taken by you 5 years back. What is the implied rate of interest?

Sol : **(Imp.)**

Refer Unit-II, Prob. 4.

---

5. A person is likely to get Rs. 9,876 every year for the next seven years. If the discount rate is 5%, find the present value of this money.

Sol : **(Imp.)**

Refer Unit-II, Prob. 7.

---

6. An investor invested Rs. 3,45,678 every year in a bank for 13 years. The bank offers 7.5% interest p.a. Find the future value of money.

Sol : **(Imp.)**

Refer Unit-II, Prob. 10.

---

7. Define capital budgeting. State the features of capital budgeting.

Ans : **(July.-23, Imp.)**

Refer Unit-II, Q.No. 6, 7.

---

8. What is Internal Rate of Return? How is it calculated? State the merits and demerits of Internal Rate of Return.

Ans : **(July.-23, March-22, Imp.)**

Refer Unit-II, Q.No. 14.

---

9. A project requires an investment of ` 1,44,000 and is expected to generate cash in flows of ` 54,000, ` 63,000, ` 72,000, ` 63,000 and ` 54,000 per annum for the next five years. The risk free rate is 10%.

Evaluate the project using IRR method. If the following certainty equivalents are to be considered, how would you evaluate and interpret the project?

Year	1	2	3	4	5
C.E	0.96	0.92	0.88	0.82	0.79

Sol :

Refer Unit-II, Prob. 14.

---

10. A Project requires on investment of Rs. 12,00,000 and has a life of four years. The expected net cash flows from the project over the four years are Rs.4,50,000, Rs. 5,40,000, Rs. 3,60,000 and Rs. 2,82,000. The cost of capital is 11%. Find the internal rate of return of the project.

Sol : **(Imp.)**

Refer Unit-II, Prob. 18.

UNIT - III

1. Define finance. Explain the various sources of finance.

Ans : **(Dec.-21, July-21)**

Refer Unit-III, Q.No. 1.

2. Define equity shares. Explain the features of equity share capital.

Ans : **(Jan.-23, May-19)**

Refer Unit-III, Q.No. 2.

3. Define Preference shares. Explain the different types of preference shares.

Ans : **(Jan.-23, May-19)**

Refer Unit-III, Q.No. 4.

4. "Debentures occupy a very important place in the financial plan". Discuss the statement.

Ans : **(March-22, June-18)**

Refer Unit-III, Q.No. 9.

5. Point out the limitations of debenture financing.

Ans : **(June-18, Imp.)**

Refer Unit-III, Q.No. 11.

6. How Cost of debt is to be calculated.

Ans : **(May-19)**

Refer Unit-III, Q.No. 25.

7. A firm is considering an expenditure of Rs.75 lakhs for expanding its operations.

The relevant information is as follows :

Number of existing equity shares = 10 lakhs

Market value of existing share = Rs.100

Net earnings = Rs.100 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 92 per share and the costs of new issue will be Rs. 2 per share.

Sol : **(Imp.)**

Refer Unit-III, Prob. 4.

8. What is weighted average cost of capital. Explain the various steps to calculate weighted average cost of capital.

Ans : **(Imp.)**

Refer Unit-III, Q.No. 28.

9. State the classification of dividend.

Ans : **(Dec.-21, May-19)**

Refer Unit-III, Q.No. 31.

10. Explain the factors determining dividend policy.

Ans : **(March-22, Dec.-21, Imp.)**

Refer Unit-III, Q.No. 32.

11. Calculate Market price Walter's model and comment.

r = 10%, K = 10% Eps = 100

Different pay out Ratio = 10%, 50 %, 80 %, 100%

Sol : **(Imp.)**

Refer Unit-III, Prob. 20.

12. The equity capitalization rate is 11%. Earnings per share is ` 20/-. Determine the values of the shares as per Gordon's Model, under conditions of certainty, when the rates of return on investment are 12%, 11% and 10%, assuming the following

(a) 90% Retention

(b) 80% Retention and

(c) 50% Retention

Sol : **(Imp.)**

Refer Unit-III, Prob. 22.

UNIT - IV

1. Define the term working capital. State the components of working capital.

Ans : **(July.-23, March-22, Dec.-21, July-21, May-19)**

Refer Unit-IV, Q.No. 1, 3.

2. Distinguish between Net working capital and Gross working capital.

Ans : **(Jan.-23, Imp.)**

Refer Unit-IV, Q.No. 8.

3. What are the factors determining working capital.

Ans : **(July.-23, Dec.-21, July-21, May-19)**

Refer Unit-IV, Q.No. 9.

4. What is an operating cycle.

Ans : **(June-18)**

Refer Unit-IV, Q.No. 12.

5. The board of directors of Aravind mills limited request you to prepare a statement showing the working capital requirements for a level of activity of 30,000 units of output for the year. The cost structure for the company's product for the above mentioned activity level is given below.

Particulars	Cost per Unit (Rs.)
Raw materials	20
Direct labour	5
Overheads	15
Total	40
Profit	10
Selling price	50

(a) Past experience indicates that raw materials are held in stock, on an average for 2 months.

(b) Work in progress (100% complete in regard to materials and 50% for labour and overheads) will be half a month's production.

(c) Finished goods are in stock on an average for 1 month.

(d) Credit allowed to suppliers: 1 month.

(e) Credit allowed to debtors: 2 months.

(f) A minimum cash balance of Rs 25,000 is expected to be maintained.

Prepare a statement of working capital requirements.

Sol : **(Imp.)**

Refer Unit-IV, Prob. 3.

---

6. Explain the motives for holding cash.

Ans : **(Imp.)**

Refer Unit-IV, Q.No. 15.

---

7. Explain the importance of cash budget in cash management.

Ans : **(July.-23, June-18)**

Refer Unit-IV, Q.No. 19.

---

8. Explain the various methods to preparation of cash budget.

Ans : **(May-19)**

Refer Unit-IV, Q.No. 20.

9. S. K. Brothers wish to approach the bankers for temporary overdraft facility for the period from October 2010 to December 2010. During the period of this period of these three months, the firm will be manufacturing mostly for stock. You are required to prepare a cash budget for the above period.

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)
August	3,60,000	2,49,600	24,000
September	3,84,000	2,88,000	28,000
October	2,16,000	4,86,000	22,000
November	3,48,000	4,92,000	20,000
December	2,52,000	5,36,000	30,000

(a) 50% of credit sales are realized in the month following the sales and remaining 50% in the second following.

(b) Creditors are paid in the month following the month of purchase

(c) Estimated cash as on 1-10-2010 is Rs.50,000.

Sol : **(Imp.)**

Refer Unit-IV, Prob. 10.

---

10. Explain briefly about Concentration banking and lock box system.

Ans : **(March-22, Dec.-21, July-21)**

Refer Unit-IV, Q.No. 23.

UNIT - V

1. Define Receivable Management. Explain the various costs of maintaining receivables.

Ans : **(July.-23, Imp.)**

Refer Unit-V, Q.No. 1.

---

2. Explain the credit policy of Lenient and Stringent.

Ans : **(March-22, May-19)**

Refer Unit-V, Q.No. 8.

---

3. Explain the various methods used in receivables management.

Ans : **(Imp.)**

Refer Unit-V, Q.No. 11.

4. "The management of inventory must meet two - opposing needs." Enumerate.

Ans : **(June-18)**

Refer Unit-V, Q.No. 17.

5. Explain briefly about determining stock levels in inventory management.

Ans : **(Jan.-23, March-22, May-19)**

Refer Unit-V, Q.No. 18.

6. Define Economic Order Quantity. Explain the assumptions of EOQ.

Ans : **(Jan.-23, Imp.)**

Refer Unit-V, Q.No. 20.

7. What is ABC Analysis, explain how it is useful in effective control of inventory.

Ans : **(Jan.-23, Dec.-21, May-19)**

Refer Unit-V, Q.No. 22.

8. The annual requirement of a material is 2,34,555 units. The cost per unit is Rs.34 and the cost of placing an order is Rs. 345. The carrying cost per unit per annum is 18% of the unit price.

Find the

(i) EOQ

(ii) The number of orders to be placed in a year.

Sol : **(Imp.)**

Refer Unit-V, Prob. 7.

9. From the following information calculate :

(i) Re-order level

(ii) Maximum level

(iii) Minimum level

(iv) Average level

Normal usage: 100 units per week

Maximum usage: 150 units per week

Minimum usage: 50 units per week

Re-order quantity (EOQ) 500: units

Log in time: 5 to 7 weeks

Sol : **(Imp.)**

Refer Unit-V, Prob. 9.

10. Perform ABC analysis using the following data,

Item	Unit	Unit price (`)
1	700	5.00
2	2400	3.00
3	150	10.00
4	60	22.00
5	3800	1.50
6	4000	0.50
7	6000	0.20
8	300	3.50
9	30	8.00
10	2900	0.40
11	1150	7.10
12	410	6.20

Sol : **(Imp.)**

Refer Unit-V, Prob. 12.

UNIT I

NATURE OF FINANCIAL MANAGEMENT

Finance and relation with other disciplines; Scope of Financial Management; Profit Maximization Vs. Wealth Maximization Vs. Value Maximin Traditional and Modern Approach of FM; Functions of finance – Objectives of Financial Management; Investment Decision, Financing Decision, Current Assets Management Decision and Dividend Decision - Organisation of finance function

1.1 NATURE OF FINANCIAL MANAGEMENT

Q1. Define financial management.

Ans : **(May-19, Imp.)**

Introduction

Finance is the life blood of business. Without finance, the heart and brain of business cannot function implying thereby its natural death. Right from conceiving the idea of birth of a business to its liquidation, finance is required. It is a prerequisite for obtaining physical resources, which are needed to perform productive activities and carrying business operations such as sales, pay compensations, reserve for contingencies (unascertained liabilities) and so on. So, finance is the pivot around which the whole business operations cluster.

Finance may be defined as the provision of money at the time when it is required. Finance refers to the management of flows of money through an organization. It concerns with the applications of skills in the manipulation, use and control of money. Different authorities have interpreted the term 'finance' differently.

Meaning

To understand the meaning of Financial Management, one must understand the meaning of both words 'financial' and 'management' separately. 'Financial' means procuring sources of money supply and allocation of these sources on the basis of forecasting monetary requirements of the business. The word 'Management' refers to planning, organization, co-ordination and control of human activities and physical resources for achieving the objectives of an enterprise.

Financial management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. In other words it is concerned with acquiring, financing and managing assets to accomplish the overall goal of a business enterprise (mainly to maximize the shareholder's wealth).

Definitions

i) **According to Solomon** "Financial management is concerned with the efficient use of an important economic resource, namely capital funds"

ii) **According to J.L.Massie** "Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient business operations"

iii) **According to Phillippatus** "Financial Management is concerned with managerial decisions that result in the acquisition and financing of long-term and short-term credits of the firm. As such it deals with the situations that require selection of specific assets (or combination of assets), the selection of specific liability (or combination of liabilities) as well as the problem of size and growth of an enterprise. The analysis of these decisions is based on the expected inflows and outflows of funds and their effects upon managerial objectives".

iv) **According to J.F. Bradley**, "Financial management is the area of business management devoted to the judicious use of capital & careful selection of sources of capital in order to enable a spending unit to move in the direction of reaching its goals".

v) **According to Howard & Upton,** "Financial management is the application of the planning & control functions of the finance functions".

vi) **According to Weston & Brigham,** "Financial management is an area of financial decision making harmonizing individual motives & enterprise goals".

Q2. Explain the nature of financial management.

Ans :

1. Analytical Thinking

Under financial management financial problems are analyzed and considered. Study of trend of actual figures is made and ratio analysis is done.

2. Continuous Process

previously financial management was required rarely but now the financial manager remains busy throughout the year.

3. Basis of Managerial Decisions

All managerial decisions relating to finance are taken after considering the report prepared by the finance manager. The financial management is the base of managerial decisions.

4. Maintaining Balance between Risk and Profitability

Larger the risk in the business larger is the expectation of profits. Financial management maintains balance between the risk and profitability.

5. Coordination between Process

There is always a coordination between various processed of the business.

6. Centralized Nature

Financial management is of a centralized nature. Other activities can be decentralized but there is only one department for financial management.

1.1.1 Finance and relation with other disciplines

Q3. Elucidate the relationship between financial management and other disciplines of management.

Ans : **(May-19, Imp.)**

1. FM and Economics

Economic concept like micro and macro economics re directly applied with the FM approaches. Investment decisions, micro and macro environmental factors are closely associated with the functions of financial manager. FM also uses the economic equations like money value discount factor, economic order quantity etc. financial economics is one of the emerging area, which provides immense opportunities to finance and economical areas.

2. FM and Accounting

Accounting records includes the financial information of the business concern. Hence, we can easily understand the relationship between the FM and accounting. In the olden periods both FM and accounting are treated as a same discipline and then it has been merged as management accounting because this part is very much helpful to finance manager to take decisions. But nowadays FM and Accounting discipline are separate and interrelated.

3. FM and Production Management

Production management is the operational part of the business concern, which helps to multiple the money into profit. Profit of the concern depends upon the production performance. It needs finance because production department requires raw material, machinery, wages, operating expenses etc. these expenditures are decided and estimated by the financial department and the finance manager allocates the appropriate finance to production.

4. FM and Human Resource

FM is also related with Human Resource department, which provides manpower to all

the functional areas of the management. Financial manager should carefully evaluate the requirement of manpower to each department and allocate the finance to the Human Resource department as wages, salary, remuneration, commission, bonus, pension and other monetary benefits to the Human Resource department. Hence, FM is directly related with Human Resource management.

5. FM and Marketing

Produced goods are sold in the market with innovative and modern approaches. For this, the marketing department needs finance to meet their requirements. The financial manager or finance department is responsible to allocate the adequate finance to the marketing department. Hence, marketing and FM are interrelated and depends on each other.

6. FM and Mathematics

Modern approaches of the FM applied large number of mathematical and statistical tools and techniques. They are also Called as econometrics. Economic order quantity, discount factor, time value of money, cost of capital, capital structure theories, dividend theories, ratio analysis and working capital analysis are used as mathematical and statistical tools and techniques in the field of FM.

1.2 SCOPE OF FINANCIAL MANAGEMENT

Q4. Explain the scope of financial management.

Ans : **(Imp.)**

1) Estimating Financial Requirements

The finance department must estimate the capital requirements of the firm accurately for long term and short term needs. In estimating the capital requirements of the business, the finance department must take help of the budgets of various activities of the business e.g. sales budget, production budget, expenses budget etc. prepared by the concerned departments. In the initial stage, the estimate is done by promoters but in a growing concern, it is done by the finance department. Unless the financial forecast is correct, business is likely to run into difficulties due to excess or shortage of funds. Correct estimates ensure the availability of funds as and when they are needed.

2) Deciding Capital Structure

By capital structure we mean the kind and proportion of different securities for raising the required funds. Once the total requirement of funds is determined, a decision regarding the type of securities to be issued and the relative proportion between them is to be taken. The finance department must determine the proper mix of debt and equity. It should also decide the ratio between long term and short term debts.

3) Selecting a Source of Finance

A company can raise funds from different sources e.g. shareholders, debenture holders, banks, financial institutions, public deposits etc. Before raising the funds, it has to decide the source from which the funds are to be raised. The choice of the source of finance should be made very carefully by taking a number of factors into account such as cost of raising funds, conditions attached, charge on assets, burden of fixed charges, dilution of ownership and control etc.

4) Selecting a Pattern of Investment

When funds have been procured than a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. The decision-making techniques such as capital budgeting, opportunity cost analysis may be applied in making decision about capital budgeting. While spending on various assets, the principles of safety profitability and liquidity should not be ignored.

5) Proper Cash Management

It is the prime responsibility of the finance manager to see that an adequate supply of cash is available at proper time for the

smooth running of the business. Cash is needed to purchase raw materials, pay off creditors, to pay to workers and to meet the day to day expenses of the business. Availability of cash is necessary to maintain liquidity and credit worthiness of the business.

Excess cash must be avoided as it costs money. It there is any cash in excess, it should be invested in near cash assets such as investments etc. which may be converted into cash within no time.

6) Proper Uses of Surpluses

One of the prime function of the finance department is to allocate the surplus. After paying all taxes, the available surplus of the business can be allocated for three purposes:

i) For paying dividend to the shareholders as a return on their investment,

ii) For distributing bonus to workmen and company's contribution to other profit sharing plans, and

iii) For ploughing back of profits for the expansion of business.

7) Implementing Financial Controls

The financial manager is under an obligation to check the financial performance of the funds invested in the business. There are a number of techniques to evaluate the performance viz. Return on Investment (ROI), budgetary control, cost control, internal audit, ratio analysis and break-even point analysis. The financial manager must lay emphasis on financial planning as well.

Q5. Explain the importance of financial management.

Ans :

Some of the importance of the financial management is as follows:

1. Financial Planning and Control

Finance is a base for all the business activities. Business activities should be not only harmonized but also planning determination and implementation offer analysis of finance. All activities revolve around the finance. So finance planning and control are important function.

2) Essence of Managerial Decision

Financial management provides a sound base to all managerial decisions. Financial management is the focal point in the process of decision making. Production, sales, employees, research & development decisions are based on financial management.

3) Improve Profitability

Profitability of the concern purely depends on the effectiveness and proper utilization of funds by the business concern. Financial management helps to improve the profitability position of the concern with the help of strong financial control devices such as budgetary control, ratio analysis and cost volume profit analysis.

4) Financial Management is a Scientific & Analytical Analysis

In the process of decision making and financial analysis modem mathematical techniques are used. It requires not only a feeling for the situation & an analytical skill, but also a through knowledge of the techniques and tools of financial analysis & the knowledge to apply them & interpret the results.

5) Continuous Administration Function

In older times financial management was used periodically and its importance was limited to the procurement of funds but in modem times finance is a continuous administrative function. Its relation is with the procurement of capital, sources of funds, capital budgeting decisions etc.

6) Centralized Nature

All business activities are centrally administered & control. All financial decisions in business are taken at a central point. Functional areas such as marketing & production are decentralized in the modem industrial concern, but financial co-ordination and control are achieved through centralization.

Q6. Explain the evolution of financial management.

Ans :

Financial management came into existence as a separate field of study from finance function in the early years of 20th century. The evolution of financial management can be separated into three stages,

(i) Traditional Stage

The traditional stage of financial management continued till four decades. Some of the important characteristics of this stage are,

- In this stage, financial management mainly focuses on specific events like formation, expansion, merger and liquidation of the firm.
- The techniques and methods used in financial management are illustrated in an organized manner.
- The essence of financial management was based on principles and policies used in capital market, equipments of financing and lawful matters of financial events.
- Financial management was observed mainly from the perspective of investment bankers, lenders and others.

(ii) Transitional Stage

The transitional stage started in the beginning years of 1940's and continued till the beginning of 1950's. The features of this stage was similar to the traditional stage. But this stage mainly focused on the routine problems of financial managers in the field of funds analysis, planning and control. In this stage, the essence of financial management was transferred to working capital management.

(iii) Modern Stage

The modern stage started in the middle of 1950s and observed tremendous changes in the development of financial management with the ideas from economic theory and implementation of quantitative methods of analysis. Some unique characteristics of modem stage are,

- The main focus of financial management was on proper utilization of funds so that wealth of current shareholders can be maximized.
- The techniques and methods used in modem stage of financial management were analytical and quantitative.

Since, the starting of modem stage of financial management many important developments took place. Some of them are in the fields of capital budgeting, valuation models, dividend policy, option pricing theory, behavioural finance etc.

1.3 OBJECTIVES OF FINANCIAL MANAGEMENT

Q7. Discuss the objectives of financial management.

(OR)

"Objectives of financial management have changed substantially in recent decades." Explain

(OR)

Explain in detail the goals of finance function.

Ans : **(July-21, May-19, June-18, Imp.)**

Financial management is related with acquiring and utilization of funds. The main objective of financial management is to utilize funds so that the value of firm is increased. There are various strategies available in market for using business funds. Financial management provides a structure which helps in selecting an appropriate course of action and deciding a feasible strategy.

The main objectives or goal of every business unit is to enhance the owner's economic welfare and this can be achieved through,

1. Profit maximization and
2. Wealth maximization.

1. Profit Maximization

Each and every transaction that takes place mainly depends on earning profit. It is necessary for every business to earn profits so that it can meet its expanses and invest them for its expansion. Profits help in different

ways like help in evaluating the capability of the firm, help in overcoming uncertain risks etc. Hence profit maximization is regarded as the main aim of every business.

Some points which support maximization of profit as the objective of business are

(a) It is clear that profit maximization will be the objective of those organizations which focus on earning profit.

(b) Profitability acts as a measuring tool for efficiency and prosperity of a business firm. So profit maximization is acceptable on the basis of rationality.

(c) Growth of a business is possible only through profits. Hence every business firm must maximize its profits in order to develop and grow its business.

(d) Business conditions never remain constant. They frequently face the situations like recession, depression, severe competition etc. In order to survive from the changing conditions, business firm must maintain some part of profits.

(e) Profitability is necessary for satisfying social goals and socio-economic welfare which can be maximized by profit maximization.

2. Wealth Maximization

Wealth maximization is suitable for organizations as it is the only substitute for stockholder's utility. When stockholder's wealth is maximized, it leads to maximization of shareholder's utility. Hence stockholder's current wealth in a firm can be obtained by multiplying the number of shares owned with the current stock price per share.

In order to maximize wealth, current present value of any specific transaction must be maximized. In wealth maximization, all financial decisions must be based on cost-benefit analysis.

It is useful to adopt wealth maximization as it helps to cater the interest of people like employees, suppliers, management and society. It not only aims at increasing the value of shares but also gives assurance of security to lenders. It is necessary to allocate productive resources so that the wealth of the organization can be increased.

Wealth maximization is supported on the basis of following objectives,

(i) It plans for development and long-term continuity of the firm.

(ii) The objectives of wealth maximization constantly focuses on shareholders economic welfare.

(iii) Wealth maximization encourages a constant and uniform payment of dividend to the shareholders.

(iv) The risk and time value of money are taken into consideration by wealth maximization.

(v) In order to increase the value of share many financial decisions are taken.

(vi) Wealth maximization also takes into account the future cash flows, dividends and earnings per share.

(vii) Wealth maximization is considered by shareholders.

(viii) Profit maximization empowers wealth maximization to certain extent.

Q8. Explain the advantages and limitations of profit maximization.

Ans : **(Imp.)**

Advantages

1) Profit is the Test of Economic Efficiency

It is a measuring rod by which the economic performance of the company can be judged.

2) Efficient Allocation of Fund

Profit leads to efficient allocation of resources as resources tend to be directed to uses which in terms of profitability are the most desirable.

3) Social Welfare

It ensures maximum social welfare, i.e., maximum dividend to shareholders, timely

payments to creditors, more and more wages and other benefits to employees, better quality at cheaper rate to consumers, more employment to society, and maximization of capital to the owners.

4) Internal Resources for Expansion

Retained profits can be used for expansion and modernization. Thus, lot of botheration of borrowings can be avoided.

5) Reduction in Risk and Uncertainty

Once huge profits are availed the company develops the risk bearing capacity. The gross present value of a course of action is found out by discounting (or) capital sating its benefits at a rate which reflects their timing and uncertainty. A financial action which has positive net present value creates wealth and therefore, is desirable. The negative present value should be rejected.

6) More Competitive

More and more Profit enhances the competitive spirit thus, under such conditions firms having more and more profits can survive. Therefore, Profit maximization should be the aim of every business.

7) Desire for Controls

More and more profits do not add new shareholders as internal resources are used for expansion and modernization. Under such situation control of the company remains in the same hands.

8) Basis of Decision-Making

In all businesses profit earning capacity is the sound basis of decision-making.

Limitations

The profit maximization criterion is criticized on the following grounds:

1) Quality of Benefits

Profit maximization approach ignores the quality aspects of benefits associated with a financial course of action. The quality means the degree of certainty with which benefits are expected.

2) Ambiguity-Vague

The term 'profit' is vague and has different interpretations. It means different things to different people. It can be pre-tax or post-tax profit. It is not clear whether it is short-term profit or long-term profit. Does it mean operating profit or profit available for shareholders? The other equivalent term, often used, is 'Return'. Return can be on total capital employed (or) total assets or shareholders equity and so on.

3) Timing and Value of Money-Ignored

The concept of Profit maximization does not help in making a choice between projects, giving different benefits, spread over a period of time. It ignores the difference in time in respect of benefits arising from the similar amount of investment. The fact that a rupee received today is more valuable than the rupee received later is ignored in this concept.

4) Change in Organization Structure

Principle of Profit maximization was, earlier, accepted when the structure of the business was sole proprietorship. In this type of structure, sole proprietor managed the business, individually, and was the recipient of total profits. As total profit belonged to him, his wealth maximized. This was the picture in 19th century, when the business was, totally, self-managed.

5) Social Welfare may be Ignored

Due to Profit maximization objective, business may produce goods and services, which may not be necessary and beneficial to the society. So, it is, indeed, doubtful how far the Profit maximization objective serves or promotes social welfare, let alone optimizes social welfare.

6) Ignores financing and Dividend Aspects

The Profit maximization concept concentrates on profitability aspect alone and impact of financing and dividend decisions on the market value of shares are, totally, ignored.

Q9. Explain the advantages and limitations of wealth maximization.

Ans :

Advantages

1) Wealth maximization is superior to the profit maximization because the main aim of the business concern under this concept is to improve the value or wealth of the shareholders.

2) Wealth maximization considers the comparison of the value to cost associated with the business concern. Total value detected from the total cost incurred for the business operation, it provides extract value of the business concern.

3) Wealth maximization considers both time and risk of the business concern.

4) Wealth maximization provides efficient allocation of resources.

5) It ensures the economic interest of the society.

Limitations

The wealth maximization criterion is criticized on the following grounds:

1) The objective of wealth maximization is not, necessarily, socially desirable.

2) There is some controversy whether the objective of maximization of wealth is of the firm or stockholders. If wealth of firm were maximized, it would be benefiting the interests of debenture holders and preference shareholders too.

3) In corporate sector, ownership and management are separate unlike in a sole proprietorship. Management acts as the agents of real owners i.e. shareholders. However, there is always a possibility of conflict of interest between the shareholders' interests and managerial interests.

The managers may act to maximize their managerial utility but not the wealth of stockholders of the firm. A particular decision may be taken to exhibit their managerial utility and that decision may not be in the exclusive interests of the firm. Many a time, individuals place their personal preferences and selfish interests, ahead of the institutional interests.

1.3.1 Profit Maximization Vs. Wealth Maximization

Q10. Distinguish between Profit Maximization and Wealth Maximization.

Ans : **(July-21, Imp.)**

S.No.	Basis of Difference	Profit Maximization	Wealth Maximization
1)	**Definition**	The concept of profit maximization implies that a firm either produces maximum output or uses minimum inputs for producing a given output. Thus, it relates to optimizing the input-output relationship of resources to minimize the wasteful costs.	The concept of shareholders' wealth maximization means maximizing the wealth in the hands of shareholders by way of dividends and value - creation by Net Present Value (NPV) of a course of action such that future inflows value is maximized and determined precisely.
2)	**Purpose**	The main purpose of profit maximization is to maximize the profitability derived out of economic activity of the business.	The main purpose of this concept is to enhance the value of the firm and the market value of the shares of the shareholders.

3)	**Formulae**	Profit maximization concept is based on the determination of maximization of profits. In a simple way; Profit = Total Revenue Receipts - Total Costs	The stockholders' current status of wealth in the firm is based on the share price and the number of shares held. It can be depicted as : Wealth = No. of Shares Owned × Current Stock Price Per Share.
4)	**Rationale**	The rationale behind this concept is the need for maximum profits and accumulated profits for growth in future and shelter against contingencies like economic recession, natural calamity, unforeseen losses in future, severe competition, etc.	The rationale behind this concept is maximization of value of the firm and enhancing shareholders wealth as a gratitude for their commitment of funds and continued investor relationship with the company.
5)	**Time Span**	This concept relates to relatively shorter time period, say a financial year. Thus, a short - term myopic vision.	This concept relates to long-term value building and augmenting individual shareholder's utility. Thus, a long -term vision.
6)	**Time Value of Money (i.e., the Recognition that Value in Money Decreases Over time)**	This concept does not give due consideration to the issues of time value of money. It determines profits for the financial year and ignores discounting factor of earnings.	This concept gives due consideration to the time value of money and its implications. It calculates the future earning, at their exact value by applying. Net Present Value (NPV) approach and discounting factor, etc.
7)	**Immediate beneficiaries Management versus Owners**	The immediate benefit of this concept is derived by the shareholders. especially when there is separation of management from ownership.	The immediate benefits are availed by shareholders and later by the organization as a whole. This can potentially cause conflicts when there is separation of management from ownership.
8)	**Limitations and Constraints**	**The profit maximization concept has the following constraints:** i) It igonores the time value of money concept ii) Short - term vision based. iii) Exploitative tendency towards resources, employees, customers if this concept is pursued beyond viable limits. iv) Gives lower priority to shareholders' interest.	**The wealth maximization concept has the following constraints :** i) It suffers from drastic changes and fluctuations in in financial markets. ii) Tendency to overlook short-term economic objectives of the business. iii) Very long span of time, so increased efforts on value building. iv) Conflict arises when there is separation of management from ownership.

1.3.2 Welfare / Value Maximization

Q11. Explain briefly about Welfare Maximization.

Ans :

The goal of firm is to maximize the present wealth of the owners, i.e., equity shareholders in a company. A company's equity shares are actively traded in the stock markets, the wealth of the equity shareholders is represented in the market value of the equity shares. The firm's cashflow and its impact on value maximization is shown in figure :

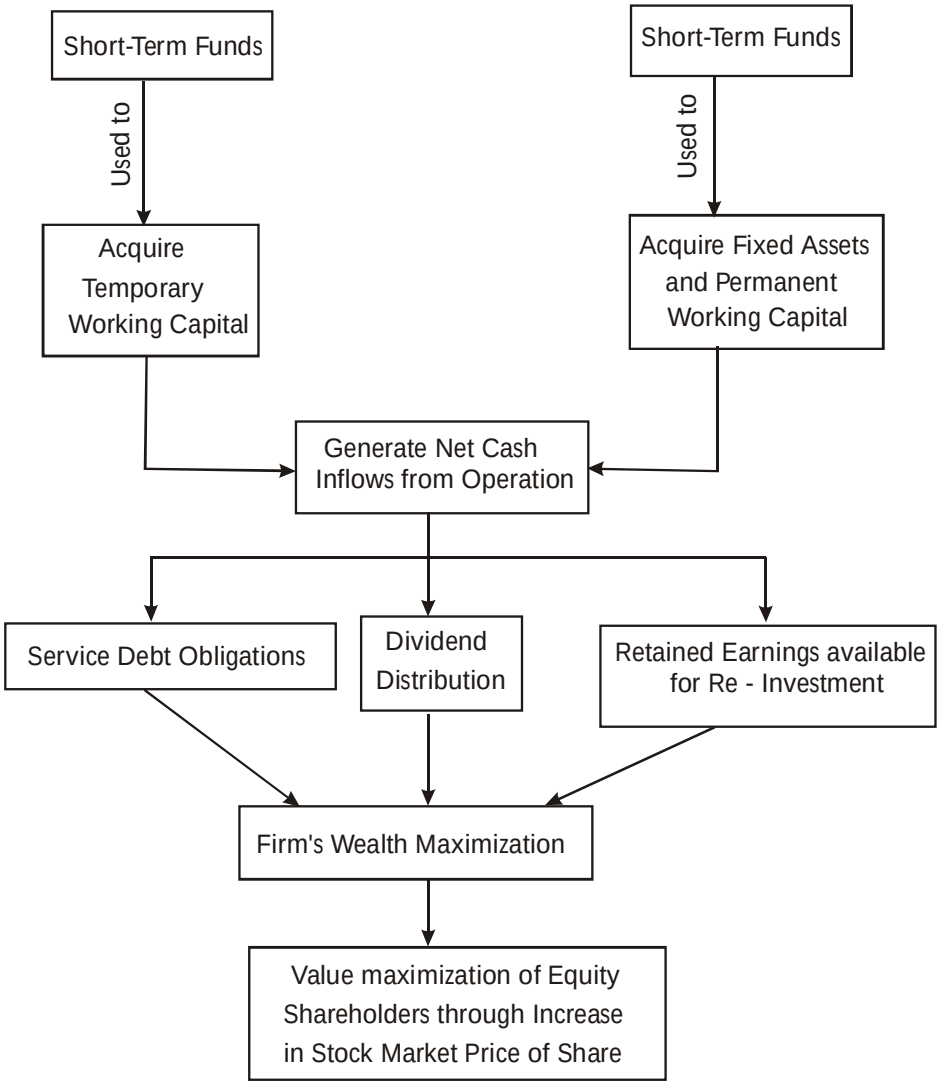


Fig: Firm's Cashflow and Value Maximization

The prime goal for company form of organization is to maximize the market value of equity shares of the company. The market price of a share serves as an index of the performance of the company. It takes into account present and prospective future earnings per share, risk associated with the business, dividend, and retention policies of the firm, level of gearing, etc. The shareholder's wealth is maximized only when the market value of the share is maximized. In the present context, the term 'wealth maximization' of financial management is re-defined as 'value maximization'. The objective of maximizing economic welfare of shareholders is achieved through maximization of their wealth. The maximization of utility value of shareholders can be achieved by maximizing their economic welfare. In company form of business, the wealth created is reflected in the market value of its shares. Therefore, the financial decisions will cause to create wealth and it is indicated or reflected in market price of company's shares. Hence the prime objective of financial management is to maximize the value of the firm.

1.3.3 Profit Maximization Vs. Wealth Maximization Vs. Value Maximization

Q12. Distinguish between Profit Maximization, Wealth Maximization and Welfare Maximization.

Ans : **(Imp.)**

Profit Maximization	Wealth Maximization	Welfare Maximization
1. Profits are earned and maximized so that firm can overcome future risks which are uncertain.	1. Wealth is maximized, so that wealth of shareholders can be maximized	1. Welfare maximization is done with the help of microeconomic techniques to examine allocative efficiency and income distribution.
2. Profit maximization is a yard stick for calculating efficiency and economic prosperity of the concern.	2. In wealth maximization, stockholders current wealth is evaluated in order to maximizcce the value of shares in the market.	2. In welfare maximization, social welfare is evaluated by calculating economic activities of individuals in the society.
3. Profit is measured in terms of efficiency of the firm.	3. Wealth is measured in terms of market price of shares.	3. Welfare can be measured in two ways, either by efficiency (or) in until (or) dollars.
4. Profit maximization involves problem of uncertainty because profits are uncertain.	4. Wealth maximization involves problems related to maximizing shareholder's wealth or wealth of the firm.	4. Welfare maximization involves problem of combining the utilities of different people.

1.4 Approaches to Financial Management

1.4.1 Traditional and Modern Approach of FM

Q13. Elucidate the various approaches to financial management.

(OR)

State the various approaches to finance function.

Ans : **(Imp.)**

A number of approaches are associated with finance function but for the sake of convenience, various approaches are divided into two broad categories:

1. The Traditional Approach
2. The Modern Approach

1. The Traditional Approach

The traditional approach to the finance function relates to the initial stages of its evolution during 1920s and 1930s when the term 'corporation finance' was used to describe what is known in the academic world today as the 'financial management'. According to this approach, the scope, of finance function was confined to only procurement of funds needed by a business on most suitable terms.

The utilization of funds was considered beyond the purview of finance function. It was felt that decisions regarding the application of funds are taken somewhere else in the organization. However, institutions and instruments for raising funds were considered to be a part of finance function.

The scope of the finance function, thus, revolved around the study of rapidly growing capital market institutions, instruments and practices involved in raising of external funds.

Limitations

(i) It is outsider-looking in approach that completely ignores internal decision making as to the proper utilization of funds.

(ii) The focus of traditional approach was on procurement of long-term funds. Thus, it ignored the important issue of working capital finance and management.

(iii) The issue of allocation of funds, which is so important today, is completely ignored.

(iv) It does not lay focus on day to day financial problems of an organization.

2. The Modern Approach

The modern approach views finance function in broader sense. It includes both rising of funds as well as their effective utilization under the purview of finance. The finance function does not stop only by finding out sources of raising enough funds their proper utilization is also to be considered. The cost of raising funds and the returns from their use should be compared.

The funds raised should be able to give more returns than the costs involved in procuring them. The utilization of funds requires decision making. Finance has to be considered as an integral part of overall management. So finance functions, according to this approach, covers financial planning, rising of funds, allocation of funds, financial control etc.

Q14. What are the differences between traditional approach and modern approach.

Ans :

Traditional Approach	Modern Approach
i) Narrowly defined concept of FM	i) Comparatively a wide concept of FM
ii) Only concerned with raising long term funds Era before 1950	ii) Concerns both raising as well as use of funds Era after 1950
iii) Applicable only to large joint stock companies.	iii) Applicable to all the business entities
iv) Only long term decisions are taken	iv) Long as well as short term decisions are
v) It is a descriptive approach	v) It is an analytical approach

1.5 Functions of Finance

1.5.1 Investment Decision, Financing Decision, Current Assets Management Decision and Dividend Decision

Q15. Who is a finance manager.

Ans :

A financial manager is a person who is responsible, in a significant way, to carry-out the finance functions. It should be noted that, in a modern enterprise, the financial manager occupies a key position. He or she is one of the members of the top management team, and his or her role, day-by-day is becoming more pervasive, intensive and significant in solving the complex funds management problems.

Q16. Explain the various decisions of financial manager.

Ans : **(May-19, Imp.)**

The major decisions of financial manager are as follows:

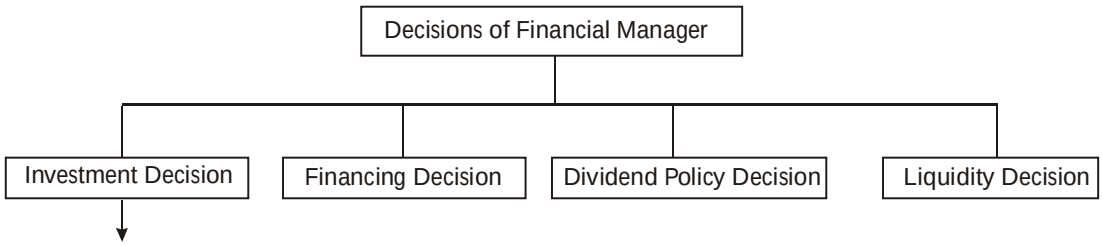
1. Investment Decision

The investment decision relates to the selection of assets in which funds will be invested by a firm. The assets which can be acquired fall into two broad groups:

i) Long-term assets which will yield a return over a period of time in future,

ii) Short-term (or) current assets defined as those assets which in the normal course of business are convertible in to cash usually within a year.

Accordingly, the asset selection decision of a firm is of two types. The first of these involving the first category of assets is popularly known in the financial literature as capital budgeting. The aspect of financial decision-making with reference to current assets (or) short-term assets is popularly designated as working capital management.



i) Capital Budgeting Decisions

ii) Working Capital Decisions

The mutual ratio between fixed and current assets affects the quantum of risk of firm. This risk affects the cost of different sources of finance. Thus, investment decisions are mainly of two types:

i) Capital Budgeting Decisions: Capital budgeting decisions are quite significant for firms because they are concerned with such assets or projects which result in profits to the business over a long period. Under these decisions, financial manager has to decide as to which of the different available alternatives the best to invest in. For this purpose, expected profit accruing from that asset is evaluated by using different techniques.

ii) Working Capital Decisions: Efficient management of working capital is also quite important for the business because it affects profitability and liquidity of the firm. For the efficient management of working capital, financial manager must maintain adequate balance in liquidity and profitability. Profitability and liquidity have inverse relationship.

If business does not have adequate working capital, risk will increase due to non-payment of short-time liabilities in time and if current assets are more than required, it will reduce profitability and liquidity will increase. This is called working capital management. For efficient and effective management of working capital, inventory, receivables and cash are required to be managed properly

Financial manager also takes special investment decisions. These are called non-recurring decisions. These decisions facilitate mergers, re-organizations and liquidation.

2. Financing Decision

The second major decision involved in financial management is the financing decision. The investment decision is broadly concerned with the asset-mix or the composition of the assets of a firm. The concern of the financing decision is with the financing-mix (or) capital structure (or) leverage. The term capital structure refers to the proportion of debt (fixed-interest sources of financing) and equity capital (variable-dividend securities/sources of funds). The financing decision of a firm relates to the choice of the proportion of these sources to finance the investment requirements.

3. Dividend Policy Decision

The third major decision of financial management is the decision relating to the dividend policy. The dividend decision relating to the dividend policy. The dividend decision should be analyzed in relation to the financing decision of a firm. Two alternatives are available in dealing with the profits of a firm they can be distributed to the shareholders in the firm of dividends (or) they can be retained in the business which course should be followed-dividend or retention.

4. Liquidity Decision / Current Asset Management Decisions

Liquidity decision is concerned with the management of current assets. Basically, this is Working Capital Management is concerned with the management of current assets. It is concerned with short-term survival. Short term-survival is a prerequisite for long-term survival.

When more funds are tied up in current assets, the firm would enjoy greater liquidity. In consequence, the firm would not experience any difficulty in making payment of debts, as and when they fall due. With excess liquidity, there would be no default in payments. So, there would be no threat of insolvency for failure of payments. However, funds have economic cost. Idle current assets do not earn anything. Higher liquidity is at the cost of profitability. Profitability would suffer with more idle funds. Investment in current assets affects the profitability, liquidity and risk. A proper balance must be maintained between liquidity and profitability of the firm. This is the key area where finance manager has to play significant role. The strategy is in ensuring a trade-off between liquidity and profitability. This is, indeed, a balancing act and continuous process. It is a continuous process as the conditions and requirements of business change, time to time. In accordance with the requirements of the firm, the liquidity has to vary and in consequence, the profitability changes. This is the major dimension of liquidity decision-working capital management. Working capital management is day to day problem to the finance manager. His skills of financial management are put to test, daily.

Q17. Explain the role of finance manager in financial management.

Ans :

Role of finance manager in financial management are as follows:

1. Raising Funds of Company Finance

The role of finance manager for raising funds of company. Finance manager checks different sources of company. He did not get fund from all sources. First, he check his need in short term and in long term and after this he select best source of fund. He has also power to change the capital structure of company for giving more benefit of company.

2. Taking Maximum Benefits from Leverage

The role of finance manager for taking maximum benefits from leverage. Finance manager uses both operating and financial leverage and try to use it for taking maximum benefit from leverage.

3. International Financial Decision

The role of finance manager for international financial decision. Finance manager finds opportunities in international financial decision. In these opportunities, he does the contracts of credit default swap, interest rate swap and currency swap.

4. Investment Decisions

The role of finance manager in investment decisions. Finance manager checks the net present value of each investment project before actual investment in it. Net present value of project means what net profit at discount rate, will company gets if company invests him money in that project. High NPV project will be accepted. So, due to high responsibility, role of finance manager in this regard is very important.

5. Risk Management

The role of finance manager in risk management. Happening of risks means facing different losses. Finance manager is very serious on risk and its management. He plays important role to find new and new ways to control risk of company. Like other parts of management, he estimates all his risks, he organize the employees who are responsible to control risk. He also calculates risk adjusted NPV. He meets all risk controlling organizations like insurance companies, rating agencies at pervasive level. He is able to convert company's misfortunes into fortunes. By good estimations of averse situations, he tries his best to safeguard the money of company.

1.5 ORGANIZATION OF FINANCE FUNCTION

Q18. Explain briefly about Organization of finance function.

(OR)

"Finance function is closely related to other functions" - Discuss.

Ans : **(June-18, Imp.)**

Organization Chart of Finance Function

- The organization chart of the financial management function differs from firm to firm depending on the size of the firm, type of financing operations, nature of its business, ability of financial officers, financial philosophy, etc.
- The chief finance executive (designation differs from firm to firm) works directly under the Managing Director (or) President of the company.
- Besides covering the routine aspects of finance and accounting, he keeps the Board of Directors aware of all the phases of business activity, including social, economic and political developments which affect the business behaviour.
- He also provides information regarding the financial status of the company by reviewing the same from time to time. In most companies, the Vice President (Finance) has two subordinate officers, i.e., the Controller and the Treasurer.
- The controller is concerned with the accounting and control functions, e.g., providing information for formulating the accounting and financial policies, preparation of financial accounts and reports, direction of internal auditing, budgeting, taxes, inventory control economic appraisal, etc.

- The Treasurer is mainly concerned with the financing activities of the firm, e.g., forecasting the financial needs, obtaining finance, maintaining relationship with banks, financial institutions and investors, administering the flow of cash, managing credit, floating securities, protecting funds and securities, insurance, investments etc. Fig. shows the organization chart of the financial management function in a large organization.

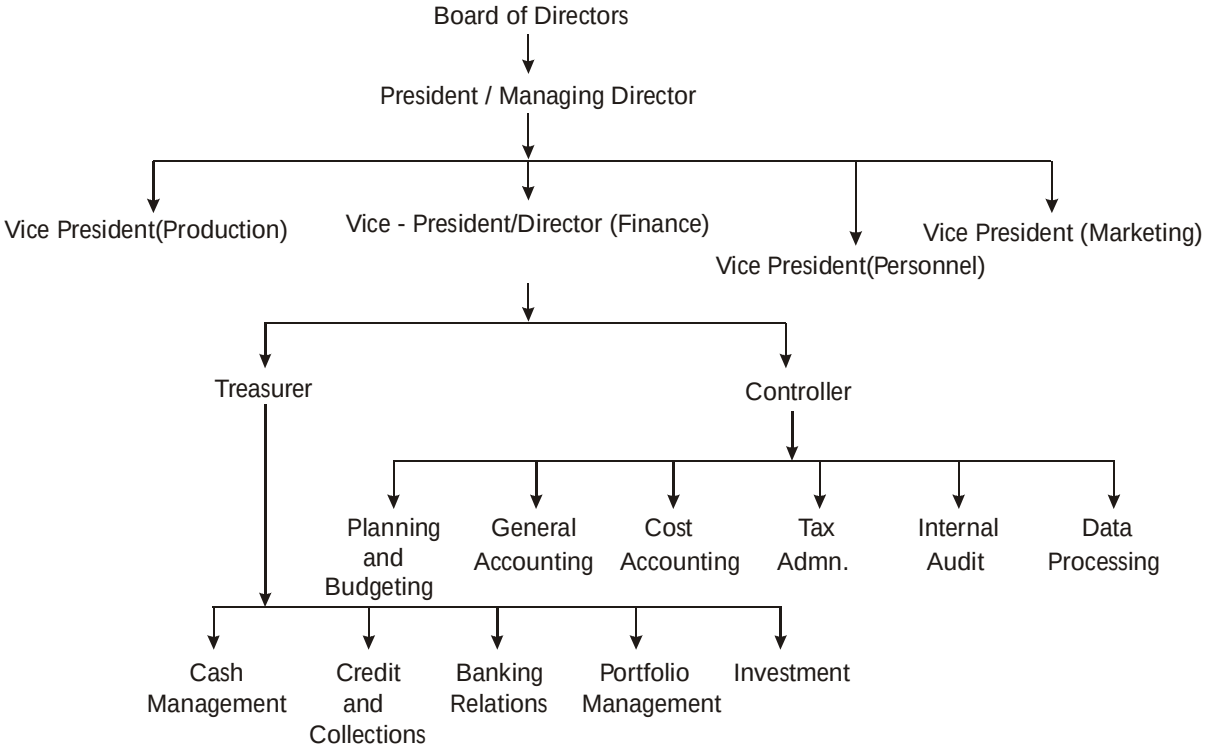


Fig.: Organization chart of Finance Function

Q19. Define Agency Problem.

Ans :

In proprietorships, partnerships, and cooperative societies, owners are actively involved in management. But in companies, particularly large public limited companies, owners typically are not active managers. Instead, they entrust this responsibility to professional managers who may have little or no equity stake in the firm.

According to the theory of the relationship between principals (owners) and agents (managers) principal-agent theory - owners hires managers to run the firm on their behalf.

The aim of company, which was earlier noted to be maximization of the market value of the company, often is not compatible with the interests of managers, as they prefer to maximize their own personal interests, if possible, even at the expense of owners. This discrepancy of interests leads to agency conflicts, which are especially severe in public companies. The separation of ownership and control causes serious conflicts of interests, among which the conflict between shareholders and managers, and shareholders (represented by managers) and creditors are the most important.

Q20. What do you mean by Agency Relationships and Agency Cost. Explain different types of Agency Relationships.

Ans :

1. Agency Relationships

The relationship between stockholders and management is called an agency relationship. Such a relationship exists whenever someone (the principal) hires another (the agent) to represent his or her interests.

For example, suppose a person hire someone to sell a car and agree to pay that person a flat fee when sale takes place. The agent's incentive in this case is to make the sale, not necessarily to get the best price. If person offer a commission of, say ten per cent of the sales price instead of a flat fee, then this problem might not exist. This example illustrates that the way in which an agent is compensated is one factor that affects agency problems.

2. Agency Cost

The term agency costs refer to the costs of the conflict of interest between stockholders and management. These costs can be indirect or direct.

(i) Indirect Agency Cost: An indirect agency cost is a lost opportunity, such as the one we have just described.

(ii) Direct Agency Costs: Direct agency costs come in two forms:

a) The first type is a corporate expenditure that benefits manage-ment but costs the stockholders. Perhaps the purchase of a luxurious and unneeded corporate jet would fall under this heading.

b) The second type of direct agency cost is an expense that arises from the need to monitor management actions. For example, paying outside auditors to assess the accuracy of financial statement information.

Types of Agency Relationship

The two primary agency relationship which exists in a business concern are,

(i) Shareholders vs Bondholders

(ii) Managers vs Shareholders.

(i) Shareholders vs Bondholders (Agency Conflict -I)

Shareholders are the real owners of the concern and pays fixed and agreed amount of interest to bondholders till the duration of bond is finished. But bondholders have a preceding claim over the assets of the company. Since, equity investors are the owners of company, they possess a residual claim on the cash flows of the company. Bondholders are the only sufferers, if decisions of the company are not appropriate.

When a company invests in a project by taking amount from bondholders and if the project is successful, a fixed amount is paid to bondholders and rest of the profits are for shareholders. Suppose, if project fails, then sufferers will be the bondholders as their money has been invested.

(ii) Managers vs Shareholders (Agency Conflict - II)

Profit generated from investments in projects can be utilized for reinvestment or provided back to shareholders as dividends. If dividends are increased, then it may lead to decrease in the resources which are under the manager's control and also restricts its growth. As managers are evaluated on the basis of growth they may select unproductive projects which cannot generate appropriate returns and leaves the shareholders shocked. This is the main cause of conflicts between managers and shareholders.

Short Question and Answers

1. Define financial management.

Ans :

Introduction

Finance is the life blood of business. Without finance, the heart and brain of business cannot function implying thereby its natural death. Right from conceiving the idea of birth of a business to its liquidation, finance is required. It is a prerequisite for obtaining physical resources, which are needed to perform productive activities and carrying business operations such as sales, pay compensations, reserve for contingencies (unascertained liabilities) and so on. So, finance is the pivot around which the whole business operations cluster.

Finance may be defined as the provision of money at the time when it is required. Finance refers to the management of flows of money through an organization. It concerns with the applications of skills in the manipulation, use and control of money. Different authorities have interpreted the term 'finance' differently.

Meaning

To understand the meaning of Financial Management, one must understand the meaning of both words 'financial' and 'management' separately. 'Financial' means procuring sources of money supply and allocation of these sources on the basis of forecasting monetary requirements of the business. The word 'Management' refers to planning, organization, co-ordination and control of human activities and physical resources for achieving the objectives of an enterprise.

Financial management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. In other words it is concerned with acquiring, financing and managing assets to accomplish the overall goal of a business enterprise (mainly to maximize the shareholder's wealth).

Definitions

i) **According to Solomon** "Financial management is concerned with the efficient use of an important economic resource, namely capital funds"

ii) **According to J.L.Massie** "Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient business operations"

iii) **According to Phillippatus** "Financial Management is concerned with managerial decisions that result in the acquisition and financing of long-term and short-term credits of the firm. As such it deals with the situations that require selection of specific assets (or combination of assets), the selection of specific liability (or combination of liabilities) as well as the problem of size and growth of an enterprise. The analysis of these decisions is based on the expected inflows and outflows of funds and their effects upon managerial objectives".

iv) **According to J.F. Bradley**, "Financial management is the area of business management devoted to the judicious use of capital & careful selection of sources of capital in order to enable a spending unit to move in the direction of reaching its goals".

v) **According to Howard & Upton,** "Financial management is the application of the planning & control functions of the finance functions".

vi) **According to Weston & Brigham,** "Financial management is an area of financial decision making harmonizing individual motives & enterprise goals".

2. Define Agency Problem.

Ans :

In proprietorships, partnerships, and cooperative societies, owners are actively involved in management. But in companies, particularly large

public limited companies, owners typically are not active managers. Instead, they entrust this responsibility to professional managers who may have little or no equity stake in the firm.

According to the theory of the relationship between principals (owners) and agents (managers) principal-agent theory - owners hires managers to run the firm on their behalf.

The aim of company, which was earlier noted to be maximization of the market value of the company, often is not compatible with the interests of managers, as they prefer to maximize their own personal interests, if possible, even at the expense of owners. This discrepancy of interests leads to agency conflicts, which are especially severe in public companies. The separation of ownership and control causes serious conflicts of interests, among which the conflict between shareholders and managers, and shareholders (represented by managers) and creditors are the most important.

3. Explain the scope of financial management.

Ans :

i) Estimating Financial Requirements

The finance department must estimate the capital requirements of the firm accurately for long term and short term needs. In estimating the capital requirements of the business, the finance department must take help of the budgets of various activities of the business e.g. sales budget, production budget, expenses budget etc. prepared by the concerned departments. In the initial stage, the estimate is done by promoters but in a growing concern, it is done by the finance department. Unless the financial forecast is correct, business is likely to run into difficulties due to excess or shortage of funds. Correct estimates ensure the availability of funds as and when they are needed.

ii) Deciding Capital Structure

By capital structure we mean the kind and proportion of different securities for raising the required funds. Once the total requirement of funds is determined, a decision regarding the type of securities to be issued and the relative proportion between them is to be taken. The finance department must determine the proper mix of debt and equity. It should also decide the ratio between long term and short term debts.

iii) Selecting a Source of Finance

A company can raise funds from different sources e.g. shareholders, debenture holders, banks, financial institutions, public deposits etc. Before raising the funds, it has to decide the source from which the funds are to be raised. The choice of the source of finance should be made very carefully by taking a number of factors into account such as cost of raising funds, conditions attached, charge on assets, burden of fixed charges, dilution of ownership and control etc.

iv) Selecting a Pattern of Investment

When funds have been procured than a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. The decision-making techniques such as capital budgeting, opportunity cost analysis may be applied in making decision about capital budgeting. While spending on various assets, the principles of safety profitability and liquidity should not be ignored.

4. Profit Maximization

Ans :

Each and every transaction that takes place mainly depends on earning profit. It is necessary for every business to earn profits so that it can meet its expanses and invest them for its expansion. Profits help in different ways like help in evaluating the capability of the firm, help in overcoming uncertain risks etc. Hence profit maximization is regarded as the main aim of every business.

Some points which support maximization of profit as the objective of business are

(a) It is clear that profit maximization will be the objective of those organizations which focus on earning profit.

(b) Profitability acts as a measuring tool for efficiency and prosperity of a business firm. So profit maximization is acceptable on the basis of rationality.

(c) Growth of a business is possible only through profits. Hence every business firm must maximize its profits in order to develop and grow its business.

(d) Business conditions never remain constant. They frequently face the situations like recession, depression, severe competition etc. In order to survive from the changing conditions, business firm must maintain some part of profits.

(e) Profitability is necessary for satisfying social goals and socio-economic welfare which can be maximized by profit maximization.

5. Wealth Maximization

Ans :

Wealth maximization is suitable for organizations as it is the only substitute for stockholder's utility. When stockholder's wealth is maximized, it leads to maximization of shareholder's utility. Hence stockholder's current wealth in a firm can be obtained by multiplying the number of shares owned with the current stock price per share.

In order to maximize wealth, current present value of any specific transaction must be maximized. In wealth maximization, all financial decisions must be based on cost-benefit analysis.

It is useful to adopt wealth maximization as it helps to cater the interest of people like employees, suppliers, management and society. It not only aims at increasing the value of shares but also gives assurance of security to lenders. It is necessary to allocate productive resources so that the wealth of the organization can be increased.

Wealth maximization is supported on the basis of following objectives,

(i) It plans for development and long-term continuity of the firm.

(ii) The objectives of wealth maximization constantly focuses on shareholders economic welfare.

(iii) Wealth maximization encourages a constant and uniform payment of dividend to the shareholders.

(iv) The risk and time value of money are taken into consideration by wealth maximization.

(v) In order to increase the value of share many financial decisions are taken.

(vi) Wealth maximization also takes into account the future cash flows, dividends and earnings per share.

(vii) Wealth maximization is considered by shareholders.

6. Limitations of wealth maximization.

Ans :

The wealth maximization criterion is criticized on the following grounds:

i) The objective of wealth maximization is not, necessarily, socially desirable.

ii) There is some controversy whether the objective of maximization of wealth is of the firm or stockholders. If wealth of firm were maximized, it would be benefiting the interests of debenture holders and preference shareholders too.

iii) In corporate sector, ownership and management are separate unlike in a sole proprietorship. Management acts as the agents of real owners i.e. shareholders. However, there is always a possibility of conflict of interest between the shareholders' interests and managerial interests.

The managers may act to maximize their managerial utility but not the wealth of stockholders of the firm. A particular decision may be taken to exhibit their managerial utility and that decision may not be in the exclusive interests of the firm. Many a time, individuals place their personal preferences and selfish interests, ahead of the institutional interests.

7. Investment Decision

Ans :

The investment decision relates to the selection of assets in which funds will be invested by a firm. The assets which can be acquired fall into two broad groups:

i) Long-term assets which will yield a return over a period of time in future,

ii) Short-term (or) current assets defined as those assets which in the normal course of business are convertible in to cash usually within a year.

Accordingly, the asset selection decision of a firm is of two types. The first of these involving the first category of assets is popularly known in the financial literature as capital budgeting. The aspect of financial decision-making with reference to current assets (or) short-term assets is popularly designated as working capital management.

8. Current Asset Management Decisions

Ans :

Liquidity decision is concerned with the management of current assets. Basically, this is Working Capital Management is concerned with the management of current assets. It is concerned with short-term survival. Short term-survival is a prerequisite for long-term survival.

When more funds are tied up in current assets, the firm would enjoy greater liquidity. In consequence, the firm would not experience any difficulty in making payment of debts, as and when they fall due. With excess liquidity, there would be no default in payments. So, there would be no threat of insolvency for failure of payments. However, funds have economic cost. Idle current assets do not earn anything. Higher liquidity is at the cost of profitability. Profitability would suffer with more idle funds. Investment in current assets affects the profitability, liquidity and risk. A proper balance must be maintained between liquidity and profitability of the firm. This is the key area where finance manager has to play significant role. The strategy is in ensuring a trade-off between liquidity and profitability. This is, indeed, a balancing act and continuous process. It is a continuous process as the conditions and requirements of business change, time to time. In accordance with the requirements of the firm, the liquidity has to vary and in consequence, the profitability changes. This is the major dimension of liquidity decision-working capital management. Working capital management is day to day problem to the finance manager. His skills of financial management are put to test, daily.

9. Agency Cost

Ans :

The term agency costs refer to the costs of the conflict of interest between stockholders and management. These costs can be indirect or direct.

(i) Indirect Agency Cost

An indirect agency cost is a lost opportunity, such as the one we have just described.

(ii) Direct Agency Costs

Direct agency costs come in two forms:

a) The first type is a corporate expenditure that benefits manage-ment but costs the stockholders. Perhaps the purchase of a luxu-rious and unneeded corpo-rate jet would fall under this heading.

b) The second type of direct agency cost is an expense that arises from the need to monitor management actions. For example, paying outside auditors to assess the accuracy of financial statement information.

10. Types of Agency Relationship

Ans :

The two primary agency relationship which exists in a business concern are,

(i) Shareholders vs Bondholders

(ii) Managers vs Shareholders.

(i) Shareholders vs Bondholders (Agency Conflict -I)

Shareholders are the real owners of the concern and pays fixed and agreed amount of interest to bondholders till the duration of bond is finished. But bondholders have a preceding claim over the assets of the company. Since, equity investors are the owners of company, they possess a residual claim on the cash flows of the company. Bondholders are the only sufferers, if decisions of the company are not appropriate.

When a company invests in a project by taking amount from bondholders and if the project is successful, a fixed amount is paid to bondholders and rest of the profits are for shareholders. Suppose, if project fails, then sufferers will be the bondholders as their money has been invested.

(ii) Managers vs Shareholders (Agency Conflict - II)

Profit generated from investments in projects can be utilized for reinvestment or provided back to shareholders as dividends. If dividends are increased, then it may lead to decrease in the resources which are under the manager's control and also restricts its growth. As managers are evaluated on the basis of growth they may select unproductive projects which cannot generate appropriate returns and leaves the shareholders shocked. This is the main cause of conflicts between managers and shareholders.

Choose the Correct Answers

1. The only feasible purpose of financial management is [a]
   (a) Wealth Maximization (b) Sales Maximization
   (c) Profit Maximization (d) Assets maximization
2. Financial management process deals with [b]
   (a) Investments (b) Financing decisions
   (c) Both a and b (d) None of the above
3. Agency cost consists of [d]
   (a) Binding (b) Monitoring
   (c) Opportunity and structure cost (d) All of the above
4. Finance Function comprises [d]
   (a) Safe custody of funds only
   (b) Expenditure of funds only
   (c) Procurement of finance only
   (d) Procurement & effective use of funds
5. The objective of wealth maximization takes into account [d]
   (a) Amount of returns expected
   (b) Timing of anticipated returns
   (c) Risk associated with uncertainty of returns
   (d) All of the above
6. Financial management mainly focuses on [d]
   (a) Efficient management of every business
   (b) Brand dimension
   (c) Arrangement of funds
   (d) All elements of acquiring and using means of financial resources for financial activities
7. Investment is the [c]
   (a) Net additions made to the nation's capital stocks
   (b) Person's commitment to buy a flat or house
   (c) Employment of funds on assets to earn returns
   (d) Employment of funds on goods and services that are used in production process

8. Financial Management is mainly concerned with [a]
   (a) All aspects of acquiring and utilizing financial resources for firms activities
   (b) Arrangement of funds
   (c) Efficient Management of every business
   (d) Profit maximization

9. The primary goal of the financial management is [c]
   (a) To maximize the return
   (b) To minimize the risk
   (c) To maximize the wealth of owners
   (d) To maximize profit

10. In his traditional role the finance manager is responsible for [b]
   (a) Proper utilisation of funds
   (b) Arrangement of financial resources
   (c) Acquiring capital assets of the organization
   (d) Efficient management of capital

Fill in the Blanks

1. Finance is the life blood of _____.
2. _____ means procuring sources of money supply and allocation of these sources on the basis of forecasting monetary requirements of the business.
3. _____ is concerned with the efficient use of an important economic resource, namely capital funds.
4. Finance is a base for all the _____ activities.
5. _____ of the concern purely depends on the effectiveness and proper utilization of funds by the business concern.
6. The transitional stage started in the beginning years of _____.
7. The modern stage started in the middle of _____.
8. Financial management is related with acquiring and _____ of funds.
9. _____ maximization is suitable for organizations as it is the only substitute for stockholder's utility.
10. _____ profits can be used for expansion and modernization.
11. Wealth maximization considers both _____ and _____ of the business concern.
12. _____ has to be considered as an integral part of overall management.
13. A _____ is a person who is responsible, in a significant way, to carry-out the finance functions.
14. The _____ relates to the selection of assets in which funds will be invested by a firm.
15. The second major decision involved in financial management is the _____.
16. The third major decision of financial management is the decision relating to the _____.
17. _____ decision is concerned with the management of current assets.
18. The relationship between stockholders and management is called an _____.
19. An _____ is a lost opportunity, such as the one we have just described.
20. _____ are the real owners of the concern and pays fixed and agreed amount of interest to bondholders till the duration of bond is finished.

ANSWERS

1. Business
2. Financial
3. Financial management
4. Business
5. Profitability
6. 1940's
7. 1950s
8. Utilization
9. Wealth
10. Retained
11. Time, risk
12. Finance
13. Financial manager
14. Investment decision
15. Financing decision
16. dividend policy
17. Liquidity
18. Agency relationship
19. Indirect agency cost
20. Shareholders

UNIT II

CONCEPT OF TIME VALUE OF MONEY

Concept of Time Value of Money, compounding, discounting, present value, future value, and annuity; capital budgeting – meaning, features; applications of Discounted Cash Flow (DCF) in capital budgeting, calculation of NPV and IRR

2.1 Concept of Time Value of Money

Q1. Define Time value of money. Explain the reasons for time value of money.

Ans : **(Imp.)**

The value of money changes with time money received today has more value than the money received in future. If an individual has to make a choice between receiving money today or receiving money after a certain period then he would options for receiving at the earlier point of time, as the current receipt of money is more valuable than the future receipt of money. The situation is generally termed as "Timer Preference for Money".

Reasons for Time Value of Money

Money has time value because of the following reasons:

1. Risk and Uncertainty

Future is always uncertain and risky. Outflow of cash is in our control as payments to parties are made by us. There is no certainty for future cash inflows. Cash inflow is dependent out on our creditor, bank, etc. As an individual or firm is not certain about future cash receipts, it prefers receiving cash now.

2. Preference for Consumption

Most people have subjective preference for present consumption over future consumption of goods and services either because of the urgency of their present wants or because of the risk of not being in a position to enjoy future consumption that may be caused by illness or death, or because of inflation. As money is the means by which individuals acquire most goods and services, they may prefer to have money now.

3. Investment Opportunities

An investor can profitably employ a rupee received today, to give him a higher value to be received tomorrow or after a certain period of time.

4. Inflationary Economy

In an inflationary economy, the money received today, has more purchasing power than the money to be received in future. In other words, a rupee today represents a greater real purchasing power than a rupee a year hence.

2.1.1 Techniques of Time Value of Money

Q2. Explain the various techniques of time value of money.

Ans : **(Imp.)**

The time value of money is adjusted with the help of two techniques. They are,

1. Compounding (or) Future Value Technique

The time preference for money helps an individual to receive money, at present without waiting for future. But, if a person is paid appropriately for his waiting time by providing guarantee to him that he will receive more money in future then he may wait.

The future value at the end of first period can be obtained with the help of the following formula,

$$FV_1 = V_0(1 + I)$$

Where,

FV_1 = Future value at the end of first period

V_0 = Value of money at present value or original sum of money

I = Interest rate.

The future value can be calculated with the following formula,

$$FV_n = V_0(1 + I)^n$$

Where,

FV_n = Amount at the end of the period

V_o = Principal amount at the beginning of the period

I = Rate of interest

n = Number of years

2. Discounting (or) Present Value Technique

The present values reveals the value of money at present for future sum of money. The present value which will be received on future date would be less as the opportunity of investing it at some interest rate would be lost. Hence, the present value which is received in future date is always less, due to which this technique is known as discounting technique.

The present value can be calculated with the help of following formula,

$$V_n = PV_0(1 + I)$$

(or)

$$PV_0 = \frac{V_0}{(1+I)} \text{ and } PV_0 = F\left[\frac{1}{(1+i)^n}\right]$$

Where,

V_n = Future value n period

PV_0 = Present value

i = Discount rate

2.1.1.1 Compounding or Future Value and Annuity

Q3. Explain briefly about future value techniques.

Ans :

The time preference for money helps an individual to receive money, at present without waiting for future. But, if a person is paid appropriately for his waiting time by providing guarantee to him that he will receive more money in future then he may wait.

For example, an individual who is given ` 400 today can wait for a year if he is given a guarantee of receiving of ` 400 at the end of a year (if the rate of interest is 5% p.a).

The future value at the end of first period can be obtained with the help of the following formula,

$$FV_1 = V_0(1+I)$$

Where,

FV_1 = Future value at the end of first period

V_0 = Value of money at present value or original sum of money

I = Interest rate.

From the above given example we can determine the value of ` 200 after two years at 5% interest per annum. The second year's interest is calculated on both the original amount and the interest earned at the end of first year. Thus, such type of payment of interest is called as compounding. The value of money after two years is ascertained as.

$$FV_2 = V_1(1 + I)$$

Where,

V_1 = 420 [Value of money at the end of first year]

I = Interest rate (0.05)

$FV_2 = V_1 (1 + I)$

$= 420 (1 + 0.05)$

$= `441$

In the same way, we can calculate the time value of money for any number of years. Thus, the future value of current sum of money at period 'n' is,

$$FV_2 = V_0(1 + I)^n$$

So, the value of 400 @5% interest rate after ten years will be,

$FV_{10} = 400 (1 + 0.05)^{10}$

$= 400 (1.05)^{10}$

$= `400 (1.628)$

$= 651.2$

Doubling Period

Investors generally wants to know the time taken for doubling the amount at a given interest rate. It can be ascertained with the help of following rules of thumb of doubling period.

(a) Rule of 72

$$\text{Doubling period} = \frac{72}{\text{Rate of interest}}$$

(b) Rule of 69

$$\text{Doubling period} = 0.35 + \frac{69}{\text{Interest rate}}$$

Future Value of an Annuity

A set of payments occurring for a specified number of periods is called as an annuity. Example: The premium payments made by life insurance company are considered as an annuity.

If the cash flows occurs at the end of each period then such type of annuity is called as an ordinary annuity or deferred annuity and when the cash flows occurs at the beginning of each period then such type of annuity is referred as an annuity due to the future value of an annuity. It is calculated with the help of the following formula,

$FVA_n = X(1 + r)^{n-1} + X(1 + r)^{n-2} + ... + X$

$$\therefore X[(1+r)^n - 1] / r$$

Where,

FVA_n = Future value of an annuity having a duration of n periods

X = Constant periodic flow

r = Interest rate per period

n = Annuity duration.

The various compounding techniques include the following,

(a) Annual compounding

(b) Semi-annual compounding

(c) Quarterly compounding

(d) Future/compounded value of a series of payments or annual compounding of a series of payments

(e) Compound sum of an annuity or annual compounding of annuity and

(f) Doubling period.

2.1.1.2 Discounting or present value

Q4. Explain briefly about present value techniques.

Ans : **(Imp.)**

Present value is different from the compound value or future value. A rupee today is worth more than a rupee received after a year or two. Future value reveals the amount of money at some future period of time, whereas the present values reveals the value of money at present for future sum of money.

The present value which will be received on future date would be less as the opportunity of investing it at some interest rate would be lost. Hence, the present value which is received in future date is always less, due to which this technique is known as discounting technique.

Example

If a person have a chance of buying a debenture today and will get back ` 4000 after one year then will he be willing to pay for debenture today if his time preference for money is 5% per annum? The present value of ` 4000 can be calculated with the help of following formula,

$$\boxed{V_n = PV_0(1+I)}$$

or

$$PV_0 = \frac{V_n}{(1+I)} \text{ and } PV_0 = F\left[\frac{1}{(1+i)^n}\right]$$

where

V_n = Future value n period

PV_0 = Present value

i = Discount rate.

$$\Rightarrow \quad PV_0 = \frac{4000}{1.05} = ` 3809.5/- \qquad (\because V_n = 4000, I = 0.05)$$

$\therefore$ Present value = ` 3809.5/-

(i) Present Value of an Annuity

An annuity is a set of equal payments occurring at a certain time period. The present value of an annuity can be calculated as follows,

$$PVA_n = \frac{X}{1+r} + \frac{X}{1+r^2} + ... + \frac{X}{(1+r)^{n-1}} + \frac{X}{(1+r)^{n-2}}$$

$$= X\left[\frac{1}{1+r} + \frac{1}{(1+r)^2} + ... + \frac{1}{(1+r)^{n-1}} + \frac{1}{(1+r)^n}\right]$$

$$\boxed{PVA_n = X\left[\left\{1-\left(\frac{1}{1+r}\right)^n\right\}\Big/ r\right]}$$

Where,

PVA_n = Present value of an annuity having duration of n periods

X = Constant periodic flow

r = Discount rate.

(ii) Present Value and Future Value Annuity Due

Annuity due is the cash flows occurring at the beginning of each year. The cash flows of an annuity due occurs one period earlier when compared to the cash flow of an ordinary annuity. The following relationship exists between them.

Annuity due value = Ordinary annuity value X(1 + r)

It is applicable for both present value and future value. It consists of two steps in which we firstly calculate the present or future value of an ordinary annuity then it is multiplied with (1 + r).

Annuity due value = Ordinary annuity value X(1 + r)

(iii) Deferred Annuity

Deferred annuity is an annuity where cash flows occurs after few years at a later date but not at the end of the beginning year. The present value of cash flow at deferred annuity is deducted from that of the whole year. It can be calculated by using the following formula.

$$\boxed{PV = C\left[\frac{1-(1+r)^{-n}}{r}\right]\times(1+r)^{-1}}$$

Where,

C = Cash flows

r = Discount rate

n = Number of years.

Q5. Compare and contrast present value and future value.

Ans :

Present Value	Future Value
1. Present value reveals the value of money at present for future sum of money.	1. Future value reveals the amount of money at some future period of time.
2. It is known as discounting technique.	2. It is also known as compounding technique.
3. Basic formula of present value = $PV_0 = F\left[\frac{1}{(1+i)^n}\right]$	3. Basic formula of future value $= FV_n = V_n (1 + I)^n$
4. The formula to calculate present value of an annuity.	4. The formula to calculate future value of an annuity $FVA_n = X[(1 + r)^n - 1)]r$.

PROBLEMS

1. Calculate the future value of `10,000 invested today for a period of 6 years, at an interest rate of 8% p.a.

Sol : **(Imp.)**

The compounding of interest can be calculated by using the equation.

$$FV_n = V_o (1 + I)^n$$

Where

FV = Amount at the end of the period

V_n = Principal amount at the beginning of the period.

I = Rate of Interest

n = Number of years.

Given,

V_o = 10,000

I = 8%

n = 5 years

$\therefore \quad FV_n = V_n (1 + I)^n$

$= 10,000 (1 + 0.08)^6$

$= 10,000 \times 1.58687$

$\therefore \quad V_A =$ ` 15,868.70

2. Calculate the future value of `20,000 invested for a period of 5 years at a time preference rate of 8%.

Sol :

The compounding of interest can be calculated by using the equation,

$$FV_n = V_o(1+I)^n$$

Where,

FV_n = Amount at the end of the period

V_o = Principal amount at the beginning of the period

I = Rate of interest

n = Number of years.

Given,

V_n = 20,000

I = 8%

n = 5 years.

$$FV_n = V_o(1+I)^n$$

$= 20,000\ (1 + 0.08)^5$

$= 20,000 \times 1.469328$

$\therefore\ V_A$ = `29,386.56

3. Calculate the value 5 years hence of a deposit of `1,000 made today if the interest rate is,

(a) 8 percent

(b) 10 percent

(c) 12 percent

Sol :

Given that,

` 1000 is deposited today

The formula for calculating the compound interest/future value after 5 years when the rate of interest is 8%, 10% and 12%,

$$FV_n = V_o(1+I)^n$$

Where,

FV_n = Future value after n period

F = Original sum of money = 1000 and

I = Interest rate = 8%, 10% and 12%

n = Number of period-5 years

(a) Future Value After 5 Years at 8% Interest Rate

$FV_5 = 1000\ (1 + 0.08)^5$

$= 1000\ (1.08)^5$

= ` 1,469.328

$\therefore$ Future value after 5 years of deposit @ 8% interest rate is ` 1,469.328

(b) Future Value After 5 Years @ 10% Interest Rate

$$I = 0.10,\ V_o = 1000,\ n = 5$$

$$FV_S = 1000\ (1 + 0.10)^5$$

$$= 1000\ (1.10)^5$$

$$= \text{`}\ 1,610.51$$

$\therefore$ Future value after 5 years of deposit @10% interest rate ` 1,610.51

(c) Future Value @ 12% Interest Rate After 5 Years

$$I = 0.12,\ V_o = 1000,\ n = 5$$

$$FV_S = 1000\ (1 + 0.12)^5$$

$$= 1000\ (1.12)^5$$

$$= \text{`}\ 1,762.34$$

$\therefore$ Future value @ 12% interest after 5 years ` 1,762.34.

4. You have paid in lumpsum an amount of ` 2,00,000/- towards the repayment of a loan of ` 1,50,000/- taken by you 5 years back. What is the implied rate of interest?

Sol : **(Imp.)**

Given that,

Future value (FV) = 2,00,000

Present value (PV) = 1,50,000

(n) = 5 years

$$FV = PV \times (1 + r)^5$$

$$FV = PV \times CVF_{(r, 5)}$$

$$2,00,000 = 1,50,000 \times CVF_{(r, n)}$$

$$\frac{2,00,000}{1,50,000} = CVF_{(r, n)}$$

$$1.333 = CVF_{(r, n)}$$

According to CVF table, the value 1.333 lies in the 6% column for 5 years.

$\therefore$ The implied rate of interest is 6%.

5. Mr. X deposits `5000 at the end of every year for 5 years and the deposit earns a compound interest @ 8% per annum. Determine how much money he will have at the end of 5 years.

Sol :

Annual Compounding of Annuity

End of year	Amount deposited	Number of years compounded	Compounded Interest factor from table A-1	Future Value (2) × (4)
(1)	(2)	(3)	(4)	(5)
	(`)			(`)
1	5000	4	1.360	6,800
2	5000	3	1.260	6,300
3	5000	2	1.166	5,830
4	5000	1	1.080	5,400
5	5000	0	1.000	5,000
				29,330

Mr. X will earn ` 29,330 at the end of 5th year.

6. Mr. Rakesh is to receive ` 5,000 after five years from now. His time preference for money is 10% per annum. Calculate its present value, if the discount factor is 0.621.

Sol :

Given that,

A = 5,000

i = 10% or 0.10 per annum

n = 5 years $\boxed{PV_o = F\left[\frac{1}{(1+i)^n}\right]}$

$\Rightarrow$ $5{,}000\left[\frac{1}{(1+0.10)^2}\right]$

$\Rightarrow$ $5{,}000\left[\frac{1}{1.61051}\right]$

$\Rightarrow$ 5,000 (0.621)

Present value is ` 3,105

(or)

Discount factor $\Rightarrow$ 0.621 [Already given in the problem]

$\boxed{P = F \times DF_{i,n}}$

$\Rightarrow$ 5,000 × 0.621 $\Rightarrow$ ` 3,105

$\therefore$ Present value is ` 3,105

7. A person is likely to get Rs. 9,876 every year for the next seven years. If the discount rate is 5%, find the present value of this money.

Sol : **(Imp.)**

A = 9,876

i = 5% = 0.05 per annum

n = 7 years

$$PV_0 = F\left[\frac{1}{(1+i)^n}\right]$$

$$= 9,876\left[\frac{1}{(1+0.05)^7}\right]$$

$$= 9,876\left[\frac{1}{1.4071}\right]$$

= 9,876 (0.7106) = 7017.88

= 7018.

---

8. Find the present value of ` 1,00,000 receivable after 8 years if the rate of discount is,

(i) 10% and

(ii) 5%

Sol :

P.V after 8 years of ` 1,00,000 = ?

Given that,

Discount rates

(i) 10%

(ii) 5%

$$\boxed{V_o = \frac{V_n}{(1+I)^n}} \text{ or } PV = F\left[\frac{1}{(1+i)^n}\right]$$

(i) At 10% Discount Rate

V_n = 1,00,000

I = 0.10

n = Number of years i.e., 8 years

$$V_n = \frac{1,00,000}{(1+0.10)^8} = \frac{1,00,000}{(1.10)^8}$$

$$= \frac{1,00,000}{2.1435} = 46652.67$$

∴ Present value of ` 1,00,000 receivable after 8 years @ 10% discount rate is 46652.67

(ii) At 5% Discount Rate

V = 1,00,000

I = 0.05

n = 8 years

$$V_o = \frac{1,00,000}{(1+0.05)^8} = \frac{1,00,000}{(1.05)^8}$$

$$= \frac{1,00,000}{1.47745} = 67684.18$$

∴ Present value of ` 1,00,000 receivable after 8 years @ 5% discount rate is 67684.18.

---

9. Find the present value of ` 10,000 receivable after 5 years if the rate of discount is,

(a) 10%

(b) 12%

(c) 15%

Sol : **(Imp.)**

Calculation of present value when the rate of discount is 10%.

(a) When discount rate is 10%

F = 10,000

i = 0.10

n = 5 years

$$\boxed{PV = F\left[\frac{1}{(1+i)^n}\right]}$$

$$PV = 10,000\left[\frac{1}{(1+0.10)^5}\right]$$

$$= 10,000\ \frac{1}{1.61051}$$

= 10,000 (0.6209) = 6,209

(b) When Discount Rate is 12%

F = 10,000

i = 0.12

n = 5 years

$$\boxed{PV = F\left[\frac{1}{(1+i)^n}\right]}$$

$$PV = 10,000\left[\frac{1}{(1+0.12)^5}\right]$$

$$= 10,000\left[\frac{1}{(1+12)^5}\right]$$

$$= 10,000\left[\frac{1}{1.76234}\right]$$

$$= 10,000\ (0.8501) = 8501.$$

(c) When Discount Rate is 15%

F = 10,000

i = 0.15

n = 5 years

$$\boxed{PV = F\left[\frac{1}{(1+i)^n}\right]}$$

$$PV = 10,000\left[\frac{1}{(1+0.15)^5}\right]$$

$$= 10,000\left[\frac{1}{(1.15)^5}\right]$$

$$= 10,000\left(\frac{1}{2.01136}\right)$$

$$= 10,000\ (0.4971) = 4971.7.$$

10. An investor invested Rs. 3,45,678 every year in a bank for 13 years. The bank offers 7.5% interest p.a. Find the future value of money.

Sol : **(Imp.)**

V_0 = 3,45,678

I = 7.5%

n = 13 years

$FV_n = V_n(1 + I)^n$

$= 3,45,678\ (1 + 0.8)^{13}$

$= 3,45,678 \times 2.7196$

$= 9,40,105.8.$

2.2 CAPITAL BUDGETING

2.2.1 Meaning

Q6. Define capital budgeting.

Ans : **(Imp.)**

Meaning

Capital budgeting is the process of making investment decisions in capital expenditures. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over period of time exceeding one year. The main characteristic of a capital expenditure is that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future. In simple language we may say that a capital expenditure is an expenditure incurred for acquiring or improving the fixed assets, the benefits of which are expected to be received over a number of years in future.

The following are some of the Examples of capital expenditure:

1. Cost of acquisition of permanent assets as land and building, plant and machinery, goodwill, etc.
2. Cost of addition, expansion, improvement or alteration in the fixed assets.
3. Cost of replacement of permanent assets.
4. Research and development project cost, etc.

Capital expenditure involves non-flexible long-term commitment of funds. Thus, capital expenditure decisions are also called as long term investment decisions. Capital budgeting involves the planning and control of capital expenditure. It is the process of deciding whether or not to commit resources to a particular long term project whose benefits are to be realised over a period of time, longer than one year. Capital budgeting is also known as Investment Decision Making, Capital Expenditure Decisions, Planning Capital Expenditure and Analysis of Capital Expenditure.

Definitions

i) **According to Charles T. Horngreen** has defined capital budgeting as, "Capital budgeting is long term planning for making and financing proposed capital outlays."

ii) **According to G.C. Philippatos**, "Capital budgeting is concerned with the allocation of the firm's scarce financial resources among the available market opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent streams of earning from a project, with the immediate and subsequent streams of expenditures for it".

iii) **According to Richard and Greenlaw** have referred to capital budgeting as acquiring inputs with long-run return.".

iv) **According to Lynch,** "Capital budgeting consists in planning development of available capital for the purpose of maximising the long term profitability of the concern."

From the above description, it may be concluded that the important features which distinguish capital budgeting decision from the ordinary day to day business decisions are :

1. Capital budgeting decisions involve the exchange of current funds for the benefits to be achieved in future.
2. The future benefits are expected to be realised over a series of years.
3. The funds are invested in non-flexible and long term activities.
4. They have a long term and significant effect on the profitability of the concern.
5. They involve, generally, huge funds.
6. They are irreversible decisions.
7. They are 'strategic' investment decisions, involving large sums of money, major departure from the past practices of the firm, significant change of the firm's expected earnings associated with high degree of risk, as compared to 'tactical' investment decisions which involve a relatively small amount of funds that do not result in a major departure from the past practices of the firm.

2.2.2 Features

Q7. State the features of capital budgeting.

Ans :

The features of capital budgeting are:

1. Investment proposal for which the Capital Budgeting technique is to be applied should be of a long-term nature.
2. Proposed investment is to be made during the current period, but return from the investment will be obtained over a number of years in the future period.
3. Expenditure for the proposed investment and return from such investment should be measured in terms of cash flow, that is, cash outflow and cash inflow respectively.
4. Investment decision may be taken for a single project proposal, or for two or more mutually exclusive project proposals.
5. Acceptance (or) rejection of an investment proposal should be based on the maximization of value of the firm.

Q8. Explain the Need and importance of capital budgeting.

Ans :

1. Huge Investments

Capital budgeting requires huge investments of funds, but the available funds are limited, therefore the firm before investing projects, plan are control its capital expenditure.

2. Long-term

Capital expenditure is long-term in nature or permanent in nature. Therefore financial risks involved in the investment decision are more. If higher risks are involved, it needs careful planning of capital budgeting.

3. Irreversible

The capital investment decisions are irreversible, are not changed back. Once the decision is taken for purchasing a permanent asset, it is very difficult to dispose off those assets without involving huge losses.

4. Long-term Effect

Capital budgeting not only reduces the cost but also increases the revenue in long-term and will bring significant changes in the profit of the company by avoiding over or more investment or under investment. Over investments leads to be unable to utilize assets or over utilization of fixed assets. Therefore before making the investment, it is required carefully planning and analysis of the project thoroughly.

Q9. Classify the different types of capital budgeting.

Ans :

1. Expansion and Diversification

A company may add capacity to its existing product lines to expand existing operations.

For example, the Gujarat State Fertilizer Company (GSFC) may increase its plant capacity to manufacture more urea. It is an example of related diversification. A firm may expand its activities in a new business. Expansion of a new business requires investment in new products and a new kind of production activity within the firm. If a packaging manufacturing company invests in a new plant and machinery to produce ball bearings, which the firm has not manufactured before, this represents expansion of new business or unrelated diversification. Sometimes a company acquires existing firms to expand its business. In either case, the firm makes investment in the expectation of additional revenue. Investments in existing or new products may also be called as revenue-expansion investments.

2. Replacement and Modernization

The main objective of modernization and replacement is to improve operating efficiency and reduce costs. Cost savings will reflect in the increased profits, but the firm's revenue may remain unchanged. Assets become outdated and obsolete with technological changes. The firm must decide to replace those assets with new assets that operate more economically.

For example, a cement company changing from semi-automatic drying equipment to fully automatic drying equipment. Replacement decisions help to introduce more efficient and economical assets and therefore, are also called cost-reduction investments. However, replacement decisions that involve substantial modernization and technological improvements expand revenues as well as reduce costs.

3. Mutually Exclusive Investments

They serve the same purpose and compete with each other. If one investment is undertaken, others will have to be excluded. A company may, e.g., either use a more labour- intensive, semi-automatic machine, (or) employ a more capital-intensive, highly automatic machine for production. Choosing the semi-automatic machine precludes the acceptance of the highly automatic machine.

4. Independent Investments

They serve different purposes and do not compete with each other.

For example, a heavy engineering company may be considering expansion of its plant capacity to manufacture additional excavators and addition of new production facilities to manufacture a new product - light commercial vehicles. Depending on their profitability and availability of funds, the company can undertake both investments.

5. Contingent Investments

Contingent investments are dependent projects; the choice of one investment necessitates undertaking one or more other investments.

For example, if a company decides to build a factory in a remote, backward area, it may have to invest in houses, roads, hospitals, schools, etc., for employees to attract the workforce. Thus, building of factory also requires investment in facilities for employees. The total expenditure will be treated as one single investment.

6. Research and Development Projects

Traditionally, R&D projects absorbed a very small proportion of capital budget in most Indian companies. Things, however, are changing. Companies are now allocating more funds to R&D projects, more so in knowledge-intensive industries. R&D projects are characterized by numerous uncertainties and typically involve sequential decision making. Hence the standard DCF analysis is not applicable to them. Such projects are decided on the basis of managerial judgment. Firms which rely more on quantitative methods use decision tree analysis and option analysis to evaluate R&D projects.

Q10. Outline the process of capital budgeting.

Ans : **(Imp.)**

Capital budgeting is a difficult process to the investment of available funds. The benefit will attained only in the near future but, the future is uncertain. However, the following steps followed for capital budgeting, then the process may be easier are.

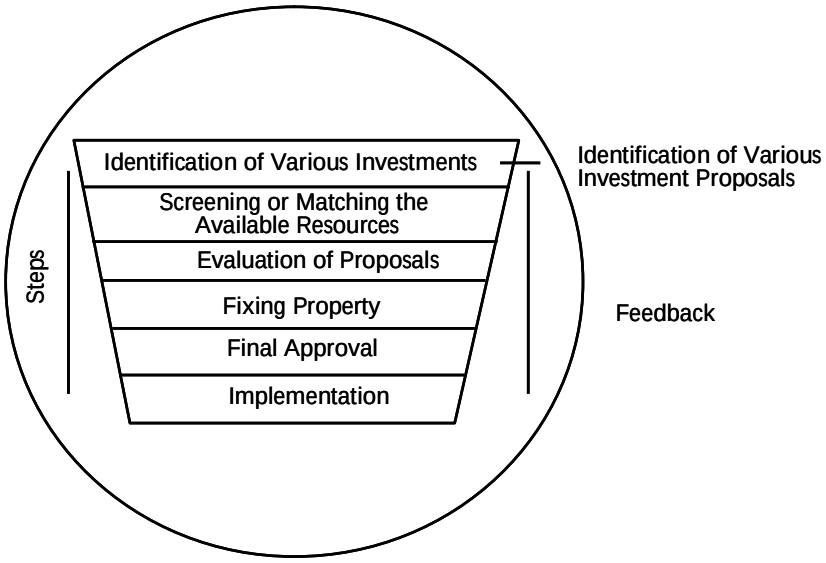


Fig.: Capital Budgeting Process

1. Identification of various investments proposals

The capital budgeting may have various investment proposals. The proposal for the investment opportunities may be defined from the top management or may be even from the lower rank. The heads of various department analyse the various investment decisions, and will select proposals submitted to the planning committee of competent authority.

2. Screening or matching the proposals

The planning committee will analyse the various proposals and screenings. The selected proposals are considered with the available resources of the concern. Here resources referred as the financial part of the proposal. This reduces the gap between the resources and the investment cost.

3. Evaluation of Proposals

After screening, the proposals are evaluated with the help of various methods, such as pay back period proposal, net discovered present value method, accounting rate of return and risk analysis. Each method of evaluation used in detail in the later part of this chapter. The proposals are evaluated by.

(a) Independent proposals

(b) Contingent of dependent proposals

(c) Partially exclusive proposals.

Independent proposals are not compared with another proposals and the same may be accepted or rejected. Whereas higher proposals acceptance depends upon the other one or more proposals. For example, the expansion of plant machinery leads to constructing of new building, additional manpower etc. Mutually exclusive projects are those which competed with other proposals and to implement the proposals after considering the risk and return, market demand etc.

4. Fixing property

After the evolution, the planning committee will predict which proposals will give more profit or economic consideration. If the projects or proposals are not suitable for the concern's financial condition, the projects are rejected without considering other nature of the proposals.

5. Final approval

The planning committee approves the final proposals, with the help of the following:

(a) Profitability

(b) Economic constituents

(c) Financial violability

(d) Market conditions.

The planning committee prepares the cost estimation and submits to the management.

6. Implementation

The competent authority spends the money and implements the proposals. While implementing the proposals, assign responsibilities to the proposals, assign responsibilities for completing it, within the time allotted and reduce the cost for this purpose. The network techniques used such as PERT and CPM. It helps the management for monitoring and containing the implementation of the proposals.

7. Performance review of feedback

The final stage of capital budgeting is actual results compared with the standard results. The adverse or unfavourable results identified and removing the various difficulties of the project. This is helpful for the future of the proposals.

Q11. Explain the factors influencing capital budgeting.

Ans :

The following factors (both financial and non-financial) influence the capital expenditure:

1. Availability of Funds

This is the crucial factor affecting the capital expenditure decision. Many projects are dropped due to financial constraints.

2. Future Earnings

Every project has to produce cash inflows in future. It is varied of each project and anticipated revenue's. This is the most significant factor, which affects the choice of a project.

3. Legal Compulsion

When the statutory compulsion arises, cost and benefits consideration have to be ignored (e.g., disposal of waste). The industry should provide the safety measures according to the Factories Act, automobile industry need to follow euro emission norms.

4. Degree of Uncertainty or Risk

The level of risk involved in a project is not predictable one.

5. Urgency

Projects, which are to be immediately taken up for a firm's survival, have to be treated differently from optional projects.

6. Research and Development Projects

Technology based industry need R&D investments for obtaining competitive edge in the industry.

7. Obsolescence

If obsolete machines and plant exist in a firm, then their replacement becomes a compulsion.

8. Competitor's Activities

When competitors perform certain activities, they may compel the company to undertake similar activities for its survival in the field.

9. Integral Factors

Firm's prestige, worker safety, social welfare, etc., influence the capital expenditure of a firm, which may be deemed as emotional factors.

2.3 APPLICATIONS OF DISCOUNTED CASH FLOW (DCF) IN CAPITAL BUDGETING

Q12. Define Discounted cash flow method. Explain merits and demerits of Discounted cashflow method.

Ans :

The time-adjusted or discounted cash flow methods take into account the profitability and also the time value of money. These methods also called modern methods of capital budgeting are becoming increasingly popular day by day.

Merits

1. The discounted cash flow methods take into consideration the time value of money to make effective capital budgeting decisions.
2. These methods give more emphasis to early inflows than later inflows.
3. These methods are suitable in situation where cash flows are uneven.
4. The entire economic life of the project investment and income is considered by these methods.
5. These methods makes possible comparison of projects having different capital outlays, different lives, different timings of cash flows.

Demerits

1. These methods do not take into account the time value of money. A rupee today is definitely worth more than a rupee after an year. This basic fact is ignored by these methods.
2. Cost of capital is not considered, which is a crucial element in making investment decisions.
3. Cash flows are not involved in analysis which are more significant than the accounting profits.
4. Investment in a project in any circumstances is to be made in installments then traditional methods are not applicable.

Modern techniques are again subdivided into three, viz.,

(a) Net present value. (NPV)

(b) Internal rate of return (or) trial and error, (IRR) and

(c) Profitability index (or) discounted benefit cost ratio. (PI)

2.3.1 Calculation of NPV

Q13. Define Net Present Value. Explain advantages and disadvantages of NPV.

Ans : **(Imp.)**

The cash inflow in different years are discounted (reduced) to their present value by applying the appropriate discount factor or rate and

the gross or total present value of cash flows of different years are ascertained. The total present value of cash inflows are compared with present value of cash outflows (cost of project) and the net present value or the excess present value of the project and the difference between total present value of cash inflow and present value of cash outflow is ascertained.

Calculation of NPV

The following four steps constitute a net-present-value analysis of an investment proposal:

1. Prepare a table showing the cashflows during each year of the proposed investment.
2. Compute the present value of each cashflow, using a discount rate that reflects the cost of acquiring investment capital. This discount rate is often called the hurdle rate or minimum desired rate of return.
3. Compute the net present value, which is the sum of the present values of the cashflows.
4. If the Net Present Value (NPV) is equal to or greater than zero, accept the investment proposal. Otherwise, reject it.

The present value of `1 due in any number of years can be found with the use of the following mathematical formula:

$$PV = \frac{1}{(1+r)^n}$$

Where,

PV = Present Value;

r = Rate of interest/discount rate;

n = Number of years

Net present value gives explicit consideration to the time value of money; it is considered a sophisticated capital budgeting technique. All such techniques in one way or another, discount the firm's cash flows at a specified rate. This rate often called the discount rate, required return, cost of capital, or opportunity cost is the minimum return that must be earned on a project to leave the firm's market value unchanged.

The NPV is found by subtracting the present value of project's cash outflows (CF_0) from the present value of its cash inflows (CF_t) discounted at a rate equal to the firm's cost of capital (k).

NPV = Present Value of Cash Inflows - Present Value of Cash Outflows

Accept-Reject Decision

When NPV is used to make accept-reject decisions, the decision criteria are as follows:

NPV > Zero	Accept the proposal
NPV < Zero	Reject the proposal
NPV = Zero	Indifference

Advantages

The advantages of NPV method for evaluating investment proposals are as follows:

1. Recognition of Time Value of Money

The most significant advantage is that it explicitly recognizes the time value of money, e.g., total cash flows pertaining to two machines are equal but the net present value are different because of differences of pattern of cash streams. The need for recognizing the total value of money is thus satisfied.

2. Sound Method of Appraisal

It also fulfils the second attribute of a sound method of appraisal. In that it considers the total benefits arising out of proposal over its life time.

3. Selection of Mutually Exclusive Projects

It is particularly useful for selection of mutually exclusive projects.

4. Maximization of the Shareholder's Wealth

This method of asset selection is instrumental for achieving the objective of financial management, which is the maximization of the shareholder's wealth. In brief the present value method is a theoretically correct technique in the selection of investment proposals.

Disadvantages

Disadvantages of NPV method are:

1. Difficult to Understand

It is difficult to calculate as well as to understand and use, in comparison with payback method or average return method.

2. May not Give Accurate Decision

NPV can not give accurate decision if the amounts of investment of mutually exclusive projects are not equal.

3. Difficult Calculation

The serious problem associated with present value method is that it involves calculations of the required rate of return to discount the cash flows. The cost of capital is generally the basis of the firm's discount rate. The calculation of cost of capital is very complicated. In fact there is a difference of opinion even regarding the exact method of calculating it.

4. Absolute Measure

Another shortcoming is that it is an absolute measure. This method will accept the project which has higher present value. But it is likely that this project may also involve a larger initial outlay. Thus, in case of projects involving different outlays, the present value may not give dependable results.

2.3.2 Internal Rate of Return (IRR)

Q14. What is Internal Rate of Return? How is it calculated? State the merits and demerits of Internal Rate of Return.

Ans : **(Imp.)**

The internal rate of return is also one of the capital budgeting technique that identifies the time value of money. This method is also known as yield method, discounted rate of return and trial and error yield method. It is that rate of return which equates the present value of cash inflows to the present value of cash outflows. The hit and trial method is used in internal rate of return method to discount the cash flows of the project as discount rate is not known. The internal rate of return is calculated with the help of the following formula.

$$C = \frac{A_1}{(1+r)^1} + \frac{A_2}{(1+r)^2} + \frac{A_3}{(1+r)^3} + \ldots + \frac{A_n}{(1+r)^n}$$

Where,

C – Initial outlay at time zero

r – Rate of discount of internal rate of return

A_1 , A_2, ... A_n – Future net cash flows at different periods

n – Number of years.

The internal rate of return method involves following steps,

1. Calculate the future cash inflows before depreciation but after tax.
2. Calculate fake payback period by dividing the initial investment by average cash flows. Initial investment

$$\text{Fake payback period} = \frac{\text{Initial investment}}{\text{Average cash flows}}$$

3. Identify the discounting factor from present value annuity table and calculate NPV with that percentage.
4. If NPV is positive take a higher rate and if NPV is negative take a lower rate and once again calculate NPV.
5. After getting one positive NPV and one negative NPV, use interpolation to calculate actual IRR.

   Actual IRR can be calculated by using the following formula,

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

Decision Criteria

A particular project is accepted when IRR is more than cost of capital and if IRR of the project is less than cost of capital it is rejected.

Merits

1. IRR also take into consideration the time value of money and easily applicable to situations in which even and uneven cash flows exists.
2. It helps in calculating true profitability of the project as it consider all profits of the project.
3. The ascertainment of cost of capital is not very important as in case of NPV method.
4. It is suitable for goal of maximizing profits and it is one of the dependable techniques of capital budgeting.

Demerits

1. The internal rate of return is one of the difficult method for evaluation of investment proposals.
2. If the expected life, size and cash outlays of the projects are not equal then the result of NPV and IRR will also differ.
3. When different rates are used it may create confusion.

Q15. Explain the similarities and distinguish between NPV and IRR.

Ans :

A comparative study between net present value method and the internal rate of return method is presented under the following heads:

Similarities

- Net Present value method and the Internal Rate of Return Method are similar in the sense that both are modern techniques of capital budgeting and both take into account the time value of money.
- Both these methods give similar selection decisions independent of investment proposals as well as in the case of projects involving conventional cashflows.
- An independent investment proposal is one the acceptance of which does not eliminate the acceptance of others, so that all profitable projects can be accepted without constraints.
- On the other hand, conventional projects involve cash outflows only once in the beginning. Conventional investment proposal refers to an investment project in which the cashflow pattern is such that an initial investment (or) cash outlay is followed by a series of cash inflows.
- In case of the NPV method, a proposal is accepted if its NPV is positive, i.e., when actual rate of return on investment is higher than the cut-off rate or the required rate of return.
- In the IRR method, a proposal is accepted only when the IRR is higher than the cut-off rate. As the projects which have positive NPV also have higher IRR than the cut-off rate, both of these methods give the identical accept-reject decision.

Differences

Although similar in certain respects, the NPV and IRR methods are different from each other in the following several respects:

1. Rate of Interest

The NPV method takes the rate of interest as a known factor whereas the IRR method takes it as an unknown factor.

2. Re-Investment

While the NPV method considers the re-investment of intermediate cash inflows at the cut-off rate, i.e., required rate of return which is usually cost of capital, the IRR method considers the intermediate cash inflows at the IRR itself. As different projects yield different rates of return, the same firm cannot re-invest the cash inflows at different rates. Hence, for ranking two or more capital investment proposals NPV method is more reliable than the IRR method.

3. Investment Amount

While the NPV method attempts to find-out the amount which can be invested in a particular project so that its projected earnings may suffice to repay this amount with interest at the market rate, the IRR method seeks to find-out the maximum rate of interest at which the amount invested in the project could be repaid out of the cash inflows arising from that project.

4. Mutually Exclusive Projects

Both methods may give contradictory results in terms of acceptance (or) rejection in case of mutually exclusive projects. If the projects under consideration involve different initial cash outlays, different pattern of cash inflows and different expected lives; the NPV and IRR methods will give a different ranking. The ranking of mutually exclusive projects would be theoretically correct because it is consistent with the objective of maximization of shareholder's wealth. The IRR may be indeterminate or give multiple rates if the pattern of cashflow is non-conventional. To conclude, the NPV method is superior to the IRR method. It is the best technique of evaluating capital investment proposals.

PROBLEMS

11. From the following information calculate the net present value of the two projects and suggest Which of the two projects should be accepted assuming a discount rate of 10%.

Particulars	Project X	Project Y
Initial Investment	` 20,000	` 30,000
Estimated Life	5 years	5 years
Scrap Value	` 1,000	` 2,000

The profits before depreciation and after taxes (cash flow) are as follows:

Particulars	Year 1 (`)	Year 2 (`)	Year 3 (`)	Year 4 (`)	Year 5 (`)
Project X	5,000	10,000	10,000	3,000	2,000
Project Y	20,000	10,000	5,000	3,000	2,000

Sol :

Calculations for Net Present Value

Project X

Year	Cash Flows (`)	Present Value of Re 1 @ 10% (Discount Factor) using Present Value Table)	Present Value of Net Cash Flows (`)
1	5,000	0.909	4,545
2	10,000	0.826	8,260
3	10,000	0.751	7,510
4	3,000	0.683	2,049
5	2,000	0.621	1,242
5 (Scrap value)	1,000	0.621	621
Present Value of All Cash Inflows			24,227
Less: Present value of initial investment			20,000
Net Present Value			4,227

Project Y

Year	Cash Flows (`)	Present Value of Re. 1 @ 10% (Discount Factor) using Present Value Tables	Present Value of Net Cash Flows (`)
1	20,000	0.909	18,180
2	10,000	0.826	8,260
3	5,000	0.751	3,755
4	3,000	0.683	2,049
5	2,000	0.621	1,242
5 (Scrap value)	2,000	0.621	1,242
Present Value of Cash Inflows			34,728
Less: Present value of initial investment			30,000
Net Present Value			4,728

Net present value of project Y is higher than the net present value of project X and hence it is suggested that project Y should be selected.

12. Phoenix Company is considering two mutually exclusive investments. Project P and Project Q. The expected cash flows of these projects in millions of rupees are as follows,

Year	Project P	Project Q
0	(1000)	(1600)
1	(1000)	200
2	(500)	400
3	(250)	600
4	2000	800
5	4000	200

What is the NPV for each project? The discounting factor of P and Q is 10% and 20%.

Sol :

Project 'P'

Calculation of NPV

Year	Cash Flow (`)	PV @ 10%	PVCF	PV @ 20%	PVCF
1	(1000)	0.909	–909	0.833	–833
2	(500)	0.826	–413	0.694	–347
3	(250)	0.751	–187.75	0.579	–144.75
4	2000	0.683	1366	0.482	964
5	4000	0621	2484	0.402	1608
			2340.25		**1247.25**

1. NPV = Cash inflow – Cash outflow

   @10% = 2340.25 – 1,000 = 1340.25

2. NPV = Cash inflow – Cash outflow

   @20% = 1247.25 – 1,000 = 247.25

Project 'Q'

Calculation of NPV

Year	Cash Flow (`)	PV @ 10%	PVCF	PV @ 20%	PVCF
1	200	0.909	181.8	0.833	166.6
2	400	0.826	330.4	0.694	277.6
3	600	0.751	450.6	0.579	347.4
4	800	0.683	546.4	0.482	385.6
5	200	0.621	124.2	0.402	804
			1633.4		**1257.6**

1. NPV = Cash inflow – Cash outflow

   @10% = 1633.4 – 1600

   = 33.4

2. NPV = Cash inflow – Cash outflow %

   @20% = 1257.6 – 1,600 = – 342.4.

13. Calculate the NPV and IRR of a project, the cash flows of which are as follows, (Amount in lakhs of Rupees)

Years	0	1	2	3	4	5
Investment	80					
Cash Inflows		30	40	50	30	10

Additional Information:

(a) The cost of capital is 10%.

(b) Salvage value at the end of 5th year is zero.

Sol :

Calculation of NPV at 10% (Cost of Capital)

Year	Cash Flows	PV Factor at 10%	PVCF (`)
1	30	0.909	27.27
2	40	0.826	33.04
3	50	0.751	37.55
4	30	0.683	20.49
5	10	0.621	6.21
		Present Value	124.56
		Less: Initial Investment	80
		NPV	**44.56**

∴ NPV @ 10% cost of capital is ` 44.56.

IRR

The present value of project is 124.56 at 10% or a positive NPV is 44.56. Therefore, a higher rate is to be considered say 31% for positive and 32% for negative NPV to calculate IRR.

Calculation of NPV at 31% and 32%

Year	Cash Flow	PVF @ 31%	PVCF (`)	PVF @ 32%	PVCF (`)
1	30	0.763	22.89	0.758	22.74
2	40	0.583	23.32	0.574	22.96
3	50	0.445	22.25	0.435	21.75
4	30	0.340	10.2	0.329	9.87
5	10	0.259	2.59	0.250	2.50
		Present Value	81.25		79.82
		Less: Initial Investment	80.00		80.00
		NPV	1.25		0.18

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

$$= 31 + \frac{1.25}{1.43} \times (32 - 31)$$

$$= 31 + 0.8741 \times 1$$

$$= 31 + 0.8741$$

$$= 31.86$$

14. A project requires an investment of ` 1,44,000 and is expected to generate cash in flows of ` 54,000, ` 63,000, ` 72,000, ` 63,000 and ` 54,000 per annum for the next five years. The risk free rate is 10%.

Evaluate the project using IRR method. If the following certainty equivalents are to be considered, how would you evaluate and interpret the project?

Year	1	2	3	4	5
C.E	0.96	0.92	0.88	0.82	0.79

Sol : **(Imp.)**

Step-1

Calculation of FPBP (Fake Pay Back Period)

$$\text{FPBP} = \frac{\text{Initial Investment}}{\text{Average CFAT's}}$$

$$\text{Total cash inflows} = 54{,}000 + 63{,}000 + 72{,}000 + 63{,}000 + 54{,}000 = 3{,}06{,}000$$

$$\text{Average CFATs} = \frac{3{,}06{,}000}{5} = 61{,}200$$

Initial investment = 1,44,000

$$\text{FPBP} = \frac{1,44,000}{61,200} = 2.3529$$

Step-2

Present value annuity table indicates that, IRR lies between 31% and 32%.

Step-3

Calculation of Present Values

Year	CFAT	PV @ 32%	P.V. of Cash Inflow	P.V. @ 31%	P.V. of Cash Inflows
1	54,000	0.758	40,932	0.763	41,202
2	63,000	0.574	36,162	0.583	36,729
3	72,000	0.435	31,320	0.445	32,040
4	63,000	0.329	20,727	0.340	21,420
5	54,000	0.250	13,500	0.259	13,986
			1,42,641		**1,45,377**

Step-4

The exact rate will be obtained by the method of interpolation as given below.

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

$$= 31 + \frac{1,45,377 - 1,44,000}{1,45,377 - 1,42,641} \times (32 - 31) = 31 + \frac{1377}{2736} \times 1$$

$$= 31 + 0.5 = 31.5\%.$$

Certainty Equivalent (CE) Approach

Year	CFAT	CE	Adjusted CFAT	P.V. @10%	Total P.V.
1.	54,000	0.96	51,840	0.909	47,123
2.	63,000	0.92	57,960	0.826	47,875
3.	72,000	0.88	63,360	0.751	47,583
4.	63,000	0.82	51,660	0.683	35,284
5.	54,000	0.79	42,660	0.621	26,492
					20,4357

CE = 204357 – 1,44,000

= 60,357.

Comment

The project is profitable on the basis of a higher IRR and also on the basis of CE approach.

15. Calculate NPV for the given project.

Year	0	1	2	3	4	5
(A) Cash flows	200	35	80	90	75	20
(B) Cash flows	200	18	10	10	40	35

The company anticipates the cost of capital of 12%.

Sol : **(Imp.)**

Calculation of NPV for Project A

Year	CFAT	PV. factor @ 12%	PV CFAT
1	35	0.893	31.255
2	80	0.797	63.76
3	90	0.712	64.08
4	75	0.636	47.7
5	20	0.567	11.34
			218.135

NPV = Present Value of Cash Inflow – Cash Outflow

= 218.135 – 200

= 18.135

Calculation of NPV for Project B

Year	CFAT	PV. factor @ 12%	PV CFAT
1	8	0.893	16.074
2	10	0.797	7.97
3	10	0.712	7.12
4	40	0.636	25.44
5	35	0.567	19.845
			76.44

NPV = Present Value of Cash Inflow – Cash Outflow

76.44 – 200 = –123.56

16. A project cost Rs. 2,500/- and is expected to generate cash inflows of Rs. 900, 800, 700, 600 and 500 respectively for 5 years. The opportunity cost of capital may be assumed to be 10% calculate NPV for the given project.

Sol :

Initial cost = 2,500

Year	CFAT	PV factor @ 10%	PV. CFAT
1	900	0.909	818.1
2	800	0.826	660.8
3	700	0.751	525.7
4	600	0.683	409.8
5	500	0.621	310.5
			2,724.9

NPV = Present Value of Cash Inflow – Cash Outflow

NPV = 2724.9 – 2,500 = 224.9.

17. A company is examining two mutually exclusive investment proposals. The management of the company uses certainty equivalents (CE) to evaluate new proposals. From the following information advise the company which project should be taken up. The initial cash outlay for both the proposals is Rs. 25,000.

Year	Proposal A		Proposal B	
	CFAT (Rs.)	CE	CFAT (Rs.)	CE
1	15,000	0.8	9,000	0.9
2	15,000	0.7	18,000	0.8
3	15,000	0.6	12,000	0.7
4	15,000	0.5	16,000	0.4

The firm cost of capital is 12%.

Sol : **(Imp.)**

Proposal 'A' Certainity Equivalent Approach

Year	CFAT	CE	Adjust CFAT	P.V. @ 12%	Total PV
1	15,000	0.8	12,000	0.893	10.716
2	15,000	0.7	10,500	0.797	8,368
3	15,000	0.6	9,000	0.712	6,408
4	15,000	0.5	7,500	0.635	4,762
					30,254

CE = 30,254 – 25,000

= 5,254

Proposal 'B' Certainity Equivalent Approach

Year	CFAT	CE	Adjust CFAT	P.V. @ 12%	Total PV
1	9,000	0.9	8,100	0.893	7,233
2	18,000	0.8	14,400	0.797	11,477
3	12,000	0.7	8,400	0.712	5,981
4	16,000	0.4	6,400	0.635	4064
					28,755

CE = 28,755 – 25,000

= 3,755

18. A Project requires on investment of Rs. 12,00,000 and has a life of four years. The expected net cash flows from the project over the four years are Rs.4,50,000, Rs. 5,40,000, Rs. 3,60,000 and Rs. 2,82,000. The cost of capital is 11%. Find the internal rate of return of the project.

Sol : **(Imp.)**

Calculation of NPV

Year	Cash flow	PV@11%	PVCF
1	4,50,000	0.901	4,05,450
2	5,40,000	0.812	4,38,480
3	3,60,000	0.731	2,63,160
4	2,82,000	0.659	1,85,838
			12,92,928

NPV = 12,92,928 – 12,00,000

= 92,928

For calculating IRR one must be positive and one must be negative NPV. Let us try at 15%.

Year	Cash flow	PV@15%	PVCF
1	4,50,000	0.869	3,91,050
2	5,40,000	0.756	4,08,240
3	3,60,000	0.657	2,36,520
4	2,82,000	0.571	1,61,022
			11,96,832

NPV = 11,96,832 – 12,00,000

= – 3168.

Calculation of IRR

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates.}$$

$$11 + \frac{12,92,928 - 12,00,000}{12,92,928 - 11,96,832} \times 4(15 - 11)$$

$$11 + \frac{92,928}{96,096} \times 4$$

$$11 + 3.87 = 14.87.$$

19. A company has to select one of the following two projects:

Particulars	Project A	Project B
Cost	**Rs. 22,000**	**20,000**
Cash inflows:		
Year 1	**12,000**	**2,000**
Year 2	**4,000**	**2,000**
Year 3	**2,000**	**4,000**
Year 4	**10,000**	**20,000**

Using the Internal Rate of Return method suggest which is Preferable.

Sol : **(Imp.)**

$$\text{Fake pay back period} = \frac{\text{Cash outlay}}{\text{Cash inflow}}$$

Project A

$$\text{Cash inflow} = \frac{\text{Total cash inflow}}{\text{No. of years}}$$

$$= \frac{28,000}{4} = 7,000$$

$$\text{Fake pay back period} = \frac{22,000}{7,000} = 3.14$$

Project B

$$\text{Cash inflow} = \frac{28,000}{4} = 7,000$$

$$\text{Fake pay back period} = \frac{20,000}{7,000} = 2.86$$

The factor thus calculated will be located in table II below. This would give the estimated rate of return to be applied discounting the cash for the internal rate of returns. In this of project A the rate comes to 10% while in case of project B it comes to 15%.

Project A

Year	Cash Inflows `	Discounting Factor at 10%	Present Value `
1	12,000	0.909	10,908
2	4,000	0.826	3,304
3	2,000	0.751	1,502
4	10,000	0.683	6,830
			22,544
	Less: Initial Investment.		22,000
	Net Present Value		544

The present value at 10% comes to Rs. 22,544. The initial investment in Rs. 22,000. Interest rate of return may be taken approximately at 10%.

In this case more exactness is required another trial which is slightly higher than 10% (Since at this rate the present value is more than initial investment) may be taken.

Taking a rate of 12% the following results would emerge.

Year	Cash Inflows `	Discounting Factor at 12%	Present Value `
1	12,000	0.893	10,716
2	4,000	0.797	3,188
3	2,000	0.712	1,424
4	10,000	0.636	6,360
			21,688
	Less: Initial Investment.		22,000
	Net Present Value		(–) 312

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

$$= 10\% + \frac{544}{544 - (-312)} \times 2 = (12 - 10)$$

$$= 10\% + \frac{544}{823} \times 2$$

$$= 10 + 0.66 \times 2$$

$$= 10 + 1.32 = 11.32\%$$

Project B

Year	Cash Inflows `	Discounting Factor at 10%	Present Value `
1	2,000	0.909	1,818
2	2,000	0.826	1,652
3	4,000	0.751	3,004
4	20,000	0.683	13,660
		Total Present Value	20,134
		Less : Initial investment	20,000
		Net Present Value	134

The present value at 10% comes to Rs. 20,134. The initial investment in Rs. 20,000. Interest rate of return may be taken approximately at 10%.

In this case more exactness is required another trial which is slightly higher than 10% (Since at this rate the present value is more than initial investment) may be taken. Taking a rate of 15% the following results would emerge.

Year	Cash Inflows `	Discounting Factor at 15%	Present Value `
1	2,000	0.869	1,738
2	2,000	0.756	1,512
3	4,000	0.657	2,628
4	20,000	0.572	11,440
		Total Present Value	17,318
		Less: Initial investment	20,000
		Net Present Value	–2,682

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

$$\text{IRR} = 10 + \frac{134}{134 - 2,682} \times 5$$

$$= 10 + \frac{134}{-2548} \times 5$$

$$= 10 + (-0.26)$$

$$= 9.74\%.$$

Thus, internal rate of return in project 'A' is higher as compared to project 'B'. Therefore project 'A' is preferable.

20. A project costs `. 16,000 and is expected to generate cash inflow of `. 4,000 each five years. Calculate the Internal rate of return.

Sol :

$$\text{Fake pay back period} = \frac{\text{Cash outlay}}{\text{Cash inflow}} = \frac{16,000}{4,000} = 4$$

Facts may lays between 6% to 8%

4.221 for 6%

3.993 for 8%

4000 × 4.21 = 16,840

4000 × 3.99 = 15,960

6% present value = 16,840

Less : Investment = 16,000

Net present value = 840

8% present value = 15,960

Less : Investment = 16,000

– 40

$$\text{Lower rate} + \frac{\text{Present value at lower rate} - \text{Cash outflow}}{\text{PV at lower rate} - \text{PV at higher rate}} \times \text{Difference in the rates}$$

$$= 6\% + \frac{840}{840 - (-40)} \times 2\%$$

= 6% + 1.91%

= 7.91%

Exercise Problems

1. Cash inflow and outflow of Narmada project are given below:

Year	Cash Outflow (`)	Cashflow (`)
0	1,50,000	–
1	30,000	20,000
2	–	30,000
3	–	60,000
4	–	80,000
5	–	30,000

The salvage value at the end of 5th year is ` 40,000. Calculate NPV.

PV factor at 10% discount is as follows:

Year	PV Factors at 10%
1	0.909
2	0.826
3	0.751
4	0.683
5	0.620

[Ans: Net Present Value = `8,790]

2. As a financial manager of TAJ Ltd, Hubli, you have to advise the board of directors on choosing between to competing project proposals, which require an equal investment of ` 1,00,000 and expected to generate cashflows as under:

Year	PV Factor at 10%	Project-I (`)	Project-II (`)
2007	0.909	48,000	20,000
2008	0.826	32,000	24,000
2009	0.751	20,000	36,000
2010	0.683	Nil	48,000
2011	0.621	24,000	16,000
2012	0,564	12,000	8,000

[Ans: Net Present Value Project I: `6,756 Project II: `12,272]

3. A company is considering two mutually exclusive projects. Both require an initial outlay of ?2.00,000 each and have a life of 5 years. The company's required rate of return is 10 per cent. The expected cashflows are as follows:

Year	Project X (`)	Project Y (`)
1.	80,000	1,20,000
2.	80,000	60.000
3.	80,000	40,000
4.	80,000	1,00,000
5.	80,000	1,00,000

Determine the net present value and internal rate of return of each project and indicate which project should be selected and why?

[Ans: Net Present Value Project X: ` 1,03,200; Project Y: ` 1,19,080]
[IRR Project X: 28%(Approx); IRR Project Y: 32%(Approx)]

4. The expected cash inflows of a new project are estimated as under:

Year	Cash Inflow (`)
1	1,50,000
2	2,50,000
3	3,50,000
4	2,50,000
5	2,00,000

The initial investment required for the project is ` 7,00,000. The risk-adjusted discount rate is 12%. Evaluate as to whether the project proposal is worthwhile.

[Ans: NPV – ` 1,54,721]

5. A company is examining two mutually exclusive investment proposals. The management of the company uses Certainty Equivalents (CE) to evaluate new investment proposals. From the following information pertaining to these projects advise the company which project should be taken-up by the company.

Year	Proposal A		Proposal B	
	CRAT (`)	CE	CRAT (`)	CE
0	– 25,000	1.0	– 25,000	1.0
1	15,000	0.8	9,000	0.9
2	15,000	0.7	18,000	0.8
3	15,000	0.6	12,000	0.7
4	15,000	0.5	16,000	0.4

The firms best of capital is 12%.

[Ans: NPV of Proposal A: ` 5,262.5; NPV of Proposal B: ` 3,761.3]

6. If a man deposit ` 55,650 in a bank which is paying a 12 per cent rate of interest on a ten-year time deposit, haw much would the deposit grow at the end of ten years?

[Ans: ` 1,72,848.90]

7. Find the amount of annuity if payment of `500 is made annually for 7 years at interest rate of 14% compounded annually.

[Ans: ` 5,365.25]

8. Recurring deposit of ` 100 is made in the beginning of each of 4 years starting now at 6% p.a. What will be the total deposit at the end of 4 years?

[Ans: ` 463.75]

9. Find the present value of `10,000 to be required after 5 years if the interest rate be 9 per cent.

[Ans: ` 6,500]

Short Question and Answers

1. Define time value of money.

Ans :

The value of money changes with time money received today has more value than the money received in future. If an individual has to make a choice between receiving money today or receiving money after a certain period then he would options for receiving at the earlier point of time, as the current receipt of money is more valuable than the future receipt of money. The situation is generally termed as "Timer Preference for Money".

Reasons for Time Value of Money

Money has time value because of the following reasons:

i) Risk and Uncertainty

Future is always uncertain and risky. Outflow of cash is in our control as payments to parties are made by us. There is no certainty for future cash inflows. Cash inflow is dependent out on our creditor, bank, etc. As an individual or firm is not certain about future cash receipts, it prefers receiving cash now.

ii) Preference for Consumption

Most people have subjective preference for present consumption over future consumption of goods and services either because of the urgency of their present wants or because of the risk of not being in a position to enjoy future consumption that may be caused by illness or death, or because of inflation. As money is the means by which individuals acquire most goods and services, they may prefer to have money now.

iii) Investment Opportunities

An investor can profitably employ a rupee received today, to give him a higher value to be received tomorrow or after a certain period of time.

iv) Inflationary Economy

In an inflationary economy, the money received today, has more purchasing power than the money to be received in future. In other words, a rupee today represents a greater real purchasing power than a rupee a year hence.

2. Define capital budgeting.

Ans :

Meaning

Capital budgeting is the process of making investment decisions in capital expenditures. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over period of time exceeding one year. The main characteristic of a capital expenditure is that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future. In simple language we may say that a capital expenditure is an expenditure incurred for acquiring or improving the fixed assets, the benefits of which are expected to be received over a number of years in future.

The following are some of the Examples of capital expenditure:

1. Cost of acquisition of permanent assets as land and building, plant and machinery, goodwill, etc.
2. Cost of addition, expansion, improvement or alteration in the fixed assets.
3. Cost of replacement of permanent assets.
4. Research and development project cost, etc.

Definitions

i) According to Charles T. Horngreen has defined capital budgeting as, "Capital budgeting is long term planning for making and financing proposed capital outlays."

ii) **According to G.C. Philippatos**, "Capital budgeting is concerned with the allocation of the firm's scarce financial resources among the available market opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent streams of earning from a project, with the immediate and subsequent streams of expenditures for it".

3. Future Value Technique

Ans :

The time preference for money helps an individual to receive money, at present without waiting for future. But, if a person is paid appropriately for his waiting time by providing guarantee to him that he will receive more money in future then he may wait.

The future value at the end of first period can be obtained with the help of the following formula,

$$FV_1 = V_0(1 + I)$$

Where,

FV_1 = Future value at the end of first period

V_0 = Value of money at present value or original sum of money

I = Interest rate.

The future value can be calculated with the following formula,

$$FV_n = V_0(1 + I)^n$$

Where,

FV_n = Amount at the end of the period

V_o = Principal amount at the beginning of the period

I = Rate of interest

n = Number of years

4. Present Value Technique

Ans :

The present values reveals the value of money at present for future sum of money. The present value which will be received on future date would be less as the opportunity of investing it at some interest rate would be lost. Hence, the present value which is received in future date is always less, due to which this technique is known as discounting technique.

The present value can be calculated with the help of following formula,

$$V_n = PV_0(1 + I)$$

(or)

$$PV_0 = \frac{V_0}{(1+I)} \text{ and } PV_0 = F\left[\frac{1}{(1+i)^n}\right]$$

Where,

V_n = Future value n period

PV_0 = Present value

i = Discount rate

5. Compare and contrast present value and future value.

Ans :

Present Value	Future Value
1. Present value reveals the value of money at present for future sum of money.	1. Future value reveals the amount of money at some future period of time.
2. It is known as discounting technique.	2. It is also known as compounding technique.
3. Basic formula of present value = $PV_0 = F\left[\frac{1}{(1+i)^n}\right]$	3. Basic formula of future value $= FV_n = V_n (1 + I)^n$
4. The formula to calculate present value of an annuity.	4. The formula to calculate future value of an annuity $FVA_n = X[(1 + r)^n - 1)]r$.

6. Features of capital budgeting.

Ans :

i) Investment proposal for which the Capital Budgeting technique is to be applied should be of a long-term nature.

ii) Proposed investment is to be made during the current period, but return from the investment will be obtained over a number of years in the future period.

iii) Expenditure for the proposed investment and return from such investment should be measured in terms of cash flow, that is, cash outflow and cash inflow respectively.

iv) Investment decision may be taken for a single project proposal, or for two or more mutually exclusive project proposals.

7. Factors influencing capital budgeting.

Ans :

The following factors (both financial and non-financial) influence the capital expenditure:

i) Availability of Funds: This is the crucial factor affecting the capital expenditure decision. Many projects are dropped due to financial constraints.

ii) Future Earnings: Every project has to produce cash inflows in future. It is varied of each project and anticipated revenue's. This is the most significant factor, which affects the choice of a project.

iii) Legal Compulsion: When the statutory compulsion arises, cost and benefits consideration have to be ignored (e.g., disposal of waste). The industry should provide the safety measures according to the Factories Act, automobile industry need to follow euro emission norms.

iv) Degree of Uncertainty or Risk: The level of risk involved in a project is not predictable one.

v) Urgency: Projects, which are to be immediately taken up for a firm's survival, have to be treated differently from optional projects.

vi) Research and Development Projects: Technology based industry need R&D investments for obtaining competitive edge in the industry.

8. Explain advantages and disadvantages of NPV.

Ans :

The cash inflow in different years are discounted (reduced) to their present value by applying the appropriate discount factor or rate and the gross or total present value of cash flows of different years are ascertained. The total present value of cash inflows are compared with present value of cash outflows (cost of project) and the net present value or the excess present value of the project and the difference between total present value of cash inflow and present value of cash outflow is ascertained.

9. Advantages of NPV

Ans :

i) Recognition of Time Value of Money

The most significant advantage is that it explicitly recognizes the time value of money, e.g., total cash flows pertaining to two machines are equal but the net present value are different because of differences of pattern of cash streams. The need for recognizing the total value of money is thus satisfied.

ii) Sound Method of Appraisal

It also fulfils the second attribute of a sound method of appraisal. In that it considers the total benefits arising out of proposal over its life time.

iii) Selection of Mutually Exclusive Projects

It is particularly useful for selection of mutually exclusive projects.

iv) Maximization of the Shareholder's Wealth

This method of asset selection is instrumental for achieving the objective of financial management, which is the maximization of the shareholder's wealth. In brief the present value method is a theoretically correct technique in the selection of investment proposals.

10. Merits and Demerits of Internal Rate of Return.

Ans :

Merits

1. IRR also take into consideration the time value of money and easily applicable to situations in which even and uneven cash flows exists.
2. It helps in calculating true profitability of the project as it consider all profits of the project.
3. The ascertainment of cost of capital is not very important as in case of NPV method.
4. It is suitable for goal of maximizing profits and it is one of the dependable techniques of capital budgeting.

Demerits

1. The internal rate of return is one of the difficult method for evaluation of investment proposals.
2. If the expected life, size and cash outlays of the projects are not equal then the result of NPV and IRR will also differ.
3. When different rates are used it may create confusion.

Choose the Correct Answers

1. Time value of money indicates that [a]
   (a) A unit of money obtained today is worth more than a unit of money obtained in future
   (b) A unit of money obtained today is worth less than a unit of money obtained in future
   (c) There is no difference in the value of money obtained today and tomorrow
   (d) None of the above
2. Time value of money supports the comparison of cash flows recorded at different time period by [c]
   (a) Discounting all cash flows to a common point of time
   (b) Compounding all cash flows to a common point of time
   (c) Using either a or b
   (d) None of the above
3. If the nominal rate of interest is 10% per annum and there is quarterly compounding, the effective rate of interest will be: [d]
   (a) 10% per annum (b) 10.10 per annum
   (c) 10.25%per annum (d) 10.38% per annum
4. Relationship between annual nominal rate of interest and annual effective rate of interest, if frequency of compounding is greater than one: [a]
   (a) Effective rate > Nominal rate (b) Effective rate < Nominal rate
   (c) Effective rate = Nominal rate (d) None of the above
5. Heterogeneous cash flows can be made comparable by [c]
   (a) Discounting technique (b) Compounding technique
   (c) Either a or b (d) None of the above
6. In independent projects evaluation, the results of internal rate of return and net present value lead to [c]
   (a) Cash flow decision (b) Cost decision
   (c) Same decisions (d) Different decisions
7. The projects which are mutually exclusive but different on scale of production or time of completion than the [b]
   (a) External return method (b) Net present value of method
   (c) Net future value method (d) Internal return method
8. A point where the profile of net present value crosses the horizontal axis at the plotted graph indicates the project [d]
   (a) Costs (b) Cash flows
   (c) Internal rate of return (d) External rate of return

9. In capital budgeting, the term of bond which has great sensitivity to interest rates is [c]

(a) Long-term bonds (b) Short-term bonds

(c) Internal term bonds (d) External term bonds

10. The span of time within which the investment made for the project will be recovered by the net returns of the project is known as [b]

(a) Period of return (b) Payback period

(c) Span of return (d) None of the above

11. Projects with _____ are preferred [a]

(a) Lower payback period (b) Normal payback period

(c) Higher payback period (d) Any of the above

12. Under Net present value criterion, a project is approved if [c]

(a) Its net present value is positive (b) The funds are unlimited

(c) Both ((A) and ((B) (d) None of the above

13. The internal Rate of Return (IRR) criterion for project acceptance, under theoretically infinite funds is: accept all projects which have [b]

(a) IRR equal to the cost of capital (b) IRR greater than the cost of capital

(c) IRR less than the cost of capital (d) None of the above

14. Which of the following criterion is often preferred [c]

(a) Net present value (b) Profitability index

(c) Internal Rate of Return (d) All of the above

15. Where capital availability is unlimited and the projects are not mutually exclusive, for the same cost of capital, following criterion is used [d]

(a) Net present value (b) Internal Rate of Return

(c) Profitability Index (d) Any of the above

16. A project is accepted when [d]

(a) Net present value is greater than zero

(b) Internal Rate of Return will be greater than cost of capital

(c) Profitability index will be greater than unity

(d) Any of the above

17. Rate of return method does not take into account [a]

(a) Time value of money (b) Present value of money

(c) Capital budgeting (d) Internal rate of return.

18. Capital Budgeting is also known as [b]

(a) Profitability index (b) Investment decision making.

(c) Capital budgeting (d) Internal rate of return.

19. Capital Investment decisions are generally are [a]
    (a) Irreversible (b) Reversible
    (c) Stagnant (d) Fixed
20. The simplest capital budgeting technique is [d]
    (a) Reversible (b) Net present value
    (c) Benefit/cost (d) Pay back period.
21. Internal rate of return is based on [c]
    (a) Error method (b) Direct method
    (c) Trial and Error method (d) Indirect method.
22. In NPV method, the project must be accepted when, [b]
    (a) NPV = 0 (b) NPV > 0
    (c) NPV < 0 (d) NPV < 0
23. IRR of a project is that rate where NPV tends to, [a]
    (a) Zero (b) Less than 1
    (c) More than 1 (d) I
24. The method which provides correct rankings of mutually exclusive projects, when the firm is not subject to capital rationing. [a]
    (a) Net present value (b) Paternal rate of return
    (c) Payback period (d) Profitability index.
25. The characteristic features of capital budgeting are [d]
    (a) Funding (b) Complexity
    (c) Irreversibility (d) All the above.
26. Which of the following is not a non-discounting method, [c]
    (a) Payback period (b) Accounting rate of return
    (c) Internal rate of return (d) None.

Fill in the Blanks

1. Future is always _____ and _____.
2. In time value of money $FV_n = V_0(1 + I)n$ where V_0 denotes _____.
3. A set of payments occurring for a specified number of periods is called as an _____.
4. Present value is different from the _____.
5. _____ due is the cash flows occurring at the beginning of each year.
6. _____ is the process of making investment decisions in capital expenditures.
7. Capital budging is also known as _____.
8. The capital investment decisions are _____.
9. The formula of Net Present Value _____.
10. Internal rate of return is also known as _____.
11. Capital investment decisions are generally of _____ nature.
12. Internal rate of return and _____ are the same.
13. Net Present value method take into account the _____ over the entire life of the project.
14. _____ is the process of evaluating profitability of long-term investment proposals.

ANSWER

1. Uncertain, Risky
2. Principal Amount at the Beginning of Period
3. Annuity
4. Compound value
5. Annuity
6. Capital budgeting
7. Investment Decision Making
8. Irreversible
9. $\frac{\text{Present Value of Cash Inflow}}{\text{Present Value of Cash Outflow}}$
10. Trial and Error Method
11. Planning capital expenditure
12. True profitability
13. Earnings
14. Capital budgeting

UNIT III

SOURCES OF LONG TERM FINANCE :

Sources of Long term finance- features of equity shares, preference shares, debentures, long term loans; Capital Structure – meaning, determinants of capital structure; cost of capital – component costs of capital, weighted average cost of capital; Dividend Policy Decision – types of dividend, determinants of dividend policy.

3.1 SOURCES OF FINANCE

Q1. Define finance. Explain the various sources of finance.

Ans : **(July-21, Imp.)**

Introduction

Finance is the lifeblood of business concern, because it is interlinked with all activities performed by the business concern. In a human body, if blood circulation is not proper, body function will stop. Similarly, if the finance not being properly arranged, the business system will stop. Arrangement of the required finance to each department of business concern is highly a complex one and it needs careful decision. Quantum of finance may be depending upon the nature and situation of the business concern. But, the requirement of the finance may be broadly classified into two parts:

(i) Long-term Financial Requirements (or) Fixed Capital Requirement

Financial requirement of the business differs from firm to firm and the nature of the requirements on the basis of terms or period of financial requirement, it may be long term and short-term financial requirements.

Long-term financial requirement means the finance needed to acquire land and building for business concern, purchase of plant and machinery and other fixed expenditure. Longterm financial requirement is also called as fixed capital requirements. Fixed capital is the capital, which is used to purchase the fixed assets of the firms such as land and building, furniture and fittings, plant and machinery, etc. Hence, it is also called a capital expenditure.

(ii) Short-term Financial Requirements (or) Working Capital Requirement

Apart from the capital expenditure of the firms, the firms should need certain expenditure like procurement of raw materials, payment of wages, day-to-day expenditures, etc. This kind of expenditure is to meet with the help of short-term financial requirements which will meet the operational expenditure of the firms. Short-term financial requirements are popularly known as working capital.

Sources of Finance

Sources of finance mean the ways for mobilizing various terms of finance to the industrial concern. Sources of finance state that, how the companies are mobilizing finance for their requirements. The companies belong to the existing or the new which need sum amount of finance to meet the long-term and short-term requirements such as purchasing of fixed assets, construction of office building, purchase of raw materials and day-to-day expenses.

Sources of finance may be classified under various categories according to the following important heads:

1. Based on the Period

Sources of Finance may be classified under various categories based on the period.

(a) Long-term sources

Finance may be mobilized by long-term or short-term. When the finance mobilized with large amount and the repayable over the period will be more than five years, it may be considered as long-term sources. Share capital, issue of debenture, long-term loans from financial institutions and commercial banks come under this kind of source of finance. Long-term source of finance needs to meet the capital expenditure of the firms such as purchase of fixed assets, land and buildings, etc.

Long-term sources of finance include:

- Equity Shares
- Preference Shares
- Debenture
- Long-term Loans
- Fixed Deposits

(b) Short-term sources:

Apart from the long-term source of finance, firms can generate finance with the help of short-term sources like loans and advances from commercial banks, moneylenders, etc. Short-term source of finance needs to meet the operational expenditure of the business concern.

Short-term source of finance include:

- Bank Credit
- Customer Advances
- Trade Credit
- Factoring
- Public Deposits
- Money Market Instruments

2. Based on Ownership

Sources of Finance may be classified under various categories based on the period:

(i) An ownership source of finance include

- Shares capital, earnings
- Retained earnings
- Surplus and Profits

(ii) Borrowed capital include

- Debenture
- Bonds
- Public deposits
- Loans from Bank and Financial Institutions.

3. Based on Sources of Generation

Sources of Finance may be classified into various categories based on the period.

(i) Internal source of finance includes

- Retained earnings
- Depreciation funds
- Surplus

(ii) External sources of finance may be include

- Share capital
- Debenture
- Public deposits
- Loans from Banks and Financial institutions

4. Based in Mode of Finance

(i) Security finance may be include

- Shares capital
- Debenture

(ii) Retained earnings may include

- Retained earnings
- Depreciation funds

(iii) Loan finance may include

- Long-term loans from Financial Institutions
- Short-term loans from Commercial banks.

The above classifications are based on the nature and how the finance is mobilized from various sources. But the above sources of finance can be divided into three major classifications:

- **Security Finance**

  If the finance is mobilized through issue of securities such as shares and debenture, it is called as security finance. It is also called as corporate securities. This type of finance plays a major role in the field of deciding the capital structure of the company.

- **Internal Finance**

  A company can mobilize finance through external and internal sources. A new company may not raise internal sources of finance and they can raise finance only external sources such as shares, debentures and loans but an existing company can raise both internal and external sources of finance for their financial requirements. Internal finance is also one of the important sources of finance and it consists of cost of capital while compared to other sources of finance.

- **Loans Finance**

  Loan financing is the important mode of finance raised by the company. Loan finance may be divided into two types:

  (a) Long-Term Sources

  (b) Short-Term Sources

3.1.1 Sources of Long term finance

3.1.1.1 Equity shares

Q2. Define equity shares. Explain the features of equity share capital.

Ans : **(May-19)**

Meaning

Equity Shares also known as ordinary shares, which means, other than preference shares. Equity shareholders are the real owners of the company. They have a control over the management of the company. Equity shareholders are eligible to get dividend if the company earns profit. Equity share capital cannot be redeemed during the lifetime of the company.

The liability of the equity shareholders is the value of unpaid value of shares.

Features

Equity shares consist of the following important features:

1. Maturity of the shares

Equity shares have permanent nature of capital, which has no maturity period. It cannot be redeemed during the lifetime of the company.

2. Residual claim on income

Equity shareholders have the right to get income left after paying fixed rate of dividend to preference shareholder. The earnings or the income available to the shareholders is equal to the profit after tax minus preference dividend.

3. Residual claims on assets

If the company wound up, the ordinary or equity shareholders have the right to get the claims on assets. These rights are only available to the equity shareholders.

4. Right to control

Equity shareholders are the real owners of the company. Hence, they have power to control the management of the company and they have power to take any decision regarding the business operation.

5. Voting rights

Equity shareholders have voting rights in the meeting of the company with the help of voting right power; they can change or remove any decision of the business concern. Equity shareholders only have voting rights in the company meeting and also they can nominate proxy to participate and vote in the meeting instead of the shareholder.

6. Pre-emptive right

Equity shareholder pre-emptive rights. The pre-emptive right is the legal right of the existing shareholders. It is attested by the company in the first opportunity to purchase additional equity shares in proportion to their current holding capacity.

7. Limited liability

Equity shareholders are having only limited liability to the value of shares they have purchased. If the shareholders are having fully paid up shares, they have no liability.

For example: If the shareholder purchased 100 shares with the face value of Rs. 10 each. He paid only Rs. 900. His liability is only Rs. 100.

Total number of shares 100

Face value of shares Rs. 10

Total value of shares 100 × 10 = 1,000

(–) Paid up value of shares	900
Unpaid value/liability	100

Liability of the shareholders is only unpaid value of the share (that is Rs. 100).

Q3. State the advantages and disadvantages of equity shares.

Ans :

Advantages

Equity shares are the most common and universally used shares to mobilize finance for the company.

It consists of the following advantages.

1. Permanent sources of finance

Equity share capital is belonging to long-term permanent nature of sources of finance, hence, it can be used for long-term or fixed capital requirement of the business concern.

2. Voting rights

Equity shareholders are the real owners of the company who have voting rights. This type of advantage is available only to the equity shareholders.

3. No fixed dividend

Equity shares do not create any obligation to pay a fixed rate of dividend. If the company earns profit, equity shareholders are eligible for profit, they are eligible to get dividend otherwise, and they cannot claim any dividend from the company.

4. Less cost of capital

Cost of capital is the major factor, which affects the value of the company. If the company wants to increase the value of the company, they have to use more share capital because, it consists of less cost of capital (K_e) while compared to other sources of finance.

5. Retained earnings

When the company have more share capital, it will be suitable for retained earnings which is the less cost sources of finance while compared to other sources of finance.

Disadvantages

It consists of the following disadvantages:

1. Irredeemable

Equity shares cannot be redeemed during the lifetime of the business concern. It is the most dangerous thing of over capitalization.

2. Obstacles in management

Equity shareholder can put obstacles in management by manipulation and organizing themselves. Because, they have power to contrast any decision which are against the wealth of the shareholders.

3. Leads to speculation

Equity shares dealings in share market lead to secularism during prosperous periods.

4. Limited income to investor

The Investors who desire to invest in safe securities with a fixed income have no attraction for equity shares.

5. No trading on equity

When the company raises capital only with the help of equity, the company cannot take the advantage of trading on equity.

3.1.1.2 Preference shares

Q4. Define Preference shares. Explain the different types of preference shares.

Ans : **(May-19)**

Meaning

The parts of corporate securities are called as preference shares. It is the shares, which have

preferential right to get dividend and get back the initial investment at the time of winding up of the company. Preference shareholders are eligible to get fixed rate of dividend and they do not have voting rights.

Preference shares may be classified into the following major types:

1. Cumulative preference shares

Cumulative preference shares have right to claim dividends for those years which have no profits. If the company is unable to earn profit in any one or more years, cumulative preference shares are unable to get any dividend but they have right to get the comparative dividend for the previous years if the company earned profit.

2. Non-cumulative preference shares

Non-cumulative preference shares have no right to enjoy the above benefits. They are eligible to get only dividend if the company earns profit during the years. Otherwise, they cannot claim any dividend.

3. Redeemable preference shares

When, the preference shares have a fixed maturity period it becomes redeemable preference shares. It can be redeemable during the lifetime of the company. The Company Act has provided certain restrictions on the return of the redeemable preference shares.

- **Irredeemable Preference Shares**

  Irredeemable preference shares can be redeemed only when the company goes for liquidator.

  There is no fixed maturity period for such kind of preference shares.

- **Participating Preference Shares**

  Participating preference shareholders have right to participate extra profits after distributing the equity shareholders.

- **Non-Participating Preference Shares**

  Non-participating preference share-holders are not having any right to participate extra profits after distributing to the equity shareholders. Fixed rate of dividend is payable to the type of shareholders.

- **Convertible Preference Shares**

  Convertible preference shareholders have right to convert their holding into equity shares after a specific period. The articles of association must authorize the right of conversion.

- **Non-convertible Preference Shares**

  There shares, cannot be converted into equity shares from preference shares.

Q5. State the features of preference share capital.

Ans :

The following are the important features of the preference shares:

1. Maturity period

Normally preference shares have no fixed maturity period except in the case of redeemable preference shares. Preference shares can be redeemable only at the time of the company liquidation.

2. Residual claims on income

Preferential shareholders have a residual claim on income. Fixed rate of dividend is payable to the preference shareholders.

3. Residual claims on assets

The first preference is given to the preference shareholders at the time of liquidation. If any extra Assets are available that should be distributed to equity shareholder.

4. Control of Management

Preference shareholder does not have any voting rights. Hence, they cannot have control over the management of the company.

Q6. What are the advantages and disadvantages of preference share capital.

Ans :

Advantages

Preference shares have the following important advantages.

1. Fixed dividend

The dividend rate is fixed in the case of preference shares. It is called as fixed income security because it provides a constant rate of income to the investors.

2. Cumulative dividends

Preference shares have another advantage which is called cumulative dividends. If the company does not earn any profit in any previous years, it can be cumulative with future period dividend.

3. Redemption

Preference Shares can be redeemable after a specific period except in the case of irredeemable preference shares. There is a fixed maturity period for repayment of the initial investment.

4. Participation

Participative preference shareholders can participate in the surplus profit after distribution to the equity shareholders.

5. Convertibility

Convertibility preference shares can be converted into equity shares when the articles of association provide such conversion.

Disadvantages

1. Expensive sources of finance

Preference shares have high expensive source of finance while compared to equity shares.

2. No voting right

Generally preference shareholders do not have any voting rights. Hence they cannot have the control over the management of the company.

3. Fixed dividend only

Preference shares can get only fixed rate of dividend. They may not enjoy more profits of the company.

4. Permanent burden

Cumulative preference shares become a permanent burden so far as the payment of dividend is concerned. Because the company must pay the dividend for the unprofitable periods also.

5. Taxation

In the taxation point of view, preference shares dividend is not a deductible expense while calculating tax. But, interest is a deductible expense.

Hence, it has disadvantage on the tax deduction point of view.

Q7. Distinguish between preference shares and equity shares.

Ans :

Basis of Difference	Preference Shares	Equity Shares
1) Dividend	Preference shareholder gets the preference in getting dividends.	Equity shareholder gets the dividend from the remaining income after paying dividends to preference shares.
2) Share Price	Normally the nominal value if preference shares are more than equity shares.	Nominal value of equity shares is generally less than the preference shares.
3) Repayment of Capital	Preference shareholders get the preference over equity shareholders in the repayment of capital in the case of liquidation.	Equity shareholders are repaid after the payment is made to the preference shareholders in the case of liquidation.
4) Right of Management	Preference shareholders don't have the right to participate in the administration and control of the company.	Equity shareholders have the right to participate and voting power in the management.
5) Dividend Rate	In case of preference share the dividend rate is fixed.	Dividend rate depends on profits. Normally dividend rate of equity shares is higher than preference shareholders.
6) Redemption	Preference share can be redeemed in the mid of the business.	Equity share can not be redeemed. They can be sold.
7) Issue Expense	They need more expenses as compared to equity shares are concerned.	Equity sharer is cheapest as far as issue expenses are concerned.

3.1.1.3 Debentures

Q8. Define Debentures. Explain different types of Debentures.

Ans :

Meaning

A Debenture is a document issued by the company. It is a certificate issued by the company under its seal acknowledging a debt.

Definition

According to the Companies Act 1956, "debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not."

Types of Debentures

Debentures may be divided into the following major types:

1. Unsecured debentures

Unsecured debentures are not given any security on assets of the company. It is also called simple or naked debentures. This type of debentures are traded as unsecured creditors at the time of winding up of the company.

2. Secured debentures

Secured debentures are given security on assets of the company. It is also called as mortgaged debentures because these debentures are given against any mortgage of the assets of the company.

3. Redeemable debentures

These debentures are to be redeemed on the expiry of a certain period. The interest is paid periodically and the initial investment is returned after the fixed maturity period.

4. Irredeemable debentures

These kind of debentures cannot be redeemable during the life time of the business concern.

5. Convertible debentures

Convertible debentures are the debentures whose holders have the option to get them converted wholly or partly into shares. These debentures are usually converted into equity shares. Conversion of the debentures may be:

- Non-convertible debentures
- Fully convertible debentures
- Partly convertible debentures

6. Other types

Debentures can also be classified into the following types. Some of the common types of the debentures are as follows:

- Collateral Debenture
- Guaranteed Debenture
- First Debenture
- Zero Coupon Bond
- Zero Interest Bond/Debenture

Q9. "Debentures occupy a very important place in the financial plan". Discuss the statement.

Ans : **(June-18)**

Features of Debentures

1. Maturity period

Debentures consist of long-term fixed maturity period. Normally, debentures consist of 10–20 years maturity period and are repayable with the principle investment at the end of the maturity period.

2. Residual claims in income

Debenture holders are eligible to get fixed rate of interest at every end of the accounting period. Debenture holders have priority of claim in income of the company over equity and preference shareholders.

3. Residual claims on asset

Debenture holders have priority of claims on Assets of the company over equity and preference shareholders. The Debenture holders may have either specific change on the Assets or floating change of the assets of the company. Specific change of Debenture holders are treated as secured creditors and floating change of Debenture holders are treated as unsecured creditors.

4. No voting rights

Debenture holders are considered as creditors of the company. Hence they have no voting rights. Debenture holders cannot have the control over the performance of the business concern.

5. Fixed rate of interest

Debentures yield fixed rate of interest till the maturity period. Hence the business will not affect the yield of the debenture.

Q10. State the advantages of debenture financing.

Ans :

Debenture is one of the major parts of the long-term sources of finance which of consists the following important advantages:

1. Long-term sources

Debenture is one of the long-term sources of finance to the company. Normally the maturity period is longer than the other sources of finance.

2. Fixed rate of interest

Fixed rate of interest is payable to debenture holders, hence it is most suitable of the companies earn higher profit. Generally, the rate of interest is lower than the other sources of long-term finance.

3. Trade on equity

A company can trade on equity by mixing debentures in its capital structure and thereby increase its earning per share. When the company apply the trade on equity concept, cost of capital will reduce and value of the company will increase.

4. Income tax deduction

Interest payable to debentures can be deducted from the total profit of the company. So it helps to reduce the tax burden of the company.

5. Protection

Various provisions of the debenture trust deed and the guidelines issued by the SEB1 protect the interest of debenture holders.

Q11. Point out the limitations of debenture financing.

(OR)

State the disadvantages of debentures.

Ans : **(June-18, Imp.)**

Debenture finance consists of the following major disadvantages:

1. Fixed rate of interest

Debenture consists of fixed rate of interest payable to securities. Even though the company is unable to earn profit, they have to pay the fixed rate of interest to debenture holders, hence, it is not suitable to those company earnings which fluctuate considerably.

2. No voting rights

Debenture holders do not have any voting rights. Hence, they cannot have the control over the management of the company.

3. Creditors of the company

Debenture holders are merely creditors and not the owners of the company. They do not have any claim in the surplus profits of the company.

4. High risk

Every additional issue of debentures becomes more risky and costly on account of higher expectation of debenture holders. This enhanced financial risk increases the cost of equity capital and the cost of raising finance through debentures which is also high because of high stamp duty.

5. Restrictions of further issues

The company cannot raise further finance through debentures as the debentures are under the part of security of the assets already mortgaged to debenture holders.

Q12. What are the differences between share and debenture.

Ans : **(Imp.)**

The difference between share and debenture are as follows :

	Basis of Difference	Share	Debenture
1.	**Capital vs. Loan**	Share is a part of owned capital	Debenture constitutes a loan
2.	**Reward for Investment**	Reward is the payment of dividend	Reward is the payment of interest
3.	**Fluctuations in the rate of interest and dividend**	The rate of dividend may vary from year to year depending upto the profit decisions of directors and members	The rate of interest is fixed.
4.	**Charge vs. Appropriation**	Payment of dividend is an appropriation out of profits and this cannot be made if there is no profit.	Payment of interest is a charge against profits and is to be made even if there is no profit.
5.	**Payment of Interest/Dividend**	Payment of dividend gets no priority over the payment of interest.	Payment of interest gets priority over the payment of dividend.
6.	**Repayment of Principal**	Payment of share capital is made after the repayment of debentures.	Payment of debentures is made before the payment of share capital.
7.	**Secured by Charge**	Shares are not secured by any charge.	Debentures are usually secured by a charge
8.	**Restriction on Issue**	Sec. 79 imposes certain restriction on issue of shares at discount.	No restriction is imposed on the purchase of debentures by the company.

3.1.1.4 Long term loans

Q13. Explain briefly about Long term loans.

Ans :

Long-term loans refer to those loans that have a longer tenure or repayment period. The repayment period of a loan can range from a year to 30 years. Usually, loans that are paid off in a period of more than 3 years are considered as long-term loans. Most long-term loans are designed in such a way that they can cater to borrowers belonging to different economic segments of the society. They help in resolving diverse financial needs and can be easily repaid in small installments or EMIs without causing any trouble to the borrower. Such loans allow people to enjoy maximum benefits from schemes offered by various public and private sector banks.

Features

Some features of long-term loans are explained here:

1. High Loan Amount

Long-term loans are given for high loan amounts and are mostly secured in nature except for standard personal loans. Hence, banks do not worry much about such loans as they already have collateral that has the same value as the loan amount.

2. Low Rates of Interest

Long-term loans are offered on low interest rates because the borrower has to repay the debt over a long period of time and the banks also make their profits in the form of interest over such long tenure.

3. Repayment and Prepayment Options

Long-term loans come with a number of repayment and prepayment options. Borrowers can pay the EMIs through ECS (Electronic Cancellation System), AD (Auto-Debit), cheque or cash. This makes it easy for the borrowers to repay the loan as per their convenience.

Borrowers have the option of prepaying the loan before the completion of the loan tenure. This way, they can save a lot of money in the form of interest, which they would have to pay otherwise. However, some banks charge a nominal rate of penalty on prepayment but it is much lower than the actual rate of interest.

4. Tax Benefit

Some long-term loans come with tax benefits. Long-term loans such as home loans are eligible to reduce the taxable income under the Income Tax Act. Similarly, business loan repayments can be shown as expenses in the account and help arrive at the actual profit, and thus, reduce the company's tax. However, some loans such as car loans or personal loans are not eligible for such taxation benefits.

5. Requirement of Collateral

Long-term loans require security or collateral except for standard personal loans. This is because the loan amount is usually high and the banks want to ensure that the borrower shares the same amount of risk as them. And they can recover their losses in situation of a default. The presence of a mortgage or a hypothe-cation greatly increases the chances of successful and timely repayment.

3.2 CAPITAL STRUCTURE

3.2.1 Meaning

Q14. Define the term capital structure.

Ans : **(Imp.)**

Introduction

Capital is the major part of all kinds of business activities, which are decided by the size, and nature of the business concern. Capital may be raised with the help of various sources. If the company maintains proper and adequate level of capital, it will earn high profit and they can provide more dividends to its shareholders.

Meaning

Capital structure refers to the kinds of securities and the proportionate amounts that makeup capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings.

The term capital structure refers to the relationship between the various long-term source financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm.

Capital structure is the permanent financing of the company represented primarily by long-term debt and equity.

Definitions

The following definitions clearly initiate, the meaning and objective of the capital structures.

(i) **According to the Gerestenbeg,** "Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources".

(ii) **According to the James C. Van Horne,** "The mix of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity".

(iii) **According to the Prasanna Chandra,** "The composition of a firm's financing consists of equity, preference, and debt".

(iv) **According to the R.H. Wessel,** "The long term sources of fund employed in a business enterprise".

Q15. What are the objectives of capital structure.

Ans :

1. One of the important objective of optimum capital structure is to reduce cost of capital in order to maximise the return of capital utilized. The proportion of debt and equity must be planned in such a way that it minimizes total cost of capital.
2. Every business has different types of risks which directly influence the capital structure of a firm. Hence, a good manager makes necessary adjustments in capital structure to minimize the risk.
3. It is one of the important objective of optimum capital structure to give maximum returns to equity shareholder which is possible by minimising the total cost of capital.
4. The last objective of optimum capital structure is to have control over management. It is possible by maintaining balance between the voting right and non-voting right capital.

Q16. State the Assumptions of capital structure.

Ans :

The following are the assumptions of capital structure,

1. Firms raise funds from only two types of sources that is debt and equity.
2. Corporate income tax and bankruptcy costs does not exist.
3. The firm distributes the entire profits among the shareholders as dividend. Hence, there is no retained earnings.
4. Investment decisions made by the firm are assumed to be constant.
5. Firm estimate that operating profits will not grow over a period of time.
6. The life of the firm is constant, it is not affected by lockouts, strikes etc.
7. Business risk is assumed to be constant and it is not determined by capital structure and financial risks.
8. It is assumed that all investors have a common subjective probability distribution of expected operating profits of the firm.
9. Changes are made in capital structure easily, but total financing remains constant.

3.2.2 Determinants of capital structure

Q17. How do you determine optimum capital structure.

(OR)

Explain the factors that influence capital structure.

Ans : **(Imp.)**

(a) Financial Leverage (or) Trading of Equity

Utilization of preference share capital, equity share capital and long-term debt with fixed interest is called financial leverage. There may be a negative effect of leverage, when desired profits of the firm are less than interest on long-term loans. Hence, it is necessary to plan the capital structure of the firm.

(b) Growth and Stability of Sales

Growth and stability of sales have a great impact on capital structure of a firm. Stability of sales, guarantees that firm is in good condition and will fulfill its promises of payment of interest and repayment of debts. When sales of a firm are assume to be constant then firm can increase its debt. In the same way, growth in sales have impact on capital structure decisions.

(c) Cost of Capital

Cost of capital is the minimum return required by the suppliers of cost. The return desired by the suppliers rely upon the level of risk they undergo'. The capital structure must be such that provides less amount of cost of capital. While designing the capital structure, an attempt should be made to decrease the overall cost of capital.

(d) Cash Flow Ability to Service Debt

A firm which can produce huge and constant cash inflows, can make use of large amount of debt in its capital structure.

(e) Nature and Size of a Firm

Capital structure of a firm will be affected from its nature and size. Capital structure will be different for different companies. Utilization of debt mainly depends on the nature and size of business.

(f) Control

In need of funds, management of the firm try to get funds without sharing its authority over the firm. Management must issue preference shares and debentures, as they do not have any voting rights. Management can also go for debt financing.

(g) Flexibility

Capital structure of a firm must be flexible in nature, so that it can be easily altered to the changing requirements. A firm must plan its capital structure in such a way, that one financing can be replaced with another.

(h) Requirements of Investors

Capital structure is also influenced by requirements of investors. Because every firm needs fund so as to meet their requirements, it is compulsory to satisfy both institutional as well as private investors by meeting their requirements when debt financing is applied.

(i) Capital Market Conditions

Market conditions are not rigid, it may experience depression sometime and sometime experience boom. When share market is facing depression then company must not issue equity shares and when there is boom period in the market it is favourable to issue equity shares.

(j) Assets Structure

While designing the capital structure, the convertibility of assets must be kept in focus. If total assets consist of large number of fixed assets then it is helpful for company to get long term debts.

(k) Purpose of Financing

Financing is the important aspect of business activities. Debt financing is acceptable for firms which require funds for the purpose of production. Equity capital is appropriate in case of general development of the firm.

(*l*) Period of Finance

Period of finance also influence the capital structure. Debentures and shares are suitable in times when finance is needed for limited period. When funds are required for a long period it is preferable to go for equity capital.

Q18. Explain the various theories of capital structure.

Ans : **(Imp.)**

Capital structure is the major part of the firm's financial decision which affects the value of the firm and it leads to change EBIT and market value of the shares. There is a relationship among the capital structure, cost of capital and value of the firm. The aim of effective capital structure is to maximize the value of the firm and to reduce the cost of capital.

There are two major theories explaining the relationship between capital structure, cost of capital and value of the firm.

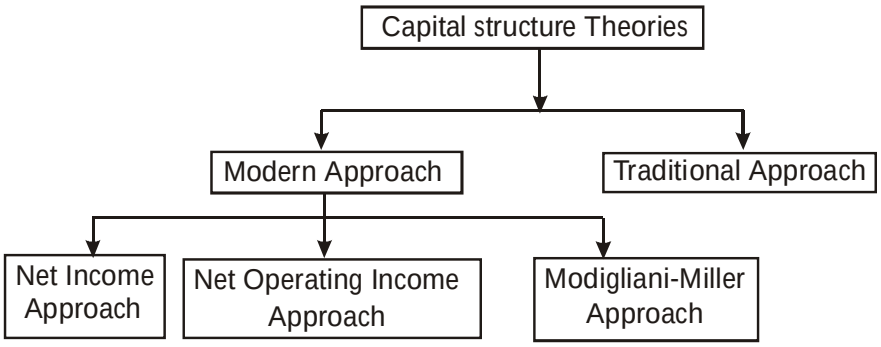


Fig.: Capital Structure Theories

1. Traditional Approach

It is the mix of Net Income approach and Net Operating Income approach. Hence, it is also called as intermediate approach. According to the traditional approach, mix of debt and equity capital can increase the value of the firm by reducing overall cost of capital up to certain level of debt. Traditional approach states that the K_0 decreases only within the responsible limit of financial leverage and when reaching the minimum level, it starts increasing with financial leverage.

Assumptions: Capital structure theories are based on certain assumption to analysis in a single and convenient manner:

- There are only two sources of funds used by a firm; debt and shares.
- The firm pays 100% of its earning as dividend.
- The total assets are given and do not change.
- The total finance remains constant.
- The operating profits (EBIT) are not expected to grow.
- The business risk remains constant.
- The firm has a perpetual life.
- The investors behave rationally.

2. Modern Approaches

(i) Net Income Approach

Net income approach suggested by the Durand. According to this approach, the capital structure decision is relevant to the valuation of the firm. In other words, a change in the capital structure leads to a corresponding change in the overall cost of capital as well as the total value of the firm.

According to this approach, use more debt finance to reduce the overall cost of capital and increase the value of firm.

Net income approach is based on the following three important assumptions:

(a) There are no corporate taxes.

(b) The cost debt is less than the cost of equity.

(c) The use of debt does not change the risk perception of the investor.

Where

V = S + B

V = Value of firm

S = Market value of equity

B = Market value of debt

Market value of the equity can be ascertained by the following formula:

$$S = \frac{NI}{K_e}$$

Where

NI = Earnings available to equity shareholder

K_e = Cost of equity/equity capitalization rate

Format for calculating value of the firm on the basis of NI approach.

Particulars	Amount
Net operating income (EBIT)	XXX
Less: interest on debenture (i)	XXX
Earnings available to equity holder (NI)	XXX
Equity capitalization rate (K_e)	XXX
Market value of equity (S)	XXX
Market value of debt (B)	XXX
Total value of the firm (S + B)	XXX
Overall cost of capital = K_o = EBIT/V(%)	XXX%

(ii) Net Operating Income (NOI) Approach

Another modern theory of capital structure, suggested by Durand. This is just the opposite to the Net Income approach. According to this approach, Capital Structure decision is irrelevant to the valuation of the firm. The market value of the firm is not at all affected by the capital structure changes.

According to this approach, the change in capital structure will not lead to any change in the total value of the firm and market price of shares as well as the overall cost of capital.

NI approach is based on the following important assumptions;

- The overall cost of capital remains constant;
- There are no corporate taxes;
- The market capitalizes the value of the firm as a whole

Value of the firm (V) can be calculated with the help of the following formula

$$V = \frac{EBIT}{K_0}$$

Where,

V = Value of the firm

EBIT = Earnings before interest and tax

K_o = Overall cost of capital

(iii) Modigliani and Miller Approach

Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Modigliani and Miller approach is based on the following important assumptions:

- There is a perfect capital market.
- There are no retained earnings.
- There are no corporate taxes.
- The investors act rationally.
- The dividend payout ratio is 100%.
- The business consists of the same level of business risk.

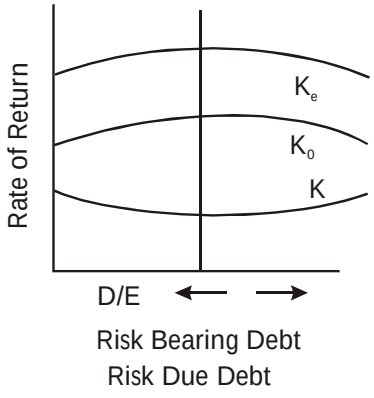


Fig. : Modigliani and Miller Approach

Value of the firm can be calculated with the help of the following formula:

$$\frac{EBIT}{K_0}(1 - t)$$

Where

EBIT = Earnings before interest and tax

K_o = Overall cost of capital

t = Tax rate

3.3 Cost of Capital

Q19. Define Cost of capital.

Ans :

Introduction

Cost of capital is an integral part of investment decision as it is used to measure the worth of investment proposal provided by the business concern. It is used as a discount rate in determining the present value of future cash flows associated with capital projects. Cost of capital is also called as cut-off rate, target rate, hurdle rate and required rate of return.

When the firms are using different sources of finance, the finance manager must take careful decision with regard to the cost of capital; because it is closely associated with the value of the firm and the earning capacity of the firm.

Meaning

Cost of capital is the rate of return that a firm must earn on its project investments to maintain its market value and attract funds.

Cost of capital is the required rate of return on its investments which belongs to equity, debt and retained earnings. If a firm fails to earn return at the expected rate, the market value of the shares will fall and it will result in the reduction of overall wealth of the shareholders.

Definitions

The following important definitions are commonly used to understand the meaning and concept of the cost of capital.

(i) According to the definition of John J. Hampton " Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place".

(ii) According to the definition of Solomon Ezra, "Cost of capital is the minimum required rate of earnings or the cut-off rate of capital expenditure".

(iii) According to the definition of James C. Van Horne, Cost of capital is "A cut-off rate for the allocation of capital to investment of projects. It is the rate of return on a project that will leave unchanged the market price of the stock".

(iv) According to the definition of William and Donaldson, "Cost of capital may be defined as the rate that must be earned on the net proceeds to provide the cost elements of the burden at the time they are due".

Q20. State the assumptions of cost of capital.

Ans :

Assumption of Cost of Capital

Cost of capital is based on certain assumptions which are closely associated while calculating and measuring the cost of capital. It is to be considered that there are three basic concepts:

- It is not a cost as such. It is merely a hurdle rate.
- It is the minimum rate of return.
- It consist of three important risks such as zero risk level, business risk and financial risk.

Cost of capital can be measured with the help of the following equation.

$$K = r_j + b + f$$

Where,

K = Cost of capital.

r_j = The riskless cost of the particular type of finance.

b = The business risk premium.

f = The financial risk premium.

3.3.1 Component costs of capital

Q21. Explain the classification of cost of capital.

Ans :

Classification of Cost of Capital

Cost of capital may be classified into the following types on the basis of nature and usage:

(i) Explicit and Implicit Cost.

(ii) Average and Marginal Cost.

(iii) Historical and Future Cost.

(iv) Specific and Combined Cost.

(i) Explicit and Implicit Cost

The cost of capital may be explicit (or) implicit cost on the basis of the computation of cost of capital.

Explicit cost is the rate that the firm pays to procure financing. This may be calculated with the help of the following equation;

$$CI_0 = \sum_{t=1}^{n} \frac{CO_t}{(t+C)^t}$$

Where,

CI_0 = initial cash inflow

C = outflow in the period concerned

N = duration for which the funds are provided

T = tax rate

Implicit cost is the rate of return associated with the best investment opportunity for the firm and its shareholders that will be forgone if the projects presently under consideration by the firm were accepted.

(ii) Average and Marginal Cost

Average cost of capital is the weighted average cost of each component of capital employed by the company. It considers weighted average cost of all kinds of financing such as equity, debt, retained earnings etc.

Marginal cost is the weighted average cost of new finance raised by the company. It is the additional cost of capital when the company goes for further raising of finance.

(iii) Historical and Future Cost

Historical cost is the cost which as already been incurred for financing a particular project. It is based on the actual cost incurred in the previous project.

Future cost is the expected cost of financing in the proposed project. Expected cost is calculated on the basis of previous experience.

(iv) Specific and Combined Cost

The cost of each sources of capital such as equity, debt, retained earnings and loans is called as specific cost of capital. It is very useful to determine the each and every specific source of capital.

The composite or combined cost of capital is the combination of all sources of capital. It is also called as overall cost of capital. It is used to understand the total cost associated with the total finance of the firm.

Q22. Explain the importance of cost of capital.

Ans :

Computation of cost of capital is a very important part of the financial management to decide the capital structure of the business concern.

(i) Capital Budgeting Decision

Capital budget decision largely depends on the cost of capital of each source. According to net present value method, present value of cash inflow must be more than the present value of cash outflow. Hence, cost of capital is used to capital budgeting decision.

(ii) Structure Decision

Capital structure is the mix or proportion of the different kinds of long term securities. A firm uses particular type of sources if the cost of capital is suitable. Hence, cost of capital helps to take decision regarding structure.

(iii) Evolution of Financial Performance

Cost of capital is one of the important determine which affects the capital budgeting, capital structure and value of the firm. Hence, it helps to evaluate the financial performance of the firm.

(iv) Other Financial Decisions

Apart from the above points, cost of capital is also used in some other areas such as, market value of share, earning capacity of securities etc. hence, it plays a major part in the financial management.

3.3.2 Measurement of cost of capital

Q23. Explain the computation of cost of capital.

(OR)

What are the various steps involved in computation of cost of capital.

Ans :

Computation of cost of capital consists of two important parts:

1. Measurement of specific costs

It refers to the cost of each specific sources of finance like:

- Cost of equity
- Cost of debt
- Cost of preference share
- Cost of retained earnings

2. Measurement of overall cost of capital

3.3.2.1 Measurement of Specific Costs

3.3.2.1.1 Cost of Equity

Q24. How cost of equity is to be calculated?

Ans :

Cost of equity capital is the rate at which investors discount the expected dividends of the firm to determine its share value.

Conceptually the cost of equity capital (K_e) defined as the "Minimum rate of return that a firm

must earn on the equity financed portion of an investment project in order to leave unchanged the market price of the shares".

Cost of equity can be calculated from the following approach:

(i) Dividend price (D/P) approach.

(ii) Dividend price plus growth (D/P + g) approach.

(iii) Earning price (E/P) approach.

(iv) Realized yield approach.

(i) Dividend Price Approach

The cost of equity capital will be that rate of expected dividend which will maintain the present market price of equity shares.

Dividend price approach can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p}$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

N_p = Net proceeds of an equity share

(ii) Dividend price plus growth approach

The cost of equity is calculated on the basis of the expected dividend rate per share plus growth in dividend. It can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p} + g$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

g = Growth in expected dividend

N_p = Net proceeds of an equity share

(iii) Earning Price Approach

Cost of equity determines the market price of the shares. It is based on the future earning prospects of the equity. The formula for calculating the cost of equity according to this approach is as follows.

$$K_e = \frac{E}{N_p}$$

Where,

K_e = Cost of equity capital

E = Earning per share

N_p = Net proceeds of an equity share

(iv) Realized Yield Approach

It is the easy method for calculating cost of equity capital. Under this method, cost of equity

is calculated on the basis of return actually realized by the investor in a company on their equity capital.

$$K_e = PVf \times D$$

Where,

K_e = Cost of equity capital.

PVf = Present value of discount factor.

D = Dividend per share.

3.3.2.1.2 Cost of debt

Q25. How Cost of debt is to be calculated.

Ans : **(May-19)**

Cost of debt is the after tax cost of long-term funds through borrowing. Debt may be issued at par, at premium or at discount and also it may be perpetual or redeemable.

(i) Debt Issued at Par

Debt issued at par means, debt is issued at the face value of the debt. It may be calculated with the help of the following formula.

$$K_d = (1 - t)\, R$$

Where,

K_d = Cost of debt capital

t = Tax rate

R = Debenture interest rate

(ii) Debt Issued at Premium (or) Discount

If the debt is issued at premium or discount, the cost of debt is calculated with the help of the following formula.

$$K_d = \frac{I}{N_p}(1-t)$$

Where,

K_d = Cost of debt capital

I = Annual interest payable

N_p = Net proceeds of debenture

t = Tax rate

(iii) Cost of Perpetual Debt and Redeemable Debt

It is the rate of return which the lenders expect. The debt carries a certain rate of interest.

$$K_{db} = \frac{I + 1/n(P - N_p)n}{1/n(P + N_p)/2}$$

Where,

I = Annual interest payable

P = Par value of debt

N_p = Net proceeds of the debenture

n = Number of years to maturity

K_{db} = Cost of debt before tax.

Cost of debt after tax can be calculated with the help of the following formula:

$$K_{daq} = K_{db} \times (1-t)$$

Where,

K_{da} = Cost of debt after tax

K_{db} = Cost of debt before tax

t = Tax rate

3.3.2.1.3 Cost of Preference Share

Q26. How to calculate cost of preference share.

Ans :

Cost of preference share capital is the annual preference share dividend by the net proceeds from the sale of preference share.

There are two types of preference shares irredeemable and redeemable. Cost of redeemable preference share capital is calculated with the help of the following formula:

$$K_p = \frac{D_p}{N_p}$$

Where,

K_p = Cost of preference share

D_p = Fixed preference dividend

N_p = Net proceeds of an equity share

Cost of irredeemable preference share is calculated with the help of the following formula:

$$K_p = \frac{D_p + (P - N_p)/n}{(P + N_p)/2}$$

Where,

K_p = Cost of preference share

D_p = Fixed preference share

P = Par value of debt

N_p = Net proceeds of the preference share

n = Number of maturity period.

3.3.2.1.4 Cost of retained earnings

Q27. How do you measure the cost of retained earnings.

Ans :

Retained earnings is one of the sources of finance for investment proposal; it is different from other sources like debt, equity and preference shares. Cost of retained earnings is the same as the cost of

an equivalent fully subscripted issue of additional shares, which is measured by the cost of equity capital. Cost of retained earnings can be calculated with the help of the following formula:

$$K_r = K_e(1-t)(1-b)$$

Where,

K_r = Cost of retained earnings

K_e = Cost of equity

t = Tax rate

b = Brokerage cost

PROBLEMS

1. A company issues 10,000 equity shares of Rs. 100 each at a premium of 10%. The company has been paying 25% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it make any difference if the market price of equity share is Rs. 175?

Sol :

D = 25

N_p = 100

$$K_e = \frac{D}{N_p}$$

$$= \frac{25}{100} \times 100$$

= 25%

If the market price of a equity share is Rs. 175

$$K_e = \frac{D}{N_p}$$

$$= \frac{25}{175} \times 100$$

= 14.28%

2. (a) A company plans to issue 10000 new shares of Rs. 100 each at a par. The floatation costs are expected to be 4% of the share price. The company pays a dividend of Rs. 12 per share initially and growth in dividends is expected to be 5%. Compute the cost of new issue of equity shares.

(b) If the current market price of an equity share is Rs. 120. Calculate the cost of existing equity share capital.

Sol :

(a) D = `12

N_p = 96 (100 – 4)

g = 5%

$$K_e = \frac{D}{N_p} + g$$

$$= \frac{12}{100-4} + 5\%$$

$$= \frac{12}{96} \times 100 + 5$$

= 0.125 × 100 + 5

= 12.5 + 5

= 17.5%

(b) D = `12

N_p = 120

g = 5%

$$K_e = \frac{D}{N_p} + g$$

$$= \frac{12}{120} + 5\%$$

= 0.1 × 100 + 5

= 10 + 5

= 15%

3. The current market price of the shares of A Ltd. is Rs. 95. The floatation costs are Rs. 5 per share amounts to Rs. 4.50 and is expected to grow at a rate of 7%. You are required to calculate the cost of equity share capital.

Sol :

Market price = Rs. 95

Dividend = Rs. 4.50

Growth rate = 7%

$$K_e = \frac{D}{N_p} + g$$

$$= \frac{4.50}{95} \times 100 + 7\%$$

$$= 4.73 + 7\% = 11.73\%$$

---

4. A firm is considering an expenditure of Rs.75 lakhs for expanding its operations.

The relevant information is as follows :

Number of existing equity shares = 10 lakhs

Market value of existing share = Rs.100

Net earnings = Rs.100 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 92 per share and the costs of new issue will be Rs. 2 per share.

Sol : **(Imp.)**

Cost of existing equity share capital

$$K_e = \frac{E}{N_p}$$

$$\text{Earnings Per Share (EPS)} = \frac{100 \text{ lakhs}}{10 \text{lakhs}}$$

$$= \text{Rs.}10$$

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

$$= 10\%$$

Cost of Equity Capital

$$K_e = \frac{E}{N_p}$$

$$= \frac{10}{92 - 2} \times 100$$

$$= \frac{10}{90} \times 100$$

$$= 11.11\%$$

---

5. (a) A Ltd. issues Rs. 1,00,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

(b) B Ltd. issues Rs. 1,00,000, 8% debentures at a premium of 10%. The tax rate applicable to the company is 60%. Compute the cost of debt capital.

(c) A Ltd. issues Rs. 1,00,000, 8% debentures at a discount of 5%. The tax rate is 60%, compute the cost of debt capital.

Sol : **(Imp.)**

(a) $K_{da} = \frac{I}{N_p}(1 - t)$

$$I = 1{,}00{,}000 \times \frac{8}{100} = 8{,}000$$

$N_p = 1{,}00{,}000$

t = 50% (or) 0.5

$$= \frac{8{,}000}{1{,}00{,}000} \times (1 - 0.5)$$

$$= \frac{8{,}000}{1{,}00{,}000} \times 0.5$$

$$= 0.08 \times 50\%$$

$$= 4\%$$

(b) $K_{da} = \frac{I}{N_p}(1 - t)$

$I = 1,00,000 \times \frac{8}{100} = 8,000$

$t = 60\%$ (or) 0.6

N_p = Face Value + Premium

$= 1,00,000 + 10,000 = 1,10,000$

$= \frac{8,000}{1,10,000} \times (1 - 0.6)$

$= \frac{8,000}{1,10,000} \times 0.4$

$= 2.91\ \%$

(c) $K_{da} = \frac{I}{N_p}(1 - t)$

$I = 1,00,000 \times \frac{8}{100} = 8,000$

N_p = Face value – Discount

$= 1,00,000 - 5,000 = 95,000$

$t = 60\%$ (or) 0.6

$= \frac{8,000}{95,000} \times (1 - 0.6)$

$= \frac{8,000}{95,000} \times 0.4$

$= 3.37\%$

6. A company issues Rs. 20,00,000, 10% redeemable debentures at a discount of 5%. The costs of floatation amount to Rs. 50,000. The debentures are redeemable after 8 years. Calculate before tax and after tax. Cost of debt assuring a tax rate of 55%.

Sol :

$$K_{db} = \frac{I + 1/n(P - N_p)}{1/2(P + N_p)}$$

$I = 20,00,000 \times \frac{10}{100} = 2,00,000$

$n = 8$ years

$P = 20,00,000$

$N_p = 20,00,000 - 1,00,000 - 50,000$

$= 18,50,000$

$$= \frac{2,00,000 + 1/8(20,00,000 - 18,50,000)}{1/2(20,00,000 + 18,50,000)}$$

$$= \frac{2,00,000 + 1/8(1,50,000)}{1/2(38,50,000)}$$

$$= \frac{2,00,000 + 18750}{19,25,000}$$

$= 11.36\%$

After Tax Cost of Debt K_{db}

$= K_{db}(1 - t)$

$= 11.36\ (1 - 0.55)$

$= 11.36\ (0.45)$

$= 5.11\%$

7. XYZ Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Cost of issue is Rs. 2 per share. Calculate cost of preference share capital if these shares are issued (a) at par, (b) at a premium of 10% and (c) at a debentures of 6%.

Sol :

Calculation of share capital

$20,000 \times 100 = 20,00,000$

Calculation of dividend

$20,00,000 \times \frac{8}{100} = 1,60,000$

(a) At par

Cost of preference share capital $K_p = \frac{D_p}{N_p}$

$K_p = \frac{1,60,000}{20,00,000 - 40,000} \times 100$

$\frac{1,60,000}{19,60,000} \times 100 = 8.16\%$

(b) At premium of 10%

$$20,00,000 \times \frac{10}{100} = 2,00,000$$

$$K_p = \frac{1,60,000}{20,00,000 + 2,00,000 - 40,000} \times 100$$

$$= \frac{1,60,000}{22,00,000 - 40,000} \times 100$$

$$= \frac{1,60,000}{21,60,000} \times 100$$

$$= 7.40\%$$

(c) At a debenture of 6%

$$20,00,000 \times \frac{6}{100} = 1,20,000$$

$$K_p = \frac{1,60,000}{20,00,000 - 1,20,000 - 40,000} \times 100$$

$$= \frac{1,60,000}{18,40,000} \times 100$$

$$= 8.69\%$$

8. ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Redeemable after 8 years at a premium of 10%. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital.

Sol :

$$\boxed{K_p = \frac{D_p + (P - N_p)/n}{(P + N_p)/2}}$$

Calculation of preference share capital

$$20,000 \times 100 = 20,00,000$$

Calculation of dividend

$$20,00,000 \times \frac{8}{100} = 1,60,000$$

D_p = 1,60,000

P = 20,00,000 + 2,00,000 (20,00,000 × 10%)

= 22,00,000

N_p = 20,00,000 – 40,000 (20,000 × 2)

= 19,60,000

n = 8 Years

$$= \frac{1,60,000 + 1/8(22,00,000 - 19,60,000)}{1/2(22,00,000 + 19,60,000)}$$

$$= \frac{1,60,000 + 30,000}{20,80,000}$$

$$= \frac{1,90,000}{20,80,000}$$

= 9.13%

9. ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each at a premium of 5% redeemable after 8 years at par. The cost of issue is Rs. 2 par share. Calculate the cost of preference share capital.

Sol :

$$\boxed{K_p = \frac{D_p + (P - N_p)/n}{(P + N_p)/2}}$$

Calculation of preference share capital

$$20,000 \times 100 = 20,00,000$$

Calculation of dividend

$$20,00,000 \times \frac{8}{100} = 1,60,000$$

D_p = 1,60,000

P = 20,00,000

N_p = 20,00,000 + 1,00,000 – 40,000 (20,000 × 2)

= 20,60,000

n = 8 Years

$$= \frac{1,60,000 + 1/8(20,00,000 - 20,60,000)}{1/2(20,00,000 + 20,60,000)}$$

$$= \frac{1,60,000 - 7,500}{20,30,000}$$

$$= \frac{1,52,500}{20,30,000}$$

= 7.51%

10. A firm's K_e (return available to shareholders) is 10%, the average tax rate of shareholders is 50% and it is expected that 2% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings ?

Sol :

Cost of Retained Earnings,

$$K_r = K_e (1 - t) (1 - b)$$

Where,

K_e = rate of return available to shareholders

t = tax rate

b = brokerage cost

So, K_r = 10% (1 – 0.5) (1 – 0.02)

= 10% × 0.5 × 0.98

= 4.9%

3.3.2.2 Measurement of overall cost of capital - weighted average cost of capital

Q28. What is weighted average cost of capital. Explain the various steps to calculate weighted average cost of capital.

Ans :

The average cost of the costs of several means of financing, is known as weighted average cost of capital. It can also be termed as overall cost of capital, composite cost of capital or average cost of capital.

Weighted average cost of capital can be easily evaluated, if cost of a particular source of finance is evaluated.

WACC can be computed as follows,

$$WACC = w_e k_e + w_d k_d + w_p k_p$$

Where,

w_e = Proportion of equity capital

w_d = Proportion of debt capital

w_p = Proportion of preference capital

k_e = Cost of equity capital

k_d = Cost of debt after tax

k_p = Cost of preference capital.

Following steps are involved in evaluation process of weighted average cost of capital :

- Assigning weights to individual costs.
- Multiplying the cost of each of the sources by the appropriate weights.
- Dividing the total weighted cost by the total weights.

Alternatively, weighted average cost of capital can be assessed as follows,

$$k_w = \frac{\Sigma XN}{\Sigma W}$$

Where,

k_W = Weighted average cost of capital

X = Cost of individual source of finance

W = Weight, proportion of specific source of finance.

Assignment of Weights

The weights used in evaluation of overall cost of capital are,

(a) Marginal weights method and

(b) Historical weights method

(a) Marginal Weights Method

In case of this method, weights are assigned to each source of funds, in proportions of financing inputs that the firm aims to raise. The method is based on capital and not with capital raised in the past. In case, the weights are applied in a ratio different from the ratio in which the new capital is to be raised, the WACC calculated may be different from the actual cost of capital. This may lead to wrong capital investment decisions.

The marginal weighting system consists some weak points. One of the major drawback in usage of marginal weights is that it does not evaluate the long-term results of

current financing of the firm. A firm must give due attention to long-term implications while designing the firm's financing strategy.

Example

A firm may accept a project giving an after-tax return of 6% because it intends to raise the funds required by issue of debentures having an after-tax cost of 5%. In case next year, the firm intends to raise funds by issue of equity shares having a cost of 9%, it will have to reject the project which gives a return of only 8%. Thus, marginal weighting method does not consider the fact that today's financing tomorrow's cost.

(b) Historical Weights Method

Several sources of the prevailing capital structure are taken in comparative proportion to assign weights in historical weights method. This method is based on the funds which were already raised by the firm. The application of historical weights is based on belief that prevailing capital structure of the firm is optimal and it must be continued in future also. Weights under historical system will be either book value weights or market value weights. Book values are operationally suitable and market values are based on theoretical consistency.

Use of historical weights suffer from some practical difficulties and also include the problem of choice between book value and market value weights.

Q29. State the merits and demerits of weighted average cost of capital (WACC).

Ans :

Merits

1. In case of determination of future project profitability, WACC is treated as cut off rate.
2. If firm earn more percentage of profit than WACC, therefore the market value of the firm will increased. Profit taken or not decision is depending on this point. A project considered valuable only if the return from it is higher than WACC.
3. Business unit used different source of finance and invested in the project. So individual cost of capital is not enough for project selection process. Therefore overall cost of capital is considered for project selection process.
4. WACC is widely used to selection project among the option available.
5. WACC is useful in making Economic value Added (EVA) calculation.
6. WACC indicate the minimum rate of return at which business unit create the investors value. If return on capital employed (ROCE) is higher than WACC, business unit will create the investors value, otherwise business unit will fail to create the investors Value.

Demerits

The disadvantages of weighted average cost of capital are as follows:

1. Determining the Weights

The first & foremost difficulty in computing the average cost is to assign weights to different components of capital structure.

2. Choice of Capital Structure

The choice of capital structure is to be used for determining the average is not an easy job. These types of capital structure are these, i.e., current capital structure, marginal capital structure or optimum capital structure. Generally current capital structure is regarded as the optimum capital structure but it is not always correct.

3. Other Limitations:

(i) Average cost of capital can't be used in following circumstances

(a) When the company is trying to bring about radical changes in its debt policy.

(b) When the dividend policy of the company is being changed.

(c) When the growth objective of the company are being changed.

(d) When there is a change in capital structure involving a change in debt equity mix.

(ii) It is presumed that the cost of raising funds is in dependent to the value funds raised. The presumption does not hold well in practices.

(iii) The specific costs are based upon the existing capital structure and these will change when additional funds have been raised. A firm cannot measure its cost directly on additional capital, it can only be estimated. If additional financing capital structure changes the effective rate of capital will also change.

PROBLEMS

11. Your given the capital structure of XY company calculate weight average cost of capital

Source of fund	Amount	Cost
Equity share capital	**4,00,000**	**14**
Retained Earnings	**2,00,000**	**13**
Preference capital	**1,00,000**	**12**
Debt	**3,00,000**	**9**
Cost of Capital	**10,00,000**	

Sol. :

A Statement showing weighted average cost of capital

1 Sources of Fund	2 Amount	3 Proportion	4 Cost of Capital	5 WACC (3×4)
Equity	4,00,000	0.4	14	5.6
Retained earnings	2,00,000	0.2	13	2.6
Preference capital	1,00,000	0.1	12	1.2
Debt.	3,00,000	0.3	9	2.7
Cost of Capital	10,00,000			12.1

∴ Overall cost of capital = 12.1

12. The following is the capital structure of "X" limited Co.,

Particulars	Book Value	Market Value
Debentures	**300,000**	**3.00,000**
Preference capital	**200,000**	**2.00,000**
Equity share capital	**400,000**	**5,60,000**
Retained earnings	**100,000**	**1,40,000**

After tax cost of capital are as follows :

Cost of debt. = 4.77%

Cost of preference = 10.53%

Cost of equity = 14.59%

Cost of Retained = 14%

Calculate average cost of capital using

(a) Book Value (b) Market Value

Sol : **(Imp.)**

Book Value

1 Source of Fund	2 Amount	3 Proportion	4 Cost of Capital	5 WACC (3 × 4)
Debentures	3,00,000	0.3	4.77 %	1.431
Pref. share capital	2,00,000	0.2	10.53 %	2.106
Equity share capital	4,00,000	0.4	14.59 %	5.836
Retained earnings	1,00,000	0.1	14 %	1.400
Total cost of capital	10,00,000			10.773

Overall Cost of Capital = 10.773%

Market Value

1 Source of Fund	2 Amount	3 Proportion	4 Cost of	5 WACC (3 × 4)
Debentures	300,000	0.25	4.77 %	1.1925
Pref. share capital	200,000	0.17	10.53 %	1.7901
Equity share capital	5,60,000	0.47	14.59 %	6.8573
Retained Earning	1,40,000	0.12	14 %	1.6800
Total Cost of Capital	12,00,000			11.5199

Overall cost of capital = 11.5199%

13. A company has on its books the following amounts and specific costs of each type of capital.

Type of Capital	Book Value Rs.	Market Value Rs.	Specific Costs (%)
Debt	**4,00,000**	**3,80,000**	**5**
Preference	**1,00,000**	**1,10,000**	**8**
Equity	**6,00,000**	**9,00,000**	**15**
Retained Earnings	**2,00,000**	**3,00,000**	**13**
	13,00,000	**16,90,000**	

Determine the weighted average cost of capital using :

(a) Book value weights, and

(b) Market value weights

How are they different ? Can you think of a situation where the weighted average cost of capital would be the same using either of the weights ?

Sol : **(Imp.)**

Computation of Weighted Average Cost of Capital

A. Book Value

Source of Funds	Amount	Cost % (X)	Weighted Cost Proportion X Cost (XW)
Debt	4,00,000	5	20,000
Preference Shares	1,00,000	8	8,000
Equity Shares	6,00,000	15	90,000
Retained Earnings	2,00,000	13	26,000
	ΣW = 13,00,000		ΣXW = 1,44,000

$$K_w = \frac{\Sigma XW}{\Sigma W}$$

$$K_w = \frac{1,44,000}{13,00,000} \times 100 = 11.1\%$$

Computation Weighted Average Cost of Capital

B. Market Value

Source of Funds	Amount	Cost % (X)	Weighted Cost Proportion X Cost (XW)
Debt	3,80,000	5	19,000
Preference Shares	1,10,000	8	8,800
Equity Shares	9,00,000	15	13,500
Retained Earnings	3,00,000	13	39,000
	ΣW = 16,90,000		ΣXW = 2,01,800

$$K_w = \frac{\Sigma XW}{\Sigma W}$$

$$K_w = \frac{2,01,800}{16,90,000} \times 100 = 11.9\%$$

3.4 Dividend Policy Decision

Q30. Define Dividend.

Ans :

Introduction

The financial manager must take careful decisions on how the profit should be distributed among shareholders. It is very important and crucial part of the business concern, because these decisions are

directly related with the value of the business concern and shareholder's wealth. Like financing decision and investment decision, dividend decision is also a major part of the financial manager. When the business concerns decide dividend policy, they have to consider certain factors such as retained earnings and the nature of shareholder of the business concern.

Meaning

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders.

Definition

According to the Institute of Chartered Accountant of India, dividend is defined as "a distribution to shareholders out of profits or reserves available for this purpose".

3.4.1 Types of Dividend

Q31. Explain different types of dividend.

(OR)

State the classification of dividend.

Ans : **(Imp.)**

Types

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, Dividends are classified into:

(i) Cash Dividend

(ii) Bond Dividend

(iii) Stock Dividend

(iv) Property Dividend

(v) Scrip Dividend

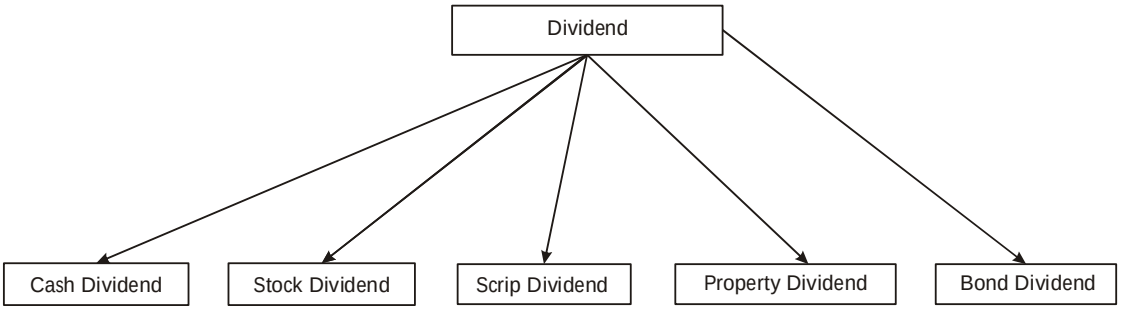


Fig. : Types of Dividend

(i) Cash dividend

Cash dividend is, by far, the most important form of dividend. In cash dividends stock holders receive cheques for the amounts due to them. Cash generated by business earnings is used to pay cash dividends. Sometimes the firm may issue additional stock to use proceeds so derived to pay cash dividends or approach bank for the purpose. Generally, stockholders have strong preference for cash dividends.

(ii) Stock dividend

Stock dividends rank next to cash dividends in respect of their popularity. In this form of dividends, the firm issues additional shares of its own stock to the stockholders in proportion to the number of shares held in lieu of cash dividends. The payment of stock dividends neither affects cash and earnings position of the firm nor is ownership of stockholders changed. Indeed there will be transfer of the amount of dividend from surplus account to the capital stock account which tantamount to capitalization of retained earnings. The net effect of this would be an increase in number of shares of the current stockholders. But there will be no change in their equity. With payment of stock dividends the stockholders have simply more shares of stock to represent the same interest as it was before issuing stock dividends. Thus, there will be merely an adjustment in the firm's capital structure in terms of both book value and market price of the common stock.

(iii) Scrip Dividend

Scrip dividend means payment of dividend in scrip of promissory notes. Sometimes company needs cash generated by business earnings to meet business requirements because of temporary shortage of cash. In such cases the company may issue scrip or notes promising to pay dividend at a future date. The scrip usually bears a definite date of maturity or sometimes maturity date is not stipulated and its payment is left to the discretion of the Board of Directors. Scrips may be interest-bearing or non-interest bearing. Such dividends are relatively scarce.

(iv) Property dividend

In property dividend the company pays dividends in the form of assets other than cash. Generally, assets which are superfluous for the company are distributed as dividends to the stockholders. Sometimes the company may use its products to pay dividends. Securities of the subsidiary companies owned by the company may also take the form of property dividends. This kind of dividend payment is not in vogue in India.

(v) Bond dividend

As in scrip dividends, dividends are not paid immediately in bond dividends. Instead the company promises to pay dividends at a future date and to that effect bonds are issued to stock holders in place of cash. The purpose of both the bond and scrip dividends is alike, i.e., postponement of dividend payments. Difference between the two is in respect of the date of payment and their effect is the same. Both result in lessening of surplus and addition to the liability of the firm. The only difference between bond and scrip dividends is that the former carries longer maturity than the latter. Bond dividends are not popular in India.

3.4.2 Determinants of dividend policy

Q32. Explain the factors determining dividend policy.

Ans : **(Imp.)**

1. Legal Restrictions

In deciding on the dividend, the directors take the legal requirements too into consideration. In order to protect the interests of creditors an outsiders, the companies Act 1956 prescribes certain guidelines in respect of the distribution and payment of dividend. Moreover, a company is required to provide for depreciation on its fixed and tangible assets before declaring dividend on shares. It proposes that Dividend should not be distributed out of capita, in any case. Likewise, contractual obligation should also be fulfilled, for example, payment of dividend on preference shares in priority over ordinary dividend.

2. Size of the Earnings

Practically and truly speaking, the upper ceiling on dividend is dictated by the earnings of the business. If the amount and the nature of earnings are relatively stable a firm is better able to predict what its future earnings will be and is, therefore, more likely to pay-out a higher percentage of profits. A rational

dividend policy should take into account both the amount and nature of earnings from year to year.

3. Investment Opportunities and Shareholder's Preferences

Management should adopt a dividend policy which strikes a balance between the shareholder's preference for dividends and financing investment opportunities with retained profits. Having a large number of profitable projects in hand, a company should give preference to the retention of earnings over the payment of dividends. The preference of shareholders for dividends and capital gains needs to be paid full heed. To a great extent the preference for dividends or capital gain is determined by the economic status of the shareholders and the tax bracket to which he belongs. The capital gains tax rate is generally lower than the dividend tax rate. As against current dividends a financially better-off shareholder in a high income tax bracket may be interested in capital gains. A prudent dividend policy should take full care of these aspects.

4. Liquidity Position

Because the payment of dividends involves outflow of cash from the business, the dividend policy must take into account the liquidity position of the firm. Even if a firm has had a good record of earnings, it may not be able to pay cash dividends due to its liquidity position. Even a very profitable business has a pressing need for funds. Hence a firm may elect not to pay cash dividends.

5. Management's Attitude towards Control

As a matter of policy, some companies expand only to the extent of their internal earnings. This is justified on the ground that raising funds by selling additional shares .would dilute the control of the company. Selling debentures will increase the risks of fluctuating earnings to the detriment of the present members of the company. The management's attitude towards control would reduce the dividend pay-out and increase reliance on internal financing.

6. State of Capital Market and Access to it

The corporate management may be tempted to follow a liberal policy if the fund position in the capital market of the country is comfortable and the firm can take recourse to it due to its good earnings position. If the capital market funds position is comfortable but the firm has no access to it due to high cost of capital it would compel the company to rely on retained earnings and follow a conservative dividend policy.

7. Contractual Restrictions

Sometimes a firm's ability to pay cash dividends is restricted by certain specific conditions in loan agreements. When the finances are raised from external sources, creditors may impose various restrictions to immunize themselves for possible insolvency of the firm. While formulating the dividends policy, the financial manager must keep in mind various contractual requirements. The creditors may withdraw their money from the firm if these requirements are violated.

8. Profit Rate and Stability of Earnings

A firm with a large rate of return on its investment will have larger profits. It can pay more dividends to its shareholders as compared to a firm with lesser return. Again, if the earnings are relatively stable and do not fluctuate from time to time, a firm can predict its future earnings and pay a higher rate of dividend than a firm with fluctuating earnings. An unstable firm cannot determine what will be its actual future earnings. Therefore, to meet adverse future conditions, it is likely to plough back more profits.

9. Inflation

It increases the replacement cost of assets which are being depreciated every year at the book value. Funds generated from providing depreciation may be insufficient to meet the rising cost of assets which might become obsolete and have to be replaced in future. Therefore the management should reduce the rate of dividend during a period of inflation to maintain the earning power of the firm.

To conclude, every firm should establish a general policy about the payment of dividends. An appropriate dividend policy can be shaped by a multiplicity of considerations. The financial manager should bring about a balance among various factors.

Q33. Explain briefly about dividend decisions.

Ans :

Dividend decision of the business concern is one of the crucial parts of the financial manager, because it determines the amount of profit to be distributed among shareholders and amount of profit to be treated as retained earnings for financing its long term growth. Hence, dividend decision plays very important part in the financial management.

Dividend decision consists of two important concepts which are based on the relationship between dividend decision and value of the firm.

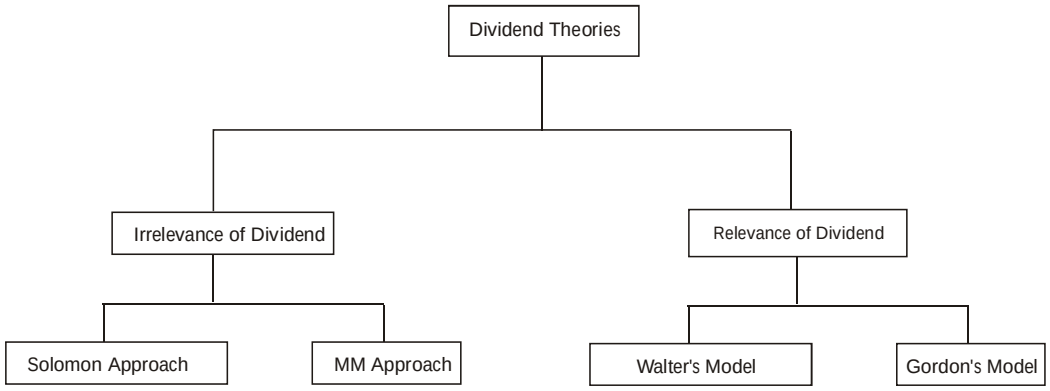


Fig. : Dividend Theories

Q34. Explain irrelevance theory of dividend.

(OR)

Explain Modigliani and Miller's hypothesis of dividend irrelevance theory.

Ans :

Irrelevance of Dividend

According to professors Soloman, Modigliani and Miller, dividend policy has no effect on the share price of the company. There is no relation between the dividend rate and value of the firm. Dividend decision is irrelevant of the value of the firm. Modigliani and Miller contributed a major approach to prove the irrelevance dividend concept.

Modigliani and Miller's Approach

According to MM, under a perfect market condition, the dividend policy of the company is irrelevant and it does not affect the value of the firm.

"Under conditions of perfect market, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of shares".

Assumptions

MM's hypothesis of irrelevance is based on the following assumptions :

(i) Perfect Capital Markets : The firm operates in perfect capital markets where investors behave rationally, information is freely available to all and transactions and floatation costs do not exist. Perfect capital markets also imply that no investor is large enough to affect the market price of a share.

(ii) No Taxes : Taxes do not exist or there are no differences in the tax rates applicable to capital gains and dividends. This means that investors value a rupee of dividend as much as a rupee of capital gains.

(iii) Investment Policy Given : The firm has a fixed investment policy.

(iv) No Risk : Risk of uncertainty does not exist.

Proof for MM approach

MM approach can be proved with the help of the following formula:

$$P_0 = \frac{D_1 + P_1}{(1 + K_e)}$$

Where,

P_o = Prevailing market price of a share.

K_e = Cost of equity capital.

D_1 = Dividend to be received at the end of period one.

P_1 = Market price of the share at the end of period one.

P_1 can be calculated with the help of the following formula.

$$P_1 = P_o (1 + K_e) - D_1$$

The number of new shares to be issued can be determined by the following formula:

$$M \times P_1 = I - (X - nD_1)$$

Where,

M = Number of new share to be issued.

P_1 = Price at which new issue is to be made.

I = Amount of investment required.

X = Total net profit of the firm during the period.

nD_1 = Total dividend paid during the period.

Q35. Explain the criticism of MM approach.

Ans :

Criticism of MM approach

The MM approach has been criticised on the following basis:

1. Tax Differentials

MM's assumption that taxes does not exist is far from reality. Dividends are not taxed whereas tax is levied on capital gains. So the shareholders may prefer dividend to capital gains.

2. Floatation Cost

MM argue that payment of dividend and raising external funds are equivalent. This is not true in practice due to the presence of floatation costs. So a rupee of dividend cannot be replaced by a rupee by external funds. So it is advantageous to retain the earnings.

3. Transaction Costs

In the absence of transition cost a rupee of capital value can be converted into a rupee of current income and *vice verse.* This implies that if the dividends are not paid, the shareholders desiring current income can sell a part of their holdings without incurring transaction cost. Because of the presence of the transaction cost, investors may prefer current dividend than retained earnings.

4. Diversification

If the company retains the earnings, investors cannot diversify their portfolios. As the investors are willing to pay a higher value to the company which pays more current dividend.

5. Uncertainty

MM argues that the prices of the two firms which are exactly identical in all the respect - except with the dividend policy - cannot be different. But this is not true due jo "bird in hand argument".

6. Informational Content of Dividend (Financial Signalling)

According to this argument dividends contain some information vital to the investors. The payment of dividends conveys the information from the managers to the shareholders about the prospects and profitability of the company. When the company changes its dividend policy, investor will assume that it is in response to the expected changes in the firms' profitability which will last long. An increase in the payout ratio implies a permanent increase in the firms expected earnings and vice versa. So dividend policy becomes relevant because of informational value.

PROBLEMS ON MM HYPOTHESIS

14. X Company Ltd., has 100000 shares outstanding the current market price of the shares Rs. 15 each. The company expects the net profit of Rs. 2,00,000 during the year and it belongs to a rich class for which the appropriate capitalisation rate has been estimated to be 20%. The company is considering dividend of Rs. 2.50 per share for the current year.

What will be the price of the share at the end of the year (i) if the dividend is paid and (ii) if the dividend is not paid.

Sol :

$$P_0 = \frac{D_1 + P_1}{(1 + K_e)}$$

(i) **If the dividend is paid**

P_o = Rs. 15

K_e = 20%

D_1 = 2.50

P_1 = ?

$$15 = \frac{2.50 + P_1}{1 + 20\%}$$

$$15 = \frac{2.50 + P_1}{1.2}$$

$2.50 + P_1 = 15 \times 1.2$

$P_1 = 18 - 2.50$

P_1 = Rs. 15.50

(ii) **If the dividend is not paid**

$P_o = 15$

K_e = 20%

$D_1 = 0$

P_1 = ?

$$15 = \frac{0 + P_1}{1 + 20\%}$$

$$15 = \frac{0 + P_1}{1.20}$$

$0 + P_1 = 15 \times 1.20$

P_1 = Rs. 18

15. Ram company belongs to a risk class for which the appropriate capitalization rate is 12%. It currently has outstanding 30000 shares selling at Rs. 100 each. The firm is contemplating the declaration of dividend of Rs. 6 per share at the end of the current financial year. The company expects to have a net income of Rs. 3,00,000 and a proposal for making new investments of Rs. 6,00,000. Show that under the MM assumptions, the payment of dividend does not affect the value of the firm. How many new shares issued and what is the market value at the end of the year?

Sol :

(i) If Dividend is Paid

$$P_o = \frac{D_1 + P_1}{1 + K_e}$$

$P_0 = 100$

D_1 = Rs. 6

P_1 = ?

K_e = 12%

$$100 = \frac{6 + P_1}{1 + 127}$$

$$100 = \frac{6 + P_1}{1.12}$$

$6 + P_1 = 112$

$P_1 = 112 - 6$

P_1 = Rs. 106

(ii) Dividend is not declared

$$P_o = \frac{D_1 + P_1}{1 + K_e}$$

K_e = 12%, P_0 = 100, D_1 = 0, P_1 = ?

$$100 = \frac{0 + P_1}{1 + 12\%}$$

$$100 = \frac{0 + P_1}{1.12}$$

P_1 = Rs.112

Calculation of number of new shares to be issued

Particulars	Dividends Paid	Dividends not paid
Net Income	300000	300000
Total Dividends	180000	–
Retained Earnings	120000	300000
Investment Budget	600000	600000
New shares	480000	300000
(Investment - Retained Earnings)		
Relevant - Market Price		
Per share	Rs. 106	Rs.112
No. of new shares to be issued	4528.3	2678.6
Total number of shares at the		
end of the year	30,000	30,000
Existing shares	4528.3	2678.6
(+) new shares issued	34528.3	32678.6
Market price per share	**Rs. 106**	**112**
Market value for shares	**Rs. 3,66,0000**	**3,66,0000**

There is no change in the total market value of shares whether dividends are distributed or not distributed.

Q36. Explain briefly about Walter's model.

Ans :

Walter's Model

Prof. James E. Walter argues that the dividend policy almost always affects the value of the firm.

Walter model is based in the relationship between the following important factors:

- Rate of return (I)
- Cost of capital (k)

According to the Walter's model. If r < k, the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of r > k is that the shareholders can earn a higher return by investing elsewhere.

If the firm has r = k, it is a matter of indifferent whether earnings are retained or distributed.

Assumptions

Walter's model is based on the following assumptions :

1. **Internal Financing :** The firm finances all investment through retained earnings; that is, debt or new equity is not issued.
2. **Constant Return and Cost of Capital :** The firm's rate of return, r, and its cost of capital, k is constant.
3. **100 Percent Payout or Retention :** All earnings are either distributed as dividends or reinvested internally immediately.
4. **Constant EPS and DPS:** Beginning earnings and dividends never change. The value of the earnings per share, EPS, and the dividend per share, DPS, may be changed in the model to determine results, but any given values of EPS or DPS are assumed to remain constant forever in determining a given value.
5. **Infinite Time :** The firm has a very long or infinite life.

Walter has evolved a mathematical formula for determining the value of market share.

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where,

P = Market price of an equity share

D = Dividend per share

r = Internal rate of return

E = Earning per share

K_e = Cost of equity capital

Q37. Explain the criticism of Walter's model.

Ans :

Criticism of Walter's Model

Walter's model has been criticized on account of various assumptions made by **Prof. Walter** in formulating his hypothesis.

1. **No External Financing :** The basic assumption that investments are financed through retained earnings only is seldom true in real word. Firms do raise funds by external financing.
2. **Constant Return, r :** The internal rate of return, i.e., r, also does not, retain constant. As a matter of fact, with increased investment the rate of return also changes.
3. Constant Opportunity cost of Capital, k_e**:** The assumption that cost of capital (k_e) will remain constant also does not hold good. As a firm's risk pattern does not remain constant, it is not proper to assume that k_e will always remain constant.

Q38. Explain briefly about Gordon's model.

Ans :

The Gordon (1963) and by Lintner (1962) states -That dividends are relevant to determining of the value of the firm. In a popular common stock valuation model developed by Gordon, The determinants of the value of a firm's cost of equity financing are the dividends the firm is expected to pay to perpetuity, the expected annual growth rate of dividends and the firm's current stock price.

Assumptions of Gordon's Model

Gordon's Model has following assumptions:

1. **All-Equity Firm:** The firm is an all-equity firm, and it has no debt.
2. **No External Financing:** No external financing is available. Consequently retained earnings would be used to finance any expansion. Thus, just as Walter's model Gordon's model too confounds dividend and investment policies.
3. **Constant Return:** The internal rate of return, r, of the firm is constant. This ignores the diminishing marginal efficiency of investment.
4. **Constant Cost of Capital:** The appropriate discount rate k_e for the firm remains constant. Thus, Gordon's model also ignores the effect of a change in the firm's risk-class and its effect on k_e.
5. **Perpetual Earnings:** The firm and its stream of earnings are perpetual.
6. **No Taxes:** Corporate taxes do not exist.
7. **Constant Retention:** The retention ratio, b, once decided upon is constant. Thus, the growth rate, g = br, is constant forever.
8. **Cost of Capital Greater than Growth Rate:** The discount rate is greater than growth rate, $k_e > br = g$. If this condition is not fulfilled, we cannot get a meaningful value for the share.

Gordon's model can be proved with the help of the following formula:

$$P = \frac{E(1-b)}{K_e - br}$$

Where,

P = Price of a share

E = Earnings per share

1 – b = D/p ratio (i.e., percentage of earnings distributed as dividends)

K_e = Capitalization rate

br = Growth rate = rate of return on investment of an all equity firm.

Q39. State the criticism of Gordon's model.

Ans :

Criticism of Gordon's Model

Gordon's model consists of the following important criticisms:

- Gordon model assumes that there is no debt and equity finance used by the firm. It is not applicable to present day business.
- K_e and r cannot be constant in the real practice.
- According to Gordon's model, there are no tax paid by the firm. It is not practically applicable.

PROBLEMS

16. Earnings = 15 per share

Dividend paid = 5 per share

IRR = 30%

Cost of capital = 22%

What is the market price of the share ?

Sol :

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where

D = 5

r = 0.30

K_e = 0.22

E = 15

$$P = \frac{5 + \frac{0.30}{0.22}(15 - 5)}{0.22}$$

$$= \frac{5 + 1.36\ (10)}{0.22}$$

$$= \frac{18.6}{0.22} = 84.54$$

17. If earnings rate = 12%
Cost of capital = 8%
Value of share = ` 12 per share
If 60% is paid out as dividend
Calculate Gordons model.

Sol :

Earnings per share = 0.12 × 12 = 1.44

Retention ratio, b = 40%

K_e = 8%

$$P = \frac{E(1-b)}{K_e - br}$$

$$= \frac{1.44(1-0.4)}{0.08-(0.4\times 0.12)}$$

$$= \frac{0.864}{0.032} = 27$$

The present value of share = ` 27.

---

18. A company earns Rs. 10 per share at an internal Rate of 15%. The firms policy of paying 40% earnings as dividends if the required Rate of Return 10%. Determine price of Share under Gordon's model and walters model.

Sol :

Gordon's Model

Given Eps = Rs. 10

IRR (r) = 15% (or) 0.15

K = 10% (or) 0.10

Pay out Ratio = 40%

b = Retention Ratio

= 1 – pay out Ratio

= 1 – 0.4

= 0.6

$$\boxed{P_0 = \frac{E(1-b)}{k_e - br}}$$

$$= \frac{10(1-0.6)}{0.10-(0.6\times 0.15)}$$

$$= \frac{10(0.4)}{0.10-(0.6\times 0.15)}$$

$$= \frac{4}{0.10-0.09}$$

$$= \frac{4}{0.01} = 400$$

Walter's Model

$$\boxed{P_0 = \frac{\text{Div}+\left(\frac{r}{K}\right)(\text{Eps-Div})}{K_e}}$$

Div = Dividend per share

$$= \text{Eps}\times\frac{\text{Rate}}{100}$$

$= 10\times 40\%$

= Rs. 4.

r = Internal Rate of Return = 0.15

k = Cost of Capital = 0.10

Eps = Earning per share 10

$$P_0 = \frac{4+\left(\frac{0.15}{0.10}\right)(10-4)}{0.10}$$

$$P_0 = \frac{4+1.5(6)}{0.10}$$

$$P_0 = \frac{4+9}{0.10}$$

$$= \frac{13}{0.10}$$

$\therefore$ P_0 = Rs. 130

---

19. The earnings per share of company is Rs. 8 and the rate of capitalisation applicable is 10%. The company has before it an option of adoption.

i) 50%

ii) 75% and

iii) 100% dividend payout ratio.

Compute the market price of the company's quoted shares as per Walter's model if it can earn a return of,

i) 15%

ii) 10% and

iii) 5% on its retained earnings.

Sol :

Rate of Return

When 50%, EPS = 8

$$D = \frac{8 \times 50}{100} = 4$$

When Rate of Return 75% EPS = 8

$$D = \frac{8 \times 75}{100} = 6$$

When Rate of Return = 100% EPS = 8

$$D = \frac{8 \times 100}{100} = 8.$$

According to the Walter's model,

$$P_0 = \frac{D + \frac{r}{k_e}(E - D)}{k_e}$$

Rate of Return	50%	75%	100%
15%	$\frac{4 + \frac{0.15}{0.10}(8-4)}{0.10} = 100$	$\frac{6 + \frac{0.15}{0.10}(8-6)}{0.10} = 90$	$\frac{8 + \frac{0.15}{0.10}(8-8)}{0.10} = 95$
10%	$\frac{4 + \frac{0.10}{0.10}(8-4)}{0.10} = 80$	$\frac{6 + \frac{0.10}{0.10}(8-6)}{0.10} = 80$	$\frac{8 + \frac{0.10}{0.10}(8-8)}{0.10} = 80$
5%	$\frac{4 + \frac{0.05}{0.10}(8-4)}{0.10} = 60$	$\frac{6 + \frac{0.05}{0.10}(8-6)}{0.10} = 70$	$\frac{8 + \frac{0.05}{0.10}(8-8)}{0.10} = 85$

20. Calculate Market price Walter's model and comment.

r = 10%, K = 10% Eps = 100

Different pay out Ratio = 10%, 50 %, 80 %, 100%

Sol :

Walter's model

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

P_0 = Market price per share

D = Dividend per share

r = Rate of Return

K_e = Cost of capital

E = Earning per share

i) At 10% pay out Ratio

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

P_0 = Market price per share

Div = Dividend per share

$$= Eps \times \frac{Rate}{100}$$

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

= Rs. 10

r = Internal Rate of Return

K_e = Cost of capital

E = Earnings per share.

$$P_0 = \frac{10 + \left(\frac{0.10}{0.10}\right)(100 - 10)}{0.10}$$

$$P_0 = \frac{10 + (1)(90)}{0.10} = \frac{10 + 90}{0.10}$$

$$P_0 = \frac{100}{0.10}$$

$\therefore$ P_0 = Rs. 1000

ii) At 50% pay out Ratio

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

P_0 = Market price per share

Div = Dividend per share

$$= Eps \times \frac{Rate}{100}$$

$$= 100 \times \frac{50}{100} = \text{Rs. } 50$$

r = Internal Rate of Return 0.10

K_e = Cost of capital 0.10

E = Earnings per share.Rs.100

$$P_0 = \frac{50 + \left(\frac{0.10}{0.10}\right)(100 - 50)}{0.10}$$

$$P_0 = \frac{50 + (1)(50)}{0.10}$$

$$= \frac{50 + 50}{0.10} = \frac{100}{0.10}$$

$$P_0 = \frac{100}{0.10}$$

$\therefore$ P_0 = 1000

iii) At 80% pay out Ratio

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Div = Dividend per share

$= Eps \times \frac{Rate}{100}$

$= 100 \times \frac{80}{100}$ = Rs. 80

$P_0 = \frac{80 + \left(\frac{0.10}{0.10}\right)(100 - 80)}{0.10}$

$P_0 = \frac{80 + (1)(20)}{0.10}$

$= \frac{80 + 20}{0.10}$

$P_0 = \frac{100}{0.10}$

$\therefore \quad P_0 = 1000$

iv) At 100% pay out Ratio

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Div = Dividend per share

$= Eps \times \frac{Rate}{100}$

$= 100 \times \frac{100}{100}$ = Rs. 100

$P_0 = \frac{100 + \left(\frac{0.10}{0.10}\right)(100 - 100)}{0.10}$

$P_0 = \frac{100 + (1)(0)}{0.10}$

$= \frac{100}{0.10}$

$\therefore \quad P_0 = 1000$

21. The earnings per share of a company are ` 10. It has an internal rate of return of 16 percent and the capitalization rate of its risk class is 12%. If Walter's model is used.

(i) What should be the optimum payout ratio of the firm ?

(ii) What would be the price of the share at this payout ?

(iii) How shall the price of the share be affected if a different payout were employed ?

Sol :

(a) The company's internal rate of return (IRR) is 16% and capitalization rate is 12%.

According to Walter's model in a situation when IRR is greater than the capitalization rate (i.e., 16% > 12%), the optimum dividend pay out ratio will be zero i.e., '0' which results in increase in the value of shares.

(b) Market Price of the Share of Optimum Dividend Ratio (i.e., 0%)

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

where

P = Market price of share

D = Dividend per share = ` 0

E = Earnings per share = ` 10

r = Internal Rate of return on investment = 16%

K = Capitalization rate = 12%

$P = \frac{0 + \left(\frac{0.16}{0.12}\right)(10 - 0)}{0.12}$

$= \frac{0 + (1.333)10}{0.12}$

$= \frac{13.33}{0.12}$

= ` 111.11

(c) If the firm employed any other D/P ratio say 30%, the market price of share will be as follows,

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

$$P = \frac{3 + \left(\frac{0.16}{0.12}\right)(10 - 3)}{0.12}$$

$$= \frac{3 + (1.333)7}{0.12} = \frac{3 + 9.33}{0.12}$$

$$= \frac{12.33}{0.12}$$

$$= ` 102.75$$

$\therefore$ 'P' i.e., (market price of share) at D/P ratio of 30% is ` 102.78 which is less than D/P at 0% (i.e., ` 111.08)

---

22. The equity capitalization rate is 11%. Earnings per share is **` 20/-. Determine the values of the shares as per Gordon's Model, under conditions of certainty, when the rates of return on investment are 12%, 11% and 10%, assuming the following**

(a) 90% Retention

(b) 80% Retention and

(c) 50% Retention

Sol :

According to Gordon's valuation model,

$$P_0 = \frac{E(1 - b)}{K_e - br}$$

where

P_0 = Price of a share

E = Earnings per share

K_e = Rate of return/required by share holder

b = retention ration

r = Rate of return on investment

(a) When retention ratio is 90%

(i) Rate of return is 12%

$$P_0 = \frac{E(1 - b)}{K_e - br}$$

$$P_0 = \frac{20(1 - 0.90)}{0.11 - (0.90 - 0.12)}$$

$$= \frac{20(0.1)}{0.11 - 0.108}$$

$$= \frac{2}{0.002} = ` 1000$$

(ii) Rate of return is 11%

$$P_0 = \frac{E(1 - b)}{K_e - br}$$

$$P_0 = \frac{20(1 - 0.90)}{0.11 - (0.90 \times 0.11)}$$

$$= \frac{20(0.1)}{0.11 - 0.099}$$

$$= \frac{2}{0.011} = ` 181.82$$

(iii) Rate of return is 10%

$$P_0 = \frac{E(1 - b)}{K_e - br}$$

$$P_0 = \frac{20(1 - 0.90)}{0.11 - (0.90 \times 0.10)}$$

$$= \frac{20(0.10)}{0.11 - 0.09}$$

$$= \frac{2}{0.02} = ` 100$$

(b) When retention ratio is 80%

(i) Rate of return is 12%

$$P_0 = \frac{E(1 - b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.80)}{0.11-(0.80\times0.12)}$$

$$= \frac{20(0.20)}{0.11-0.096}$$

$$= \frac{4}{0.014} = ` 285.71$$

(ii) Rate of return is 11%

$$P_0 = \frac{E(1-b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.80)}{0.11-(0.80\times0.11)}$$

$$= \frac{20(0.20)}{0.11-0.088}$$

$$= \frac{4}{0.022} = ` 181.82$$

(iii) Rate of return is 10%

$$P_0 = \frac{E(1-b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.80)}{0.11-(0.80\times0.10)}$$

$$= \frac{20(0.20)}{0.11-0.08}$$

$$= \frac{4}{0.03} = ` 133.33$$

(c) When retention ratio is 50%

(i) Rate of return is 12%

$$P_0 = \frac{E(1-b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.50)}{0.11-(0.50\times0.12)}$$

$$= \frac{20(0.5)}{0.11-0.06}$$

$$= \frac{10}{0.05} = ` 200$$

(ii) Rate of return is 11%

$$P_0 = \frac{E(1-b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.50)}{0.11-(0.50\times0.11)}$$

$$= \frac{20(0.5)}{0.11-0.055}$$

$$= \frac{10}{0.055} = ` 181.82$$

(iii) Rate of return is 10%

$$P_0 = \frac{E(1-b)}{K_e - br}$$

$$P_0 = \frac{20(1-0.50)}{0.11-(0.50\times0.10)}$$

$$= \frac{10}{0.06}$$

$$= ` 166.67$$

Rate of return	90%	80%	50%
12%	1000	285.71	200
11%	181.82	181.82	181.82
10%	100	133.33	166.67

Exercise Problems

1. B. Ltd. issues ` 1,00,000 9% debentures at a premium at 10%. The costs of floatation are 2%. The tax rate applicable is 60% Compute cost of debt.

   [**Ans : Cost of debt : 3.34%**]

---

2. XYZ Company has debenture outstanding with 5 years left before maturity. The debentures are currently selling for ` 90 (face value is ` 100). The debentures are to be redeemed at 5% premium. The interest is paid annually at a rate of interest of 12%. The firm's tax rate is 35%. Calculate K_d.

   [**Ans : Cost of debt : 11.11%**]

---

3. Compute the cost of debt in following cases :

   (i) A Ltd. issues ` 50,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

   (ii) B Ltd. issues ` 50,000, 8% debentures at a premium of 10%. The tax rate applicable to the company is 60%. Compute cost of debt capital.

   (iii) C Ltd. issues ` 50,000, 8% debentures at a discount of 5%. The tax rate is 50%. Compute the cost of debt capital.

   (iv) D Ltd. issues ` 1,00,000, 9% debentures at a premium of 10%. The cost of floatation are 2% the tax rate applicable is 60%. Compute cost of debt capital.

   [**Ans : (i) 4%, (ii) 2.9%, (iii) 4.2%, (iv) 3.34%**]

---

4. A Company plans to issue 100 view shares of ` 100 each at par. The floatation costs are expected to be 5% of the share price. The company pays a dividend of ` 10 per share initially and growth in dividends is expected to be 5%. Compute the cost of new issue of equity shares. If the current market price of an equity share is ` 150, calculate the cost of existing equity share capital.

   [**Ans : Cost of equity capital : 15.53% and 11.67%**]

---

5. A company earns ` 6 per share having capitalisation rate of 10 per cent and has a return an investment at the rate of 20 percent. According to Walter is model, what should be the price per share at 30 per cent dividend pay-out ratio? Is this the optimum pay-out ratio as per Walter model?

   [**Ans : P = `102**]

---

6. The following information is available for ABC Corporation :

Earning per share	` 4.00
Rate of return on investments	18 per cent
Rate of return required by shareholder	15 per cent

   What will be the price per share as per the Walter Model if the pay-out ratio is 40 per cent? 50 per cent? 60 per cent

   [**Ans : 40% - ` 29.87 ; 50% - ` 29.33 ; 60% - ` 28.80**]

7. The earning per share of company are ` 12 and the rate of capitalization applicable to the company is 10%. The productivity of earnings (r) is 10%. Compute the market value of Company, if the payout ratio is (a) 25%, (b) 50%, (c) 75%.

[Ans : If dividend Payout is 25% ` 120. If dividend Payout is 50% ` 120. If dividend Payout is 75% ` 120]

8. G limited has invested ` 400 lakhs in assets. There are 50 lakhs shares outstanding. The per value per share is ` 10. It earns a rate of 15% on its investment and has a policy of retaining 50% of earnings. If the appropriate discount rate of the company is 10%, what is the price of its shares using the Gordon's model? What will happen to the price of the share if the company has a pay-out of 80% or 20% ?

[Ans : If dividend Payout is 50% ` 30. If dividend Payout is 80% ` 17. If dividend Payout is 20% ` (–)15]

9. The overall cost of capital of a company is 10%. It has currently 2,500 outstanding shares selling at ` 100 each. The firm is contemplating the declaration of dividends of ` 5 per share at the end of the current financial year. It experts to have a net income of ` 2,50,000 and has a proposal for making new investments of ` 5,00,000. Show that under MM assumptions, the payment of dividend does not affect the value of the firm.

[**Ans : Value of the firm when dividends are paid - ` 2,500,000;**

Value of the firm when dividends are not paid - ` 2,500,000;]

Short Question and Answers

1. Define Preference shares.

Ans :

Meaning

The parts of corporate securities are called as preference shares. It is the shares, which have preferential right to get dividend and get back the initial investment at the time of winding up of the company. Preference shareholders are eligible to get fixed rate of dividend and they do not have voting rights.

Preference shares may be classified into the following major types:

(i) Cumulative preference shares

Cumulative preference shares have right to claim dividends for those years which have no profits. If the company is unable to earn profit in any one or more years, cumulative preference shares are unable to get any dividend but they have right to get the comparative dividend for the previous years if the company earned profit.

(ii) Non-cumulative preference shares

Non-cumulative preference shares have no right to enjoy the above benefits. They are eligible to get only dividend if the company earns profit during the years. Otherwise, they cannot claim any dividend.

(iii) Redeemable preference shares

When, the preference shares have a fixed maturity period it becomes redeemable preference shares. It can be redeemable during the lifetime of the company. The Company Act has provided certain restrictions on the return of the redeemable preference shares.

2. What is weighted average cost of capital.

Ans :

The average cost of the costs of several means of financing, is known as weighted average cost of capital. It can also be termed as overall cost of capital, composite cost of capital or average cost of capital.

Weighted average cost of capital can be easily evaluated, if cost of a particular source of finance is evaluated.

WACC can be computed as follows,

$WACC = w_e k_e + w_d k_d + w_p k_p$

Where,

w_e = Proportion of equity capital

w_d = Proportion of debt capital

w_p = Proportion of preference capital

k_e = Cost of equity capital

k_d = Cost of debt after tax

k_p = Cost of preference capital.

3. Define equity shares.

Ans :

Equity Shares also known as ordinary shares, which means, other than preference shares. Equity shareholders are the real owners of the company. They have a control over the management of the company. Equity shareholders are eligible to get dividend if the company earns profit. Equity share capital cannot be redeemed during the lifetime of the company.

The liability of the equity shareholders is the value of unpaid value of shares.

Features

Equity shares consist of the following important features:

(i) Maturity of the shares

Equity shares have permanent nature of capital, which has no maturity period. It cannot be redeemed during the lifetime of the company.

(ii) Residual claim on income

Equity shareholders have the right to get income left after paying fixed rate of dividend to preference shareholder. The earnings or the income available to the shareholders is equal to the profit after tax minus preference dividend.

(iii) Residual claims on assets

If the company wound up, the ordinary or equity shareholders have the right to get the claims on assets. These rights are only available to the equity shareholders.

4. Types of Debentures.

Ans :

Debentures may be divided into the following major types:

(i) Unsecured debentures

Unsecured debentures are not given any security on assets of the company. It is also called simple or naked debentures. This type of debentures are traded as unsecured creditors at the time of winding up of the company.

(ii) Secured debentures

Secured debentures are given security on assets of the company. It is also called as mortgaged debentures because these debentures are given against any mortgage of the assets of the company.

(iii) Redeemable debentures

These debentures are to be redeemed on the expiry of a certain period. The interest is paid periodically and the initial investment is returned after the fixed maturity period.

(iv) Irredeemable debentures

These kind of debentures cannot be redeemable during the life time of the business concern.

(v) Convertible debentures

Convertible debentures are the debentures whose holders have the option to get them converted wholly or partly into shares. These debentures are usually converted into equity shares. Conversion of the debentures may be:

- Non-convertible debentures
- Fully convertible debentures
- Partly convertible debentures

5. Differences between share and debenture.

Ans :

The difference between share and debenture are as follows :

	Basis of Difference	Share	Debenture
1.	**Capital vs. Loan**	Share is a part of owned capital	Debenture constitutes a loan
2.	**Reward for Investment**	Reward is the payment of dividend	Reward is the payment of interest
3.	**Fluctuations in the rate of interest and dividend**	The rate of dividend may vary from year to year depending upto the profit decisions of directors and members	The rate of interest is fixed.

4.	**Charge vs. Appropriation**	Payment of dividend is an appropriation out of profits and this cannot be made if there is no profit.	Payment of interest is a charge against profits and is to be made even if there is no profit.
5.	**Payment of Interest/Dividend**	Payment of dividend gets no priority over the payment of interest.	Payment of interest gets priority over the payment of dividend.
6.	**Repayment of Principal**	Payment of share capital is made after the repayment of debentures.	Payment of debentures is made before the payment of share capital.
7.	**Secured by Charge**	Shares are not secured by any charge.	Debentures are usually secured by a charge
8.	**Restriction on Issue**	Sec. 79 imposes certain restriction on issue of shares at discount.	No restriction is imposed on the purchase of debentures by the company.

6. Define capital structure.

Ans :

Introduction

Capital is the major part of all kinds of business activities, which are decided by the size, and nature of the business concern. Capital may be raised with the help of various sources. If the company maintains proper and adequate level of capital, it will earn high profit and they can provide more dividends to its shareholders.

Meaning

Capital structure refers to the kinds of securities and the proportionate amounts that makeup capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings.

The term capital structure refers to the relationship between the various long-term source financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm.

Capital structure is the permanent financing of the company represented primarily by long-term debt and equity.

Definitions

The following definitions clearly initiate, the meaning and objective of the capital structures.

(i) According to the definition of Gerestenbeg, "Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources".

(ii) According to the definition of James C. Van Horne, "The mix of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity".

7. Objectives of capital structure.

Ans :

(i) One of the important objective of optimum capital structure is to reduce cost of capital in order to maximise the return of capital utilized. The proportion of debt and equity must be planned in such a way that it minimizes total cost of capital.

(ii) Every business has different types of risks which directly influence the capital structure of a firm. Hence, a good manager makes necessary adjustments in capital structure to minimize the risk.

(iii) It is one of the important objective of optimum capital structure to give maximum returns to equity shareholder which is possible by minimising the total cost of capital.

(iv) The last objective of optimum capital structure is to have control over management. It is possible by maintaining balance between the voting right and non-voting right capital.

8. Traditional Approach

Ans :

It is the mix of Net Income approach and Net Operating Income approach. Hence, it is also called as intermediate approach. According to the traditional approach, mix of debt and equity capital can increase the value of the firm by reducing overall cost of capital up to certain level of debt. Traditional approach states that the K_0 decreases only within the responsible limit of financial leverage and when reaching the minimum level, it starts increasing with financial leverage.

Assumptions: Capital structure theories are based on certain assumption to analysis in a single and convenient manner:

- There are only two sources of funds used by a firm; debt and shares.
- The firm pays 100% of its earning as dividend.
- The total assets are given and do not change.
- The total finance remains constant.
- The operating profits (EBIT) are not expected to grow.
- The business risk remains constant.
- The firm has a perpetual life.
- The investors behave rationally.

9. Net Income Approach

Ans :

Net income approach suggested by the Durand. According to this approach, the capital structure decision is relevant to the valuation of the firm. In other words, a change in the capital structure leads to a corresponding change in the overall cost of capital as well as the total value of the firm.

According to this approach, use more debt finance to reduce the overall cost of capital and increase the value of firm.

Net income approach is based on the following three important assumptions:

(a) There are no corporate taxes.

(b) The cost debt is less than the cost of equity.

(c) The use of debt does not change the risk perception of the investor.

Where

$V = S + B$

V = Value of firm

S = Market value of equity

B = Market value of debt

Market value of the equity can be ascertained by the following formula:

$$S = \frac{NI}{K_e}$$

Where

NI = Earnings available to equity shareholder

K_e = Cost of equity/equity capitalization rate

10. Modigliani and Miller Approach

Ans :

Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Modigliani and Miller approach is based on the following important assumptions:

- There is a perfect capital market.
- There are no retained earnings.
- There are no corporate taxes.
- The investors act rationally.
- The dividend payout ratio is 100%.
- The business consists of the same level of business risk.

11. Define Cost of capital.

Ans :

Introduction

Cost of capital is an integral part of investment decision as it is used to measure the worth of investment proposal provided by the business concern. It is used as a discount rate in determining the present value of future cash flows associated with capital projects. Cost of capital is also called as cut-off rate, target rate, hurdle rate and required rate of return.

When the firms are using different sources of finance, the finance manager must take careful decision with regard to the cost of capital; because it is closely associated with the value of the firm and the earning capacity of the firm.

Meaning

Cost of capital is the rate of return that a firm must earn on its project investments to maintain its market value and attract funds.

Cost of capital is the required rate of return on its investments which belongs to equity, debt and retained earnings. If a firm fails to earn return at the expected rate, the market value of the shares will fall and it will result in the reduction of overall wealth of the shareholders.

Definition

The following important definitions are commonly used to understand the meaning and concept of the cost of capital.

According to the definition of John J. Hampton " Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place".

12. Cost of preference share.

Ans :

Cost of preference share capital is the annual preference share dividend by the net proceeds from the sale of preference share.

There are two types of preference shares irredeemable and redeemable. Cost of redeemable preference share capital is calculated with the help of the following formula:

$$K_p = \frac{D_p}{N_p}$$

Where,

K_p = Cost of preference share

D_p = Fixed preference dividend

N_p = Net proceeds of an equity share

Cost of irredeemable preference share is calculated with the help of the following formula:

$$K_p = \frac{D_p + (P - N_p)/n}{(P + N_p)/2}$$

Where,

K_p = Cost of preference share

D_p = Fixed preference share

P = Par value of debt

N_p = Net proceeds of the preference share

n = Number of maturity period.

13. Define Dividend.

Ans :

Introduction

The financial manager must take careful decisions on how the profit should be distributed among shareholders. It is very important and crucial part of the business concern, because these decisions are directly related with the value of the business concern and shareholder's wealth. Like financing decision and investment decision, dividend decision is also a major part of the financial manager. When the business concerns decide dividend policy, they have to consider certain factors such as retained earnings and the nature of shareholder of the business concern.

Meaning

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders.

Definition

According to the Institute of Chartered Accountant of India, dividend is defined as "a distribution to shareholders out of profits or reserves available for this purpose".

14. Walter's model.

Ans :

Prof. James E. Walter argues that the dividend policy almost always affects the value of the firm.

Walter model is based in the relationship between the following important factors:

- Rate of return (I)
- Cost of capital (k)

According to the Walter's model. If r < k, the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of r > k is that the shareholders can earn a higher return by investing elsewhere.

If the firm has r = k, it is a matter of indifferent whether earnings are retained or distributed.

Assumptions

Walter's model is based on the following assumptions :

(i) Internal Financing : The firm finances all investment through retained earnings; that is, debt or new equity is not issued.

(ii) Constant Return and Cost of Capital : The firm's rate of return, r, and its cost of capital, k is constant.

(iii) 100 Percent Payout or Retention : All earnings are either distributed as dividends or reinvested internally immediately.

(iv) Constant EPS and DPS: Beginning earnings and dividends never change. The value of the earnings per share, EPS, and the dividend per share, DPS, may be changed in the model to determine results, but any given values of EPS or DPS are assumed to remain constant forever in determining a given value.

15. Gordon's model.

Ans :

The Gordon (1963) and by Lintner (1962) states -That dividends are relevant to determining of the value of the firm. In a popular common stock valuation model developed by Gordon, The determinants of the value of a firm's cost of equity financing are the dividends the firm is expected to pay to perpetuity, the expected annual growth rate of dividends and the firm's current stock price.

Assumptions of Gordon's Model

Gordon's Model has following assumptions:

(i) All-Equity Firm: The firm is an all-equity firm, and it has no debt.

(ii) No External Financing: No external financing is available. Consequently retained earnings would be used to finance any expansion. Thus, just as Walter's model Gordon's model too confounds dividend and investment policies.

(iii) Constant Return: The internal rate of return, r, of the firm is constant. This ignores the diminishing marginal efficiency of investment.

(iv) Constant Cost of Capital: The appropriate discount rate k_e for the firm remains constant. Thus, Gordon's model also ignores the effect of a change in the firm's risk-class and its effect on k_e.

Choose the Correct Answer

1. The residual theory of dividends suggests that dividends are _____ to the value of the firm. [c]

   (a) Residual (b) Relevant

   (c) Irrelevant (d) Integral

2. The information content of dividends refers to _____. [b]

   (a) Nonpayment of dividends by corporations

   (b) Dividend changes as indicators of a firm's future

   (c) A stable and continuous dividend

   (d) A dividend paid as a percent of current earnings

3. According to the residual theory of dividends, if the firm's equity need exceeds the amount of retained earnings, the firm would _____. [c]

   (a) Borrow to pay the cash dividend

   (b) Sell additional stock to pay the cash dividend

   (c) Pay no cash dividends

   (d) Not need to consider its dividend policy

4. Gordon's "bird-in-the-hand" argument suggests that _____. [c]

   (a) Dividends are irrelevant

   (b) Firms should have a 100 percent payout policy

   (c) Shareholders are generally risk averse and attach less risk to current dividends

   (d) The market value of the firm is unaffected by dividend policy

5. The shareholder receiving a stock dividend receives _____. [d]

   (a) A share of common stock of equal value to their existing shares of common stock

   (b) Cash

   (c) Additional shares of common stock and cash

   (d) Nothing of value

6. The purpose of a stock split is to _____. [c]

   (a) Affect the firm's capital structure

   (b) Decrease the dividend

   (c) Enhance the trading activity of the stock by lowering the market price

   (d) Increase the market price of the stock.

7. In weighted average cost of capital, a company can affect its capital cost through _____. [d]

(a) Policy of capital structure (b) Policy of dividends

(c) Policy of investment (d) All of the above

8. The cost of capital is equal to required return rate on equity in the case if investors are only _____. [b]

(a) Valuation manager (b) Common stockholders

(c) Asset seller (d) Equity dealer

9. In weivhted average capital, the capital structure weights estimation does not rely on the value of _____. [c]

(a) Investors equity (b) Market value of eqauity

(c) Book value of equity (d) Stock equity

10. Equity shareholders are called _____. [a]

(a) Owners of the company (b) Partners of the company

(c) Executives of the company (d) Guardian of the company

11. Debentures represent _____. [d]

(a) Fixed capital of the company (b) Permanent capital of the company

(c) Fluctuating capital of the company (d) Loan capital of the company

12. Internal sources of capital are those that are _____. [d]

(a) Generated through outsiders such as suppliers

(b) Generated through loans from commercial banks

(c) Generated through issue of shares

(d) Generated within the business

13. Cost of capital is the _____ required rate of return expected by investors. [b]

(a) Fixed (b) Minimum

(c) Maximum (d) Variable

14. Cost of retained earnings is calculated by applying K_r = [a]

(a) $K_e (1 - t) (1 - b)$ (b) $K_e (1 - t) (1 + b)$

(c) $K_e (1 - t) (1 - f)$ (d) $K_e (1 - b) (1 - f)$

15. When the capitalization of company is dominated by fixed charges funds. Its is known as _____. [b]

(a) Trading on Thick Equity (b) Trading on Thin Equity

(c) Trading on Middle Equity (d) None

16. Net operating income was propounded by _____. [a]

(a) David Durand (b) Michel Chart

(c) Modiglani Miller (d) Nicholas Philip

17. Composition of capital means _____. [a]

(a) Capital structure (b) Cost of capital

(c) Financial Leverage (d) Capital Budgeting

18. Which of the following factor affect the Capital Structure. [a]

(a) Nature of Business (b) Rumors in the market

(c) Capital Reduction (d) Liquidation

19. Net Income Approach available to shareholders is obtained by deducting _____ from Net Operating Income. [a]

(a) Interest and Tax (b) Only Interest

(c) Only Tax (d) None

20. When dividend payable either in cash or stock at the option of the shareholders is called _____ dividend. [a]

(a) Optional (b) Script

(c) Bond (d) property

21. Some company may pay dividend in the form of asset that it is holding and which is superflous for it is called _____ dividend. [d]

(a) Optional (b) Script

(c) Bond (d) Property

22. When the firm does not pay out fixed dividend regularly, it is _____ dividend policy. [a]

(a) Irregular (b) Regular

(c) No immediate (d) Liberal

23. Where a dividend has been declared by a company, it has to be paid within _____ days from the date of declaration. [a]

(a) 30 (b) 45

(c) 50 (d) 5

Fill in the blanks

1. _____ is the lifeblood of business.
2. Equity Shares also known as _____.
3. _____ preference shares have right to claim dividends for those years which have no profits.
4. _____ preference shares have no right to enjoy the above benefits.
5. _____ includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not.
6. _____ debentures are the debentures whose holders have the option to get them converted wholly or partly into shares.
7. _____ refers to the kinds of securities and the proportionate amounts that makeup capitalization.
8. _____ is the permanent financing of the company represented primarily by long-term debt and equity.
9. The composition of a firm's financing consists of equity, preference, and _____.
10. The _____ sources of fund employed in a business enterprise.
11. Firms raise funds from only two types of sources that is _____ and _____.
12. Net income approach suggested by the _____.
13. _____ approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market.
14. _____ is an integral part of investment decision as it is used to measure the worth of investment proposal provided by the business concern.
15. _____ cost is the rate that the firm pays to procure financing.
16. _____ is the after tax cost of long-term funds through borrowing.
17. WACC stands for _____.
18. EVA stands for _____.
19. _____ refers to the business concerns net profits distributed among the shareholders.
20. In _____ dividends stock holders receive cheques for the amounts due to them.
21. The formula for Walter's Model _____.
22. The formula of Gordon's model _____.

ANSWERS

1. Finance
2. Ordinary shares
3. Cumulative
4. Non-cumulative
5. Debenture
6. Convertible
7. Capital structure
8. Capital structure
9. Debt.
10. Long term
11. Debt, equity
12. Durand.
13. Modigliani and Miller
14. Cost of capital
15. Explicit
16. Cost of debt
17. Weighted Average Cost of Capital
18. Economic Value Added
19. Dividend
20. Cash
21. $P = \dfrac{D + \dfrac{r}{K_e}(E - D)}{K_e}$
22. $P = \dfrac{E(1 - b)}{K_e - br}$

UNIT IV

WORKING CAPITAL MANAGEMENT :

Gross Vs net working capital, determinants of working capital; Management of Cash - Preparation of Cash Budgets (Receipts and Payment Method only); Cash management technique (Lock box, concentration banking)

4.1 WORKING CAPITAL MANAGEMENT

Q1. Define the term working capital.

Ans : **(July-21, May-19, Imp.)**

Meaning

The term working capital is commonly used for the capital required for day-to-day working in a business concern, such as for purchasing raw material, for meeting day-to-day expenditure on salaries, wages, rents rates, advertising etc. But there are much disagreement among various financial authorities

Definitions

(i) **According to Shubin,** "Working capital the amount of funds necessary to cover the cost of operating the enterprise".

(ii) **According to Gerstenberg,** "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, as **for example,** from cash to inventories, inventories to receivables, receivables into cash".

(iii) **According to Hoagland,** "Working capital is descriptive of that capital which is not fixed. But, the more common use of working capital is to consider it as the difference between the book value of the current assets and the current liabilities".

Working capital, in general practice, refers to the excess of current assets over current liabilities. Management of working capital therefore, is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exists between them. In other words it refers to all aspects of administration of both current assets and current liabilities. It is also known as revolving or circulating capital or short-term capital.

Working capital management is very important to ensure that the company has enough funds to carry on with its day-to-day operations smoothly. A business should not have a very long Cash Conversion Cycle. A cash conversion cycle measures the time period for which a firm will be deprived of funds if it increases its investments as a part of its business growth strategies.

Q2. What are the objectives of working capital.

Ans :

The following are the basic objectives of working capital management,

1. Proper Allocation of Resources

The main purpose of working capital is to optimally allocate scarce resources in such a way that it brings increased returns on the amount of capital employed in the business. It can be done by efficiently investing in current assets thereby reducing the level of current liabilities.

2. Maintain Sufficient Funds

A firm should always have appropriate funds for smoothly performing its business operations. Indeed, if firm has inadequate funds, most of its profit generating opportunities would remain unexploited,

which if exploited by competitors, improve their rate of return on investment which in turn causes their share price to increase. On the other hand, if firms have excess working capital, it will increases the operating cost of a business. Hence, every firm needs to efficiently manage the working capital to meet their current obligations on time.

3. Proper Management of Current Assets

Firms must also focus on the proper management of their current assets because current assets arc the important constituents of the working capital. Care need to be taken while managing current assets such that the marginal return obtained from the investment made in these assets should not be less than the capital employed in the business.

4. Maintain Balance between Current Assets and Current Liabilities

A proper balance between the current assets and current liabilities should be maintained in such a way that the routine financial obligations can be met efficiently.

Q3. State the components of working capital.

Ans : **(Imp.)**

The difference between the current assets and the current liabilities is called as "net working capital". There are two components of working capital which are as follows,

1. Current assets
2. Current liabilities.

1. Current Assets

The assets which can be transformed into cash within a short period of time in a normal business is called as current assets. The total amount of capital invested in the current assets of the firm is called as gross working capital.

The following are the important components of current assets,

(i) Cash-in-hand and bank balances

(ii) Bills receivables

(iii) Sundry debtors (less provision for bad debts)

(iv) Short-term loans and advances

(v) Inventories of stocks are,

(a) Raw materials

(b) Work-in-process

(c) Stores and spares

(d) Finished goods

(vi) Accrued incomes

(vii) Prepaid expenses

(viii) Temporary investments of surplus funds.

The gross working capital helps the firm to provide adequate amount of working capital at the right time. It also helps in ascertaining the rate of return on investments in working capital.

2. Current Liabilities

The liabilities which are paid in the normal business within a short period of one accounting year from the current assets or business income is called as current liabilities. If current liabilities exceed current assets then a negative net working capital will appear.

Elements of Current Liabilities

The following are the elements of current liabilities.

(i) Bills payable

(ii) Sundry creditors / accounts payable

(iii) Dividends payable

(iv) Bank overdraft

(v) Short-term loans, advances and deposits

(vi) Accrued or outstanding expenses

(vii) Provision for taxation.

Q4. Explain the concepts of working capital.

Ans :

1. Gross Working Capital: It refers to the firm's investment in total current or circulating assets.

2. **Net Working Capital:** The term "Net Working Capital" has been defined in two different ways:

   (i) It is the excess of current assets over current liabilities. This is, as a matter of fact, the most commonly accepted definition. Some people define it as only the difference between current assets and current liabilities. The former seems to be a better definition as compared to the latter.

   (ii) It is that portion of a firm's current assets which is financed by long-term funds.

3. **Permanent Working Capital:** This refers to that minimum amount of investment in all current assets which is required at all times to carry out minimum level of business activities. In other words, it represents the current assets required on a continuing basis over the entire year. Tandon Committee has referred to this type of working capital as "Core current assets".

Q5. State the characteristics of working capital.

Ans :

The characteristics of working capital is summarised in the following points:

1. Short-Term Needs

Working capital is used to acquire current assets which get converted into cash in a short period. In this respect, it differs from fixed capital which represents funds locked in long-term assets. The duration of the working capital depends on the length of production process, the time that elapses in the sale and the waiting period of the cash receipt.

2. Circular Movement

Working capital is constantly converted into cash which again turns into working capital. This process of conversion goes on continuously. The cash is used to purchase current assets and when the goods are produced and sold-out; those current assets are transformed into cash. Thus, it moves in a circular away. That is why working capital is also described as circulating capital.

3. Element of Permanency

Though working capital is a short-term capital, it is required always and forever to continue the productive activity of the enterprise. Hence, so long as production continues, the enterprise will constantly remain in need of working capital. The working capital that is required permanently is called permanent or regular working capital.

4. Element of Fluctuation

Though the requirement of working capital is felt permanently, its requirement fluctuates more widely than that of fixed capital. The requirement of working capital varies directly with the level of production. It varies with the variation of the purchase and sale policy; price level and the level of demand also. The portion of working capital that changes with production, sale, price, etc., is called variable working capital.

5. Liquidity

Working capital is more liquid than fixed capital. If need arises, working capital can be converted into cash within a short period and without much loss. A company in need of cash can get it through the conversion of its working capital by insisting on quick recovery of its bills receivable and by expediting sales of its product. It is due to this trait of working capital that the companies with a larger amount of working capital feel more secure.

6. Less Risky

Funds invested in fixed assets get locked-up for a long period of time and cannot be recovered easily. There is also a danger of fixed assets like machinery getting obsolete due to technological innovations. Hence, investment in fixed capital is comparatively more risky. As against this, investment in current assets is less risky as it is a short-term investment. Working capital involves more of physical risk only, and that too is limited.

7. Special Accounting System not Needed

Since, fixed capital is invested in long-term assets; it becomes necessary to adopt various systems of estimating depreciation. On the other hand, working capital is invested in short-term assets which last for one year only. Hence, it is not necessary to adopt special accounting system for them.

Q6. Explain the Need for working capital.

Ans :

Working capital is needed till a firm gets cash on sale of finished products. It depends on two factors:

(i) Manufacturing cycle i.e. time required for converting the raw material into finished product; and

(ii) Credit policy i.e. credit period given to Customers and credit period allowed by creditors.

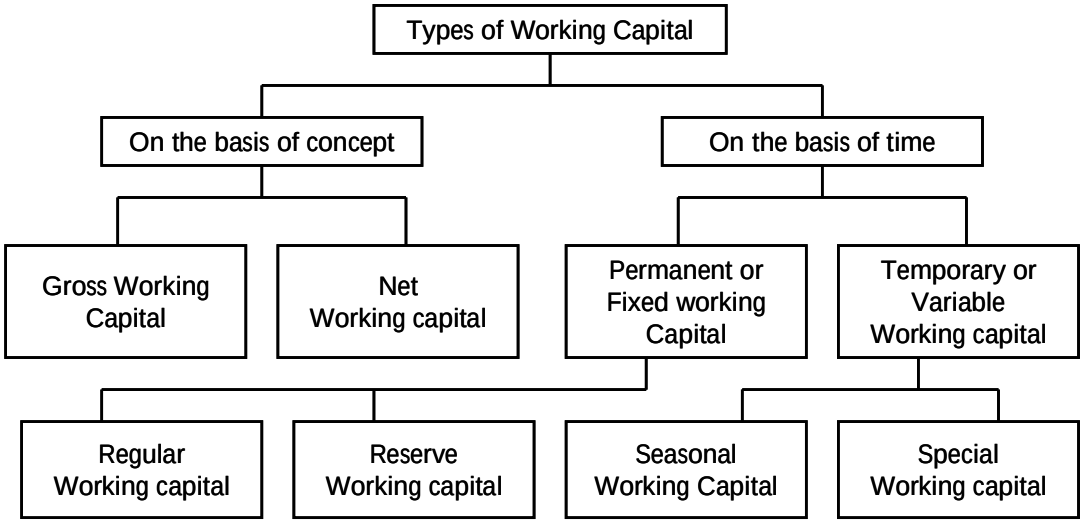
Thus, the sum total of these times is called an "Operating cycle" and it consists of the following six steps:

- Conversion of cash into raw materials.
- Conversion of raw materials into work-in-process.
- Conversion of work-in-process into finished products.
- Time for sale of finished goods – cash sales and credit sales.
- Time for realisation from debtors and Bills receivables into cash.
- Credit period allowed by creditors for credit purchase of raw materials, inventory and creditors for wages and overheads.

Q7. Explain the classification / types of working capital.

Ans :

Working capital may be classified in two types :



1. On The Basis of Concept

On the basis of concept, working capital is classified as gross working capital and net working capital. This classification is important from the point of view of the financial manager.

i) Gross Working Capital: The term working capital refers to the gross working capital and represents the amount of funds invested in current assets.

ii) Net Working Capital: The term working capital refers to the net working capital. Net working capital is the excess of current assets over current liabilities.

2. On The Basis of Time

On the basis of time, working capital may be classified as permanent of fixed working capital and temporary or variable working capital.

i) Permanent (or) Fixed Working Capital: Essentially, permanent working capital is the minimum level of working capital required for a firm to operate.

Permanent working capital is also called fixed working capital. Permanent working capital does not depend on the level of production or sales. It is similar - in some sense - to fixed assets because of its permanent (fixed) nature. Important to note, however, that permanent working capital is not literally fixed: its level can change over time. The level of permanent working capital depends on the business cycle as well as the growth of a firm.

Permanent working capital can be further divided into the following categories:

(a) Regular Working Capital: Minimum level of working capital required to circulate from one form to another: from cash to inventory, inventory to receivables, receivables to cash, and so on.

(b) Reserve Working Capital: Permanent working capital in excess of regular working capital. Reserve working capital arises from such contingencies as union strikes, recession, etc.

(ii) Temporary (or) Variable Working Capital: A business does not need the same level of current assets throughout the year. For example, during a slack time a manufacturing company does not need to invest as much into raw materials, work-in-process, or finished goods inventory because of the decrease in sales. On the other hand, during a peak season (e.g., Thanksgiving and Christmas holiday season), retail stores need higher levels of merchandise. As we can see, during the year the level of production and sales fluctuates, and thus, the need for current assets also fluctuates. The need for working capital in excess of permanent working capital results in temporary working capital.

Temporary working capital is also called variable, fluctuating, or cyclical working capital. Temporary working capital can be further dived into the following categories:

(a) Seasonal Working Capital: Temporary working capital required to meet seasonal demands.

(b) Special Working Capital: Temporary working capital required to meet special demands.

Temporary working capital differs from permanent working capital because of its cyclicality. As the result, temporary working capital usually requires a different source of financing than permanent working capital. While permanent working capital is usually financed through a long-term financing source such as equity capital and debt, temporary working capital is often financed by short-term funds.

4.2 Gross Vs Net Working Capital

Q8. Distinguish between Net working capital and Gross working capital.

Ans : **(Imp.)**

Net Working Capital	Gross Working Capital
1. Net Working Capital is the concept of qualitative nature.	1. Gross Working Capital is the concept of quantitative nature.
2. It is indicating the firm's ability to meet its operating expenses and current liability.	2. It is pointing out the total amount available for financing the current assets.
3. It expressed as current asset minus current liability.	3. It indicating the total sum of current assets.
4. It is concept very popular in accounting system.	4. It is a concept very popular in financial management.
5. Net concept suitable for sole trader and partnership firms.	5. Gross concept suitable for companies.
6. It is very useful to find out true the financial position of a company.	6. It cannot reveal the true financial position of a company.
7. Increase in bank loan cannot increase working capital. Retained profits, sale of fixed assets will increase net working capital.	7. Every increase in borrowing will increase the gross working capital. Under net concept, no change in working capital.

4.3 Determinants of Working Capital

Q9. Explain in detail the Determinants of working capital.

(OR)

What are the factors determining working capital.

Ans : **(July-21, May-19, Imp.)**

The factors influencing the working capital decisions of a firm may be classified as two groups, such as internal factors and external factors. The internal factors includes, nature of business size of business, firm's product policy, credit policy, dividend policy, and access to money and capital markets, growth and expansion of business etc. The external factors include business fluctuations, changes in the technology, infrastructural facilities, import policy and the taxation policy etc. These factors are discussed in brief in the following lines.

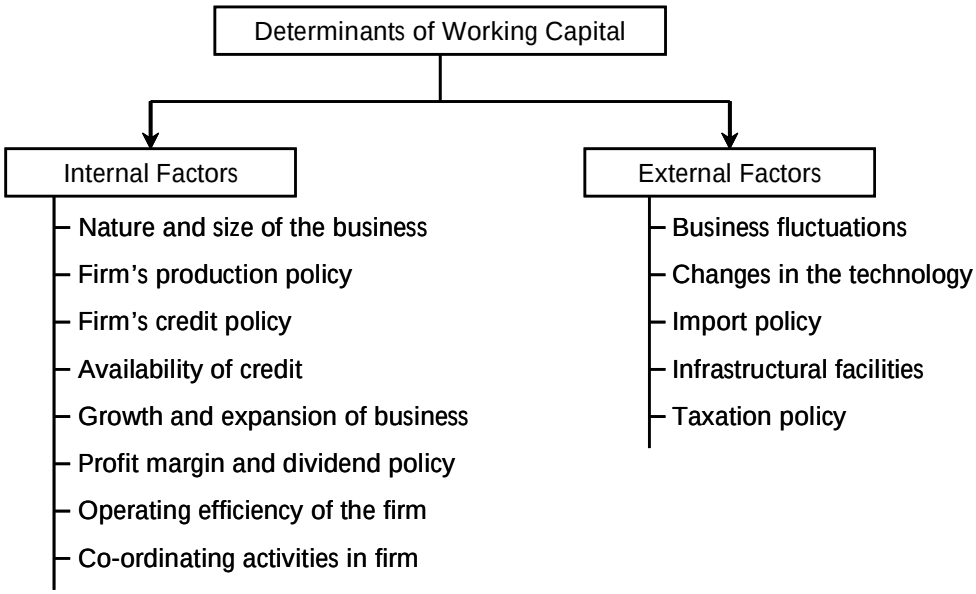


Fig.: Determinants of Working Capital

I. Internal Factors

1. Nature and size of the business

The working capital requirements of a firm are basically influenced by the nature and size of the business. Size may be measured in terms of the scale of operations. A firm with larger scale of operations will need more working capital than a small firm. Similarly, the nature of the business - influence the working capital decisions. Trading and financial firms have less investment in fixed assets. But require a large sum of money to be invested in working capital. Retail stores, business units require larger amount of working capital, where as, public utilities need less working capital and more funds to invest in fixed assets.

2. Firm's production policy

The firm's production policy (manufacturing cycle) is an important factor to decide the working capital requirement of a firm. The production cycle starts with the purchase and use of raw material and completes with the production of finished goods. On the other hand production policy is uniform production policy or seasonal production policy etc., also influences the working capital decisions. Larger the manufacturing cycle and uniform production policy –larger will be the requirement of working capital. The working capital requirement will be higher with varying production schedules in accordance with the changing demand.

3. Firm's credit policy

The credit policy of a firm influences credit policy of working capital. A firm following liberal credit policy to all customers require funds. On the other hand, the firm adopting strict credit policy and grant credit facilities to few potential customers will require less amount of working capital.

4. Availability of credit

The working capital requirements of a firm are also affected by credit terms granted by its suppliers – i.e. creditors. A firm will need less working capital if liberal credit terms are available to it. Similarly,

the availability of credit from banks also influences the working capital needs of the firm. A firm, which can get bank credit easily on favourable conditions, will be operated with less working capital than a firm without such a facility.

5. Growth and expansion of business

Working capital requirement of a business firm tend to increase in correspondence with growth in sales volume and fixed assets. A growing firm may need funds to invest in fixed assets in order to sustain its growing production and sales. This will, in turn, increase investment in current assets to support increased scale of operations. Thus, a growing firm needs additional funds continuously.

6. Profit margin and dividend policy

The magnitude of working capital in a firm is dependent upon its profit margin and dividend policy. A high net profit margin contributes towards the working capital pool. To the extent the net profit has been earned in cash, it becomes a source of working capital. This depends upon the dividend policy of the firm. Distribution of high proportion of profits in the form of cash dividends results in a drain on cash resources and thus reduces company's working capital to that extent. The working capital position of the firm is strengthened if the management follows conservative dividend policy and vice versa.

7. Operating efficiency of the firm

Operating efficiency means the optimum utilisation of a firm's resources at minimum cost. If a firm successfully controls operating cost, it will be able to improve net profit margin which, will, in turn, release greater funds for working capital purposes.

8. Co-ordinating activities in firm

The working capital requirements of a firm is depend upon the co-ordination between production and distribution activities. The greater and effective the co-ordinations, the pressure on the working capital will be minimized. In the absence of co-ordination, demand for working capital is reduced.

II. External Factors

1. Business fluctuations

Most firms experience fluctuations in demand for their products and services. These business variations affect the working capital requirements. When there is an upward swing in the economy, sales will increase, correspondingly, the firm's investment in inventories and book debts will also increase. Under boom, additional investment in fixed assets may be made by some firms to increase their productive capacity.

This act of the firm will require additional funds. On the other hand when, there is a decline in economy, sales will come down and consequently the conditions, the firm try to reduce their short-term borrowings. Similarly the seasonal fluctuations may also affect the requirement of working capital of a firm.

2. Changes in the technology

The technological changes and developments in the area of production can have immediate effects on the need for working capital. If the firm wish to install a new machine in the place of old system, the new system can utilise less expensive raw materials, the inventory needs may be reduced there by working capital needs.

3. Import policy

Import policy of the Government may also effect the levels of working capital of a firm since they have to arrange funds for importing goods at specified times.

4. Infrastructural facilities

The firms may require additional funds to maintain the levels of inventory and other current assets, when there is good infrastructural facilities in the company like, transportation and communications.

5. Taxation policy

The tax policies of the Government will influence the working capital decisions. If the Government follow regressive taxation policy, i.e. imposing heavy tax burdens on business firms, they are left with very little profits for distribution and retention purpose. Consequently the firm has to borrow additional funds to meet their increased working capital needs. When there is a liberalised tax policy, the pressure on working capital requirement is minimised. Thus the working capital requirements of a firm is influenced by the internal and external factors.

Q10. What are the advantages and disadvantages of working capital.

Ans : **(Imp.)**

Advantages

The main advantages of maintaining adequate amount of working capital are as follows:

1. Cash Discount

If a proper cash balance is maintained, the business can avail the advantage of cash discount by paying cash for the purchase of raw materials and merchandise. It will result in reducing the cost of production.

2. Creates a Feeling of Security and Confidence

The proprietor or officials or management of a concern are quite carefree, if they have proper working capital arrangements because they need not worry for the payment of business expenditure or creditors. Adequate working capital creates a sense of security, confidence and loyalty, not only throughout the business itself, but also among its customers, creditors and business associates.

3. 'Must' for Maintaining Solvency and Continuing Production

In order to maintain the solvency of the business, it is but essential that the sufficient amount of fund is available to make all the payments in time as and when they are due. Without ample working capital, production will suffer, particularly in the era of cut throat competition, and a business can never flourish in the absence of adequate working capital.

4. Sound Goodwill and Debt Capacity

It is common experience of all prudent businessmen that promptness of payment in business creates goodwill and increases the debt of the capacity of the business. A firm can raise funds from the market, purchase goods on credit and borrow short-term funds from bank, etc. If the investor and borrowers are confident that they will get their due interest and payment of principal in time.

5. Easy Loans from the Banks

An adequate working capital i.e. excess of current assets over current liabilities helps the company to borrow unsecured loans from the bank because the excess provides a good security to the unsecured loans, Banks favour in granting seasonal loans, if business has a good credit standing and trade reputation.

6. Distribution of Dividend

If company is short of working capital, it cannot distribute the good dividend to its shareholders inspite of sufficient profits. Profits are to be retained in the business to make up the deficiency of working capital. On the other contrary, if working capital is sufficient, ample dividend can be declared and distributed. It increases the market value of shares.

7. Exploitation of Good Opportunity

In case of adequacy of capital in a concern, good opportunities can be exploited e.g., company may make off-season purchases resulting in substantial savings or it can fetch big supply orders resulting in good profits.

8. Meeting Unseen Contingency

Depression shoots the demand of working capital because sock piling of finished goods become necessary. Certain other unseen contingencies e.g., financial crisis due to heavy losses, business oscillations, etc. can easily be overcome, if company maintains adequate working capital.

9. High Morale

The provision of adequate working capital improves the morale of the executive because they have an environment of certainty, security and confidence, which is a great psychological, factor in improving the overall efficiency of the business and of the person who is at the hell of fairs in the company.

10. Increased Production Efficiency

A continuous supply of raw material, research programme, innovations and technical development and expansion programmes can successfully be carried out if adequate working capital is maintained in the business. It will increase the production efficiency, which will, in turn increases the efficiency and morale of the employees and lower costs and create image among the community.

11. Regular Supply of Raw Materials

Sufficient working capital ensures regular supply of raw materials and continuous production.

12. Regular Payment of Salaries, Wages and Other Day-to-Day Commitments

A company which has ample working capital can make regular payment of salaries, wages and other day-to-day commitments which raises the morale of its employees, increases their efficiency, reduces wastage's and costs and enhances production and profits.

Disadvantages

The disadvantages suffered by a company with excessive working capital are as follows:

1. Heavy Investment in Fixed Assets

A concern may invest heavily in their fixed asset which is not justified by actual sales. This may create situation of over capitalisation.

2. Reckless Purchase of Materials

Inventory is purchased recklessly which results in dormant slow moving and obsolete inventory. At the same time it may increase the cost due to mishandling, waste, theft, etc.

3. Speculative Tendencies

Speculative tendencies may increase and if profit is increased dividend distribution will also increase. This will hamper the image of a concern in future when speculative loss may start.

4. Liberal Credit

Due to liberal credit, size of accounts receivables will also increase. Liberal credit facility can increase bad debts and wrong practices will start, regarding delay in payments.

5. Carelessness

Excessive working capital will lead to carelessness about costs which will adversely affect the profitability.

Q11. Explain the various methods of working capital.

Ans :

There are 3 methods for assessing the working capital requirement as explained below:

(a) Percent of Sales Method

Based on the past experience, some percentage of sales may be taken for determining the quantum of working capital

(b) Regression Analysis Method

The relationship between sales and working capital and its various components may be plotted on Scatter diagram and the average percentage of past 5 years may be ascertained. This average percentage of sales may be taken as working capital. Similar exercise may be carried out at the beginning of the year for assessing the working capital requirement. This method is suitable for simple as well as complex situations.

(c) Operating Cycle Method

It is also known as working capital cycle. Operating cycle is the total time gap between the purchase of raw material and the receipt from Debtors.

The working capital estimation as per the method of operating cycle, is the most systematic

and logical approach. In this case, the working capital estimation is made on the basis of analysis of each and every component of the working capital individually. As already discussed the working capital, required to sustain the level of planned operations, is determined by calculating all the individual components of current assets and current liabilities.

The calculation of net working capital may also be shown as follows ;

Working Capital = Current Assets – Current Liabilities
= (Raw Materials Stock + Work-in-progress Stock + Finished Goods Stock + Debtors + Cash Balance) – (Creditors + Outstanding Wages + Outstanding Overheads).

Q12. What is an operating cycle.

Ans : **(June-18, Imp.)**

The working capital requirement of a firm depends, to a great extent upon the operating cycle of the firm. The duration of time required to complete the sequence of events right from purchase of raw material/goods for cash to the realization of sales in cash is called the operating cycle or working capital cycle.

The length of the operating cycle of a manufacturing firm is the sum of the following:

1. **Inventory Conversion Period:** The Inventory Conversion Period is the total time needed for Producing and selling the product.
   i) Raw Material Conversion Period.
   ii) Work-in-progress Conversion Period.
   iii) Finished Goods Conversion Period.
2. **Debtors Conversion Period:** It is the time required to collect the outstanding amount from the customers.

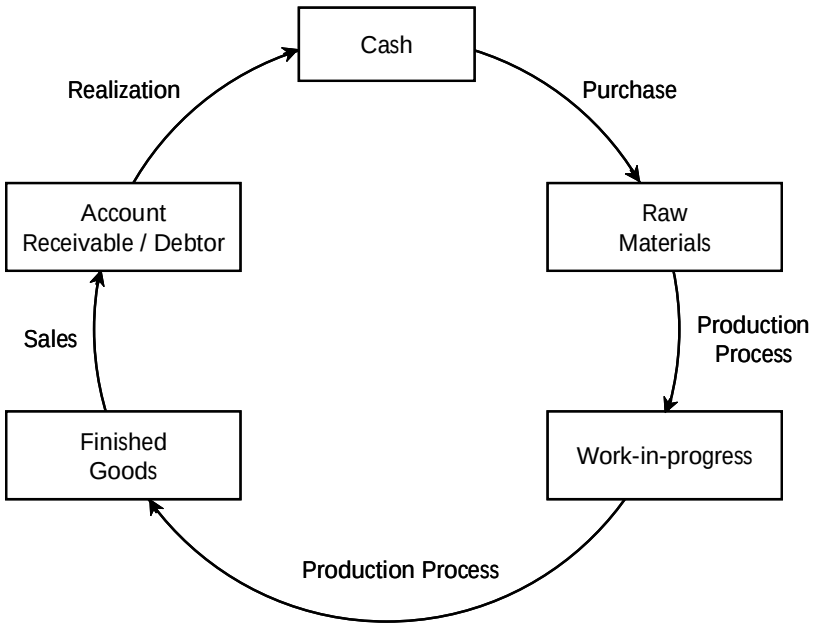


Fig. : Operating Cycle

The total of Debtors Conversion Period and Inventory Conversion Period is referred to as Gross Operating Cycle.

It can be determined by adding the number of days required for each stage in the cycle. In case of manufacturing concerns, working capital is required to cater to the following needs of business in order:

(i) Raw materials are to be purchased for cash.

(ii) Production process converts raw materials into work-in-process.

(iii) Work-in-process is converted into finished goods, during course of time through production process.

(iv) Finished goods are converted into accounts receivable (debtors and bills receivable) through sale.

(v) Accounts receivable are realized into cash in due course of time.

The above operating cycle is repeated again and again over the period depending upon the nature of the business and type of product etc.

Determination of Operating Cycle

The duration of the operating cycle for the purpose of estimating working capital is equal to the sum of the durations allowed by the suppliers.

Working capital cycle can be expressed as:

$$= \boxed{R + W + F + D - C}$$

Where,

$$R = \text{Raw material Storage Period} = \frac{\text{Average stock of raw materials}}{\text{Average cost of production per day}}$$

$$W = \text{Work-in-Progress Holding Period} = \frac{\text{Average work-in-progress inventory}}{\text{Average cost of production per day}}$$

$$F = \text{Finished goods Storage Periods} = \frac{\text{Averagestock of finished goods}}{\text{Average cost of goods sold per day}}$$

$$D = \text{Debtor Collection Period} = \frac{\text{Average Book Debts}}{\text{Average credit sales per day}}$$

$$C = \text{Credit Period Availed} = \frac{\text{Average trade creditors}}{\text{Average credit purchases per day}}$$

Q13. Explain the format of working capital.

(OR)

Draw the proforma of working capital.

Ans :

Proforma of Working Capital Requirements

Particulars		Amount	Amount
I.	**Current Assets**		
(a)	Minimum cash and bank balance		xxx
(b)	Inventories (stock):		
	Raw materials	xxx	
	Work-in-progress	xxx	
	Finished goods	xxx	xxx
(c)	Receivables:		
	Debtors	xxx	
	Bills	xxx	xxx
	Total current assets (Gross WC)		
	CA = (a + b + c)		xxx
II.	**Current Liabilities**		
	Creditors for purchases	xxx	
	Creditors for wages	xxx	
	Creditors for overhead	xxx	
	Total current liabilities (CL)		xxx
	Net working capital (CA - CL)		xxx
	Add: Margin for contingency (safety margin)		xxx
	Net working capital required		xxx

PROBLEMS ON WORKING CAPITAL

1. Determine the working required to finance a level of activity of 1,80,000 units of output for a year. The cost structure is as under :

Particulars	Cost per unit (Rs.)
Raw Materials	20
Direct Labour	5
Overheads (including depreciation of Rs. 5)	15
Total cost	**40**
Profit	10
Selling Price	**50**

Additional Information :

- Minimum desired cash balance is Rs. 20,000
- Raw materials are held in stock, on an average, for 2 months
- Work-in-progress (assume 50 per cent completion stage) will approximate to half-a-month production
- Finished goods remain in warehouse, on an average for a month
- Suppliers for materials extend a month's credit and debtors are provided 2 months credit. The cash sales are 25 per cent of total sales
- There is a time lag in payment of wages for a month and half-a-month in the case of overheads.

Sol : **(Imp.)**

Estimation of Working Capital

	Particulars	Amount (in Rs.)	Amount (in Rs.)
A.	**Current Assets:**		
	Raw materials : (1,80,000 × 20 × 2 / 12)	6,00,000	
	Work-in-process: $\left(\frac{1,80,000 \times 35 \times 0.5}{12} \times \frac{50}{100}\right)$	1,31,250	
	Finished Goods: (1,80,000 × 35 × 1/12)	5,25,000	12,56,250
	Debtors (75% of total units produced):		
	(1,35,000 × 35 × 2 / 12)		7,87,500
	Cash Balance		20,000
	Total Current Assets (A)		20,63,750
B.	**Current Liabilities:**		
	Suppliers: (1,80,000 × 20 × 1 / 12)		3,00,000
	Wages: (1,80,000 × 5 × 1 / 12)		75,000
	Overheads: (1,80,000 × 10 × 0.5 / 12)		75,000
	Total Current Liabilities (B)		4,50,000
C.	**Working capital (A – B)**		16,13,750

2. Sunil and co., are engaged in large scale retail business. From the following information, you are required to forecast their working capital requirements.

Project annual sales	**` 130 lakhs**
Average of net profit on cost of sales	**25 %**
Average period allowed to debtors	**8 week**
Average period allowed by creditors	**4 weeks**

Average stock carrying (in terms of sales 8 weeks requirements)

Add 10% to compute figures to allow for contingencies.

Sol :

Calculation of expected working capital requirements.

Statement of Working Capital Requirements

Particulars	**Amount (`)**
Current Assets:	
Debtors (8 weeks) $\left[97,50,000 \times \frac{8}{52}\right]$	15,00,000
Stock (8 weeks) $\left[97,50,000 \times \frac{8}{52}\right]$	15,00,000
	30,00,000
Less: Current Liabilities:	
Creditors (4 weeks) $\left[97,50,000 \times \frac{4}{52}\right]$	7,50,000
Net Working Capital (CA – CL)	22,50,000
Add: 10% for Contingencies	2,25,000
Working Capital required	**24,75,000**

Working Notes

(a) Sales = ` 130,00,000

Profit = 1,30,00,000 × 25% = 32,50,000

Cost of sales = 1,30,00,000 – 32,50,000

= ` 97,50,000

(b) Depending on the nature of the firm cost of sales must be considered as purchases.

(c) Profits have been ignored because funds obtained from profits may or may not be utilized as "working capital".

3. The board of directors of Aravind mills limited request you to prepare a statement showing the working capital requirements for a level of activity of 30,000 units of output for the year. The cost structure for the company's product for the above mentioned activity level is given below.

Particulars	Cost per Unit (Rs.)
Raw materials	20
Direct labour	5
Overheads	15
Total	40
Profit	10
Selling price	50

(a) Past experience indicates that raw materials are held in stock, on an average for 2 months.

(b) Work in progress (100% complete in regard to materials and 50% for labour and overheads) will be half a month's production.

(c) Finished goods are in stock on an average for 1 month.

(d) Credit allowed to suppliers: 1 month.

(e) Credit allowed to debtors: 2 months.

(f) A minimum cash balance of Rs 25,000 is expected to be maintained.

Prepare a statement of working capital requirements.

Sol :

Output per annum = 30,000 units

Output per annum = 12% of 30,000 = 2,500 units

Raw materials p.m. Rs. 20 × 2,500 = 50,000

Labour p.m. Rs. 5 × 2,500 = 12,500

Overheads p.m. Rs. 15 × 2,500 = 37,500

1,00,000

Statement of Working Capital Requirements

Particulars	Rs.	Rs.
Current assets		
Stock of raw materials (2 months) 50,000 × 2		1,00,000
Work-in-progress (1/2 months)		
Raw materials = 50,000 × ½	25,000	

Labour = 12,500 × ½ × 50/100	3,125	
Overheads = 37,500 × ½ × 50/100	9,375	37,500
Stock of finished goods (1 month) 1,00,000 × 1		1,00,000
Debtors (2 month) 1,00,000 × 2		2,00,000
Cash balance required		25,000
		4,62,500
Less: Current Liability		
Creditors (1 month) 50,000 × 1		50,000
Working Capital		4,12,500

4. Prepare an estimate of working capital requirement from the following information of a trading concern.

Projected annual sales	**10,000 units**
Selling price	**Rs. 10 per unit**
Percentage of net profit on sales	**20%**
Average credit period allowed to customers	**8 weeks**
Average credit period allowed by suppliers	**4 weeks**
Average stock holding in terms of sales requirements	**12 weeks**
Allow 10% for contingencies	

Sol :

Statement of Working Capital Requirements

Particulars	**Amount**
Current Assets	
Debtors (8 weeks) $\frac{80,000 \times 8}{52}$ (at cost)	12,308
Stock (12 weeks) $\frac{80,000 \times 12}{52}$	18,462
	30,770
Less : Current Liability	
Credits (4 weeks) $\frac{80,000 \times 4}{52}$	6,154
	24,616
Add 10% for contingencies	2,462
(Net Working Capital)	27,078

Working Notes :

Sales = 10,000 × 10 = Rs. 1,00,000

Profit 20% of Rs. 1,00,000 = Rs. 20,000

Cost of Sales = Rs. 1,00,000 – 20,000 = Rs. 80,000

As it is a trading concern, cost of sales is assumed to be the purchases.

5. V.S.M. Ltd. is engaged in large scale retail business. From the following informations you are required to forecast their working capital requirements.

Projected Annual Sales	**Rs. 130 lakhs**
Percentage of net profit on cost of sales	**25%**
Average credit period allowed to debtors	**8 weeks**
Average credit period allowed by creditors	**4 weeks**

Average stock carrying 8 weeks (in terms of sales requirements)

Add : 10% to computed figures to allow for contingencies.

Sol :

Sales	1,30,00,000
Gross profit 25% of sales	32,50,000
Cost of goods sold	97,50,000

Statement showing working capital

Particulars		**Rs.**
Current Assets		
(i)	Debtors (97,50,000 × $\frac{8}{52}$)	15,00,000
(ii)	Stock (97,50,000 × $\frac{8}{52}$)	15,00,000
	Total current assets	30,00,000
(–)	**Current Liabilities**	
	Creditors (97,50,000 × $\frac{4}{52}$)	7,50,000
	Net working capital	22,50,000
Add:	Contingencies 10%	2,25,000
	Net working capital required	**24,75,000**

6. A Proforma cost sheet of R.R. & Co. Ltd., provides the following information. You are required to estimate the working capital needed to finance a level of activity of 52,000 units of production.

Particulars	Cost per unit (Rs.)
Raw materials	40
Direct labour	15
Overheads (excluding depreciation)	30
Total cost	**85**
Profit	30
Selling price	**115**

Additional information:

Average raw materials in stock: one month; average materials-in-process (RMs 100% and remaining 50 per cent completion stage): half a month; average finished goods in stock: one month.

Credit allowed by suppliers: one month; credit allowed to customers: two months; Time lag in payment of wages: one-and half-weeks; time lag in payment of overhead expenses: one month; half of the sales is on cash basis. Cash balance is expected to be Rs. 12,500. You may assume that production is carried on evenly throughout the year and wages and overhead expenses accrue similarly. 50% sales are on credit.

Sol :

Statement of Working Capital

Particulars			Amount (in Rs.)	Amount (in Rs.)
A.	**Estimation of Current Assets**			
	(i)	Raw materials inventory: one month: $\left(52000 \times 40 \times \frac{4}{52}\right)$		1,60,000
	(ii)	Work-in-process inventory: Half a month		
		Raw materials (52,000 × 40 × 2 / 52) =	80,000	
		Direct labour (52,000 × 7.5 × 2 / 52) =	15,000	
		Overheads (52,000 × 15 × 2 / 52) =	30,000	
				1,25,000
	(iii)	Finished goods inventory: one month:		
		(52,000 × 85 × 4/52)		3,40,000
	(iv)	Debtors: two months: (26,000 × 85 × 8/52)		3,40,000
	(c)	Cash balance required		12,500
	Total Current Assets (A)			**9,77,500**

B.	**Estimation of Current Liabilities**		
(i)	Creditors: one month : (52,000 × 40 × 4/52)		1,60,000
(ii)	Expenses: Labour $\left(52000 \times 15 \times \frac{1.5}{52}\right)$ =	22,500	
	Overheads $\left(52000 \times 30 \times \frac{4}{52}\right)$ =	1,20,000	1,42,500
	Total current liabilities (B)		3,02,500
	Working capital (A – B)		6,75,000
	Add: Contingency		Nil
	Net Working Capital		6,75,000

4.4 MANAGEMENT OF CASH

Q14. Define cash management.

Ans : **(Imp.)**

Introduction

Cash management is one of the key areas of working capital management. Cash is the most liquid current assets. Cash is the common denominator to which all current assets can be reduced because the other major liquid assets, i.e. receivable and inventory get eventually converted into cash. This underlines the importance of cash management. The term "Cash" with reference to management of cash is used in two ways. In a narrow sense cash refers to coins, currency, cheques, drafts and deposits in banks. The broader view of cash includes near cash assets such as marketable securities and time deposits in banks. The reason why these near cash assets are included in cash is that they can readily be converted into cash. Usually, excess cash is invested in marketable securities as it contributes to profitability.

Cash is one of the most important components of current assets. Every firm should have adequate cash, neither more nor less. Inadequate cash will lead to production interruptions, while excessive cash remains idle and will impair profitability. Hence, the need for cash management.

Thus, the aim of cash management is to maintain adequate cash balances at one hand and to use excess cash in some profitable way on the other hand.

Q15. State the various motives of cash management.

(OR)

Explain the motives for holding cash.

Ans : **(Imp.)**

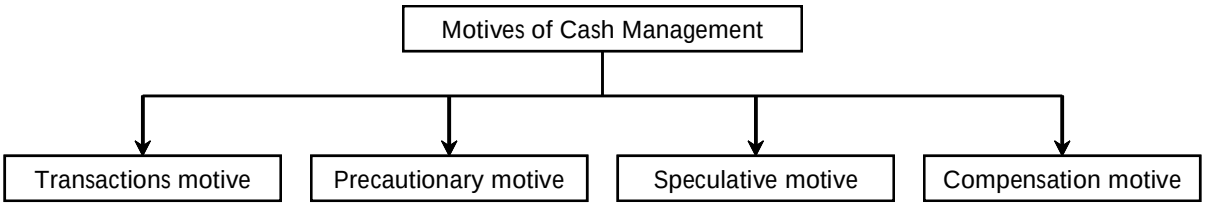
Motives

Motives (or) desires for holding cash refer to various purposes. The purpose may be different from person to person and situation to situation. There are four important motives to hold cash.

(a) Transactions motive

This motive refers to the holding of cash, to meet routine cash requirements in the ordinary course of business. A firm enters into a number of transactions which requires cash payment. For example, purchase of materials, payment of wages, salaries, taxes, interest etc. Similarly, a firm receives cash from cash sales, collections from debtors, return on investments etc. But the cash inflows and cash outflows do not perfectly synchronise. Sometimes, cash receipts are more than payments while at other times payments exceed receipts.

The firm must have to maintain sufficient (funds) cash balance if the payments are more than receipts. Thus, the transactions motive refers to the holding of cash to meet expected obligations whose timing is not perfectly matched with cash receipts. Though, a large portion of cash held for transactions motive is in the form of cash, a part of it may be invested in marketable securities whose maturity conform to the timing of expected payments such as dividends, taxes etc.



(b) Precautionary motive

Apart from the non-synchronisation of expected cash receipts and payments in the ordinary course of business, a firm may be failed to pay cash for unexpected contingencies. For example, strikes, sudden increase in cost of raw materials etc. Cash held to meet these unforeseen situations is known as precautionary cash balance and it provides a caution against them.

The amount of cash balance under precautionary motive is influenced by two factors i.e. predictability of cash flows and the availability of short term credit. The more unpredictable the cash flows, the greater the need for such cash balances and vice versa. If the firm can borrow at short-notice, it will need a relatively small balance to meet contingencies and vice versa. Usually precautionary cash balances are invested in marketable securities so that they contribute something to profitability.

(c) Speculative motive

Sometimes firms would like to hold cash in order to exploit, the profitable opportunities as and when they arise. This motive is called as speculative motive. For example, if the firm expects that the material prices will fall, it can delay the purchases and make purchases in future when price actually declines. Similarly, with the hope of buying securities when the interest rate is expected to decline, the firm will hold cash. By and large, firms rarely hold cash for speculative purposes.

(d) Compensation motive

This motive to hold cash balances is to compensate banks and other financial institutes for providing certain services and loans. Banks provide a variety of services to business firms like clearance of cheques, drafts, transfer of funds etc. Banks charge a commission or fee for their services to the customers as indirect compensation. Customers are required to maintain a minimum cash balance at the bank.

This balance cannot be used for transaction purposes. Banks can utilise the balances to earn a return to compensate their cost of services to the customers. Such balances are compensating balances. These balances are also required by some loan agreements between a bank and its customers. Banks require a chest to maintain a minimum cash balance in his account to compensate the bank when the supply of credit is restricted and interest rates are rising.

Thus cash is required to fulfil the above motives. Out of the four motives of holding cash balances, transaction motive and compensation motives are very important. Business firms usually do not speculate and need not have speculative balances. The requirement of precautionary balances can be met out of short-term borrowings.

Q16. State the objectives of cash management.

Ans :

The basic objectives of cash management are two-fold:

1. Meeting the Payment Schedule

In the normal course of business firms have to make payments of cash on a continuous and regular basis to suppliers of goods, employees and so on. At the same time, there is a constant inflow of cash through collections from debtors. A basic objective of cash management is to meet the payment schedule, i.e., to have sufficient cash to meet the cash disbursement needs of a firm. The importance of sufficient cash to meet the payment schedule can hardly be over-emphasized.

The advantages of adequate cash are:

i) It prevents insolvency or bankruptcy arising out of the inability of a firm to meet its obligations

ii) The relationship with the bank is not strained;

iii) It helps in fostering good relations with trade creditors and suppliers of raw materials, as prompt payment may help their own cash management;

iv) A trade discount can be availed of if payment is made within the due date;

v) It leads to a strong credit rating which enables the firm to purchase goods on favourable terms and to maintain its line of credit with banks and other resources of credit;

vi) To take advantage of favourable business opportunities that may be available periodically;

vii) Finally, the firm can meet unanticipated cash expenditure with a minimum of strain during ' emergencies, such as strikes, fires or a new marketing campaign by competitors. Keeping large cash balances, however, implies a high cost; the advantages of prompt payment of cash can well be realized by sufficient and not excessive cash.

2. Minimizing Funds Committed to Cash Balances

The second objective of cash management is to minimize cash balances. In minimizing the cash balances two conflicting aspects have to be reconciled. A high level of cash balances will, as shown above, ensure prompt payment together with all the advantages. But it also implies that large funds will remain idle, as cash is a non-earning asset and the firm will have to forego profits. A low level of cash balances, on the other hand, may mean failure to meet .the payment schedule. The aim of cash management should be to have an optimal amount of cash balances.

Q17. Explain the importance of cash management.

Ans : **(Imp.)**

Cash management consists of taking the necessary actions to maintain adequate levels of cash to meet operational and capital requirements and to obtain the maximum yield on short-term investments of pooled, idle cash. A good cash management program is a very significant component of the overall financial management of a municipality. Such a program benefits the city or town by increasing non-tax revenues, improving the control and superintendence of cash, increasing contacts with members of the financial community and lowering borrowing costs, while at the same time maintaining the safety of the municipality's funds.

The reasons due to which cash management is important for a company:

1. Cash management is particularly important for those companies who make sales as well as purchase on credit, since creditor can demand money anytime and therefore it is important for a company to manage cash.
2. Cash management is also necessary to deal with contingencies such as fire, breakdown of machinery, payment of compensation in case of any lawsuit going against the company etc.
3. In this dynamic business world there is always a scope of takeover that is company can buy other company if it thinks that it is undervalued, cash will play a key role for successful takeover.
4. Since global commodity prices are fluctuating companies need cash in order to take advantage of decline in the raw material prices of the company's product.
5. Cash management assumes greater importance when company has taken debt, because interest payments are fixed and company has to pay it, any delay in interest payment or principal repayment of debt can even result in company becoming bankrupt, therefore cash should be there for payment of such expense.

4.5 CASH BUDGET

Q18. Define Cash Budget. Explain the uses of Cash Budget.

Ans :

Meaning

A cash budget is a significant technique used by the firms to regulate the receipts and payments of cash. Cash budget is used forecast the cash receipts and payments in future. Cash budget is useful to financial manager in evaluating expected receipts and payments in future.

Both short-term and long-term estimations are important in the process of cash planning. Receipts and payments and adjusted net income methods can be used to estimate both short-term and long-term cash.

Uses

Cash budget acts as an important forecasting device in cash management. Firms can easily plan and control the use of cash with the help of cash budget. It represents the cash position of the firm in a particular time period. Cash budget is useful for the firm in different ways such as,

1. To manage the timings of cash requirements, it ascertains the time period where shortage of cash or abnormal requirement of cash exists.
2. It also helps in identifying the periods in which firm can get excess amount of cash.
3. Cash budget allows the firm to make payments to creditors and to avail cash discounts.
4. In times of surplus funds, firm can meet its obligations by formulating dividend policy.
5. It is also useful for managing funds on suitable terms and conditions.
6. In addition to above all, it is useful in avoiding the accumulation of surplus funds.

Hence, in absence of efficient cash budget in the firm, it lacks in planning and face higher risk due to organizational inefficiency.

Q19. Explain the importance of cash budget in cash management.

Ans : **(June-18, Imp.)**

Cash budget is an important tool in the hands of financial management for the planning and control of the working capital to ensure the solvency of the firm.

The importance of cash budget may be summarized as follow:

1. Helpful in Planning

Cash budget helps planning for the most efficient use of cash. It points out cash surplus or deficiency at selected point of time and

enables the management to arrange for the deficiency before time or to plan for investing the surplus money as profitable as possible without any threat to the liquidity.

2. Forecasting the Future needs

Cash budget forecasts the future needs of funds, its time and the amount well in advance. It, thus, helps planning for raising the funds through the most profitable sources at reasonable terms and costs.

3. Maintenance of Ample cash Balance

Cash is the basis of liquidity of the enterprise. Cash budget helps in maintaining the liquidity. It suggests adequate cash balance for expected requirements and a fair margin for the contingencies.

4. Controlling Cash Expenditure

Cash budget acts as a controlling device. The expenses of various departments in the firm can best be controlled so as not to exceed the budgeted limit.

5. Evaluation of Performance

Cash budget acts as a standard for evaluating the financial performance.

6. Testing the Influence of proposed Expansion Programme

Cash budget forecasts the inflows from a proposed expansion or investment programme and testify its impact on cash position.

7. Sound Dividend Policy

Cash budget plans for cash dividend to shareholders, consistent with the liquid position of the firm. It helps in following a sound consistent dividend policy.

8. Basis of Long-term Planning and Co-ordination

Cash budget helps in co-coordinating the various finance functions, such as sales, credit, investment, working capital etc. it is an important basis of long term financial planning and helpful in the study of long term financing with respect to probable amount, timing, forms of security and methods of repayment.

4.5.1 Preparation of Cash Budgets

4.5.1.1 Receipts and Payment Method

Q20. Explain the various methods to preparation of cash budget.

Ans : **(May-19)**

Preparation of Cash Budget

The cash budget can be prepared by any of the following methods,

1. Receipts and payments method.
2. The adjusted profit and loss method.
3. The balance sheet method.

1. Receipts and Payments Method

In case of this method the cash receipts from various sources and the cash payments to various agencies are estimated. In the opening balance of cash, estimated cash receipts are added from the total, the total of estimated cash payments are deducted to find out the closing balance. If monthly/quarterly cash budgets are to be prepared, first of all the closing balance of first month/quarter will be computed which will be the opening balance for the next month/quarter.

Similarly the closing balance for 2nd month/ quarter can be known and so on. The estimated receipts may be from cash sales, credit collections, interest, dividend, miscellaneous receipts, issue of share capital, loans etc. Estimated disbursements may be regarding materials, labour, overheads, granting loan or repayment of loan, payment of advance tax, purchase of assets etc.

2. Adjusted Profit and Loss Method

In case of this method the cash budget is prepared on the basis of opening cash and bank balances, projected profit and loss account and the balances of the various assets and liabilities.

Cash from operations is not that figure of profit which is shown by the profit and loss account, but is the figure of profit as adjusted in the light on non-cash items such as depreciation, loss on sale of capital assets, preliminary expenses written off from P&L A/c etc.

Since these items do not affect cash position though they have been charged to the profit and loss account, they are added back to the profit or deducted from loss, as the case may be. Issue of new shares, realisation from sale of fixed assets or raising long term loans are taken as other sources of cash. Similarly, redemption of preference shares (in case of redeemable preference shares), payment of long term loans, purchase of fixed assets, payment of dividends etc., are taken as application of cash.

3. Balance Sheet Method

With the help of budgeted balances at the end except cash and bank balances, a budgeted balance sheet can be prepared and the balancing figure would be the estimated closing cash/bank balance. Thus, under this method, closing balances other than cash/bank will have to be found out first to be put in the budgeted balance sheet. This can be done by adjusting the anticipated transactions of the year in the opening balances.

Q21. Explain the Proforma of Cash Budget.

Ans :

Particulars	X Month	Y Month	Z Month
1) Opening Cash Balance			
2) **Estimated Cash Receipts**			
i) Cash Sales			
ii) Cash Collection from Debtors			
iii) Interest Received from Investments			
iv) Cash inflow on Issue of New Securities			
v) Raising of Loans			
vi) Sale of Assets			
vii) Dividend			
3) Total Receipts available during the month (1 + 2)			
4) **Estimated Cash Payments**			
i) Payment for Cash Purchases			
ii) Payment to Sundry Creditors for Creditors Purchases			
iii) Payment for Wages and Salaries			
iv) Payment for other Administrative Expenses			
v) Payment in the nature of Capital Expenditure			
vi) Loan Repayment			
vii) Dividend Payment			
viii) Payment of Interest on Loan			
Total Cash Payments			
5) Closing Cash Balance (3 - 4)			

Table : Format of cash budget

Q22. Explain the various steps in receipts and payments method of preparing cash budget.

Ans : **(Imp.)**

Under this method all Cash receipts and disbursements for the enterprise for a budget period are estimated. Thereafter, all estimated cash receipts are added to the opening balance of cash and all estimated cash payments are deducted from this to arrive at the closing balance of cash.

While preparing a cash budget under this method, the following steps must be taken:

(a) Determination of the Period of Budget

Normally a cash budget is prepared for one year but it may also be prepared monthly, quarterly or half yearly, depending on the need of the business. For seasonal industries it may be prepared for a particular season. Therefore, before preparing a cash budget it is necessary to take a decision regarding the period of the budget.

(b) Estimating the Cash Receipts

The second step is to estimate the cash receipts from various sources during the period. The major sources of cash receipts are cash sales, collection from debtors, income from investments, receipts from issue of shares and debentures etc.

The principal source of cash for a business is sales. Therefore, the accuracy of cash budget depends on accuracy of sales forecast. The management, on the basis of past experience, may forecast the amount of sales for cash and for credit. Timing of cash inflow from credit sales depends on terms of sale and customer's past behavior in paying their debts. Although the timing of cash inflow from customers cannot be predicted very accurately, the management can make a fair estimate of cash inflow by studying the debt paying habits of its customers.

(c) Estimating the Cash Payments

The third step is to estimate the cash payments that may be made during the period. Payments may be made for cash purchases, payment to creditors, payment for wages, payment for office and selling expenses, payment for taxes, and payment for the purchase of assets etc. Probable timing of payment of each of these payments is also estimated on the basis of past experience. For example, if the period of credit allowed by creditors is one month, the payment for the credit purchases of January will be made in the month of February.

After estimating the amount of cash receipts and cash payments, all estimated cash receipts are added to the opening balance of cash and all estimated cash payments are deducted from this to arrive at the figure of closing balance of cash.

PROBLEMS

7. Prepare a cash budget for the month of May, June and July 2019 on the basis of the following information.

Month	Credit Sales	Credit Purchase	Wages	Manufacturing Expenses	Office Expenses	Selling Expenses
March	60,000	36,000	90,000	4,000	2,000	4,000
April	62,000	38,000	8,000	3,000	1,500	5,000
May	64,000	33,000	10,000	4,500	2,500	4,500
June	58,000	35,000	8,500	3,500	2,000	3,500
July	56,000	39,000	9,500	4,000	1,000	4,500
August	60,000	34,000	8,000	3,000	1,500	4,500

Additional Information :

- **Cash balance on 1st May, 2019 $8,000.**
- **Plant costing `16,000 is due for delivery in July, payable 10% on delivery and balance after 3 months.**
- **Advance tax of `8,000 each is payable in March and June.**
- **Period of credit allowed (i) by suppliers – two months and (ii) to customers – one month.**
- **Lag in payment of manufacturing expenses 1/2 month.**
- **Lag in payment of office and selling expenses – one month.**

Sol :

Particulars	May 2019 `	June 2019 `	July 2019 `
Opening Balance	8,000	13,750	12,250
Estimated Cash Receipts :			
Debtors (Credit Sales)	62,000	64,000	58,000
Total (A)	**70,000**	**77,750**	**70,250**
Estimated Cash Payment			
Credits (Credit Purchase)	36,000	38,000	33,000
Wages	10,000	8,500	9,500
Manufacturing Expenses	3,750	4,000	3,750
Office Expenses	1,500	2,500	2,000
Selling Expenses	5,000	4,500	3,500
Plant Payment on delivery	–	–	1,600
Advance Tax	–	8,000	–
Total (B)	**56,250**	**65,500**	**53,350**
Closing Balance (A – B)	**13,750**	**12,250**	**16,900**

Note:

(i) One-half of the manufacturing expenses of April and one-half of May shall be paid in May and so on.

(ii) Office and selling expenses of April shall be paid in May and so on.

8. A newly started company Quick Co. Ltd., wishes to prepare cash budget from January. Prepare a cash budget for the first six months from the following estimated revenue and expenditure:

Month 1999	Total Sales Rs.	Material Rs.	Wages Rs.	Production Overheads Rs.	Selling and Distribution Overheads Rs.
January	20,000	20,000	4,000	3,200	800
February	22,000	14,000	4,400	3,300	900
March	24,000	14,000	4,600	3,300	800
April	26,000	12,000	4,600	3,400	900
May	28,000	12,000	4,800	3,500	900
June	30,000	16,000	4,800	3,600	1,000

- **Cash balance on 1st January 1999 was Rs. 10,000. A new machine is to be installed at Rs. 30,000 on credit, to be repaid by two equal installments in March and April.**
- **Sales commission @ 5% on total sales is to be paid within the month following actual sales. Rs. 10,000 being the amount of 2nd call may be received in March. Share premium amounting to Rs.2, 000 is also obtainable with 2nd call.**
- **Period of credit allowed by suppliers 2 months**
- **Period of credit allowed to customers 1 month**
- **Delay in payment of overheads 1 month**
- **Delay in payment of wages 1/2 month**
- **Assume cash sales to be 50% of total sales.**

Sol : **(Imp.)**

Quick Co. Limited
Cash Budget
For the period January to June 1999

Particulars		Jan. Rs.	Feb. Rs.	Mar. Rs.	April Rs.	May Rs.	June Rs.
A.	Balance B/d	10,000	18,000	29,800	20,000	6,100	8,800
B.	**Receipts :**						
	Cash Sales (50%)	10,000	11,000	12,000	13,000	14,000	15,000
	Debtors –	–	10,000	11,000	12,000	13,000	14,000
	Capital	–	–	10,000	–	–	–
	Share Premium	–	–	2,000	–	–	–
	Total (A + B)	20,000	39,000	64,800	45,000	33,100	37,800

(C) **Payments :**						
Material	–	–	20,000	14,000	14,000	12,000
Wages	2,000	4,200	4,500	4,600	4,700	4,800
Production Overheads	–	3,200	3,300	3,300	3,400	3,500
Selling and Distribution Overheads	–	800	900	800	900	900
Commission	–	1,000	1,100	1,200	1,300	1,400
Machinery	–	–	15,000	15,000	–	–
Total (C)	2,000	9,200	44,800	38,900	24,300	22,600
Balance (A + B + C)	18,000	29,800	20,000	6,100	8,800	15,200

9. Saurashtra Co. Ltd. wishes to arrange overdraft facilities with its bankers from the period August to October 2010 when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data given below:

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)	Mfg. Exp. (Rs.)	Office Exp. (Rs.)	Selling Exp. (Rs.)
June	1,80,000	1,24,800	12,000	3,000	2,000	2,000
July	1,92,000	1,44,000	14,000	4,000	1,000	4,000
August	1,08,000	2,43,000	11,000	3,000	1,500	2,000
September	1,74,000	2,46,000	12,000	4,500	2,000	5,000
October	1,26,000	2,68,000	15,000	5,000	2,500	4,000
November	1,40,000	2,80,000	17,000	5,500	3,000	4,500
December	1,60,000	3,00,000	18,000	6,000	3,000	5,000

Additional Information:

(a) Cash on hand 1-08-2010 Rs.25,000.

(b) 50% of credit sales are realized in the month following the sale and the remaining 50% in the second month following. Creditors are paid in the month following the month of purchase.

(c) Lag in payment of manufacturing expenses half month.

(d) Lag in payment of other expenses one month

Sol :

CASH BUDGET

For 3 months from August to October 2010

Particulars	August (Rs.)	September (Rs.)	October (Rs.)
Receipts:			
Opening balance	25,000	44,500	(66,750)
Sales	1,86,000	1,50,000	1,41,000
Total Receipts (A)	2,11,000	1,94,500	74,250
Payments:			
Purchases	1,44,000	2,43,000	2,46,000
Wages	14,000	11,000	12,000
Mfg. Exp.	3,500	3,750	4,750
Office Exp.	1,000	1,500	2,000
Selling Exp.	4,000	2,000	5,000
Total Payments (B)	1,66,500	2,61,250	2,69,750
Closing Balance (A-B)	**44,500**	**(66,750)**	**(1,95,500)**

Working Note:

1. Manufacturing Expense:

Particulars	August	September	October
July (4000/2)	2000	—	—
August (3000/2)	1500	1500	—
September (4500/2)	—	2250	2250
October (5000/2)	—	—	2500
Total	3500	3750	4750

2. Sales

Particulars	August	September	October
June (1,80,000/2)	90,000	—	—
July (1,92,000/2)	96,000	96,000	—
August (1,08,000/2)	—	54,000	54,000
September (1,74,000/2)	—	—	87,000
Total	1,86,000	1,50,000	1,41,000

10. S. K. Brothers wish to approach the bankers for temporary overdraft facility for the period from October 2010 to December 2010. During the period of this period of these three months, the firm will be manufacturing mostly for stock. You are required to prepare a cash budget for the above period.

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)
August	3,60,000	2,49,600	24,000
September	3,84,000	2,88,000	28,000
October	2,16,000	4,86,000	22,000
November	3,48,000	4,92,000	20,000
December	2,52,000	5,36,000	30,000

(a) 50% of credit sales are realized in the month following the sales and remaining 50% in the second following.

(b) Creditors are paid in the month following the month of purchase

(c) Estimated cash as on 1-10-2010 is Rs.50,000.

Sol : **(Imp.)**

CASH BUDGET

For 3 months from October to December 2010

Particulars	October (Rs.)	November (Rs.)	December (Rs.)
Receipts:			
Opening balance	50,000	1,12,000	(94,000)
Collection from Debtors	3,72,000	3,00,000	2,82,000
Total Receipts (A)	4,22,000	4,12,000	1,88,000
Payments:			
Payments to Creditors	2,88,000	4,86,000	4,92,000
Wages	22,000	20,000	30,000
Total payments (B)	3,10,000	5,06000	5,22,000
Closing Balance (A-B)	**1,12,000**	**(94,000)**	**(3,34,000)**

Working Note: Collection from debtors

Particulars	October (Rs.)	November (Rs.)	December (Rs.)
Sales			
August	1,80,000	-	
September	1,92,000	1,92,000	-
October	-	1,08,000	1,08,000
November	-	-	1,74,000
	3,72,000	3,00,000	2,82,000

11. TATA Co. Ltd. is to start production on 1st January 2011. The prime cost of a unit is expected to be Rs. 40 (Rs. 16 per materials and Rs. 24 for labour). In addition, variable expenses per unit are expected to be Rs. 8 and fixed expenses per month Rs. 30,000. Payment for materials is to be made in the month following the purchase. One-third of sales will be for cash and the rest on credit for settlement in the following month. Expenses are payable in the month in which they are incurred. The selling price is fixed at Rs. 80 per unit. The number of units to be produced and sold is expected to be:

January 900; February 1200; March 1800; April 2000; May 2,100 June 2400

Draw a Cash Budget indicating cash requirements from month to month.

Sol :

CASH BUDGET of TATA LTD.

For 6 months from January to June 2011

Particulars	Jan.	Feb.	March	April	May	June
Receipts						
Opening Balance		(34,800)	(37,600)	(32,400)	(5,867)	(27,600)
Cash sales	24,000	32,000	48,000	53,333	56,000	64,000
Collection from Debtors		48,000	64,000	96,000	1,06,667	1,12,000
Total Receipts (A)	24,000	45,200	74,400	1,16,933	1,56,800	1,48,400
Payments						
Creditors		14,400	19,200	288,00	32,000	33,600
Wages	21,600	28,800	43,200	48,000	50,400	57,600
Variable Exp.	7,200	9,600	14,400	16,000	16,800	19,200
Fixed Exp.	30,000	30,000	30,000	30,000	30,000	30,000
Total Payment (B)	58,800	82,800	1,06,800	1,22,800	1,29,200	1,40,400
Closing Balance	**(34,800)**	**(37,600)**	**(32,400)**	**(5,867)**	**(27,600)**	**8,000**

12. Prepare a Cash Budget from the data given below for a period of six months (July to December)

Month	Sales	Raw Materials
May	75,000	37,500
June	75,000	37,500
July	1,50,000	52,500
August	2,25,000	3,67,500
September	3,00,000	1,27,500
October	1,50,000	97,500
November	1,50,000	67,500
December	1,37,500	—

(i) Collection estimates:

- Within the month of sale: 5%
- During the month following the sale: 80%
- During the second month following the sale: 15%

(ii) Payment for raw materials is made in the next month.

(iii) Salary Rs. 11,250, Lease payment Rs. 3750, Misc. Exp. Rs. 1150, are paid each month

(iv) Monthly Depreciation Rs. 15,000

(v) Income tax Rs. 26,250 each in September and December.

(vi) Payment for research in October Rs.75,000

(vii) Opening Balance on 1st July Rs.55,000.

Sol :

CASH BUDGET

For the six months from July to December

Particulars	July	Aug.	Sep.	Oct.	Nov.	Dec.
Receipts						
Opening Balance	55,000	80,100	1,53,950	(38450)	24150	83000
Collection from Debtors	78,750	1,42,500	2,17,500	2,81,250	1,725,00	1,49,375
Total receipts (A)	1,33,750	2,22,600	3,71,450	2,42,800	1,96,650	2,32,375
Payments						
Payment to suppliers	37,500	52,500	3,67,500	1,27,500	97,500	67,500
Salary	11,250	11,250	11,250	11,250	11,250	11,250
Lease payment	3750	3750	3750	3750	3750	3750
Misc. expense	1,150	1,150	1,150	1,150	1,150	1,150
Income tax			26,250			26,250
Payment for Research				75,000		
Total Payment (B)	53,650	68,650	4,09,900	2,18,650	1,13,650	1,09,900
Closing Balance	**80,100**	**1,53,950**	**(38,450)**	**24,150**	**83,000**	**1,22,475**

Note: Depreciation is a non-cash item. It does not involve cash flow. Hence, depreciation will not be considered as payment through cash.

13. Prepare a cash budget of R.M.C. Ltd. for April, May and June 2012.

Months	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)	Expenses (Rs.)
Jan. (Actual)	80,000	45,000	20,000	5,000
Feb. (Actual)	80,000	40,000	18,000	6,000
March (Actual)	75,000	42,000	22,000	6,000
April (Budget)	90,000	50,000	24,000	7,000
May (Budget)	85,000	45,000	20,000	6,000
June (Budget)	80,000	35,000	18,000	5,000

Additional Information:

(i) 10% of the purchases and 20% of sales are for cash.

(ii) The average collection period of the company is A month and the credit purchases are paid regularly after one month.

(iii) Wages are paid half monthly and the rent of Rs. 500 included in expenses is paid monthly and other expenses are paid after one month lag.

(iv) Cash balance on April 1,2012 may be assumed to be Rs.15,000

Sol :

CASH BUDGET

(For the months ending April, May & June 2012)

Particulars	April (Rs.)	May (Rs.)	June (Rs.)
Receipts			
Opening Balance	15,000	27,200	35,700
Cash Sales	18,000	17,000	16,000
Collection from Debtors	66,000	70,000	66,000
Total Receipts (A)	99,000	1,14,200	1,17,700
Payments			
Cash Purchases	5,000	4,500	3,500
Payment to creditors	37,800	45,000	40,500
Wages	23,000	22,000	19,000
Rent	500	500	500
Other Exp.	5,500	6,500	5,500
Total Payments (B)	71,800	78,500	69,000
Closing balance (A–B)	**27,200**	**35,700**	**48,700**

14. From the following particulars prepare a monthly cash budget for the quarter ended 31st March 2004.

(` in lakhs)

Month	Sales	Purchases	Wages	Expenses
Nov '03	3.00	2.00	2.00	0.40
Dec -03	6.00	2.00	2.00	0.40
Jan '04	4.00	3.00	2.20	0.50
Feb '04	5.00	2.00	2.20	0.50
March '04	6.00	1.00	2.40	0.50

Additional information:

- **10 per cent sales and purchases are on cash.**
- **Credit to debtors: one month on an average, 50% of debtor will make payment on the due date while the rest will make payment one month thereafter.**
- **Credit from creditors: 2 months.**
- **Wages to be paid twice in a month on the 1st and 16th respectively.**
- **Expenses are generally paid within the month.**
- **Plant costing ` 1.00 lakh will be installed in February on payment of 25% of the cost in addition to the installation cost of ` 5,000, balance to be paid in three equal installments from the following month.**
- **Opening cash balance is 2,00,000.**

Sol :

Cash Budget for three months from Jan to March 2003

(` in lakhs)

Particulars	Jan	Feb	March
(A) Receipts:			
Opening cash balance	2.00	3.55	3.55
Cash sales (10% of sales)	0.40	0.50	0.10
Collection during the 1st month (50% of the credit sales)	2.70	1.80	2.25
Collection during the 2nd month (50% of the credit sales)	2.25	2.70	1.80
Total receipts (A)	**7.35**	**8.55**	**7.70**
(B) Payments:			
Payments to Creditors (10% cash)	0.30	0.20	0.10
Payment at end of credit period	0.90	1.80	2.70
Wages (50% last month's and 50% current month's)	2.10	2.20	2.30

Expenses	0.50	0.50	0.30
Plant (25% of the cost plus installation charge)	—	0.30	—
First installment	—	—	0.25
Total payments (B)	**3.80**	**5.00**	**5.65**
Closing Balance (A) - (B)	**3.55**	**3.55**	**2.05**

4.6 CASH MANAGEMENT TECHNIQUE

4.6.1 Lock Box, Concentration Banking

Q23. Explain in detail the techniques of cash management.

(OR)

Explain briefly about Concentration banking and lock box system.

Ans : **(July-21, Imp.)**

1. Prompt Cash Collections

The techniques and processes used for making prompt collection of receivables from customers and postponing the cash disbursement needs of the firm are as follows,

(i) In the first approach it encourages the customers to make prompt payment.

(ii) While in other approach, quick conversion of receipts into cash is seen.

(i) Quick Payments by Customers

Prompt billing is an optimal method of billing in which quick payments by the customers can be ensured. In this method, the amount of money that has to be paid by the customer and the period of payment needs to be informed accurately in advance to the customers. The enclosure of a self-addressed return envelope enables the firm to receive payments by the customers in considerable low time. Cash discounts could act as another method for encouraging prompt payments.

(ii) Early Conversion of Payments into Cash

As soon as the customer make payments through the cheque, it needs to be promptly encashed/ cleared by the firm. There is a time gap between the time of cheque issued and mailed by the customer and the time funds are received by the firm. The entire conversion process consists of three steps,

(a) Transit or mailing time

(b) Time taken for processing the cheques

(c) Collection time.

After purchasing the goods on credit terms, customer issues a cheque in response to the purchases which wilt be received by the post offices. After the receipts of cheque, post offices have to make a note of record and requires some time before it is issued to a firm. The time taken by the post offices for issuing the cheque to the firm after performing certain activities, is said to be the transit time or the mailing time. It is also called as "Postal Float". After the receipt of cheque, it is not directly sent to the bank for deposition instead it remains with the firms for performing financial formalities. The time taken by a firm for processing the cheque before it is deposited into the bank is termed as "Lethargy".

The time taken by the bank for collecting the payment from the bank through which the customer has made payments is called as "Bank Float". The postal float, lethargy and bank float are collectively referred to as "Deposit Float". In simple terms, the deposit float constitutes the sum of cheques issued by the customers which are not yet usable by the firm.

The accounts receivables can be collected quickly by reducing the transit, processing and collection time. This can be done by reducing the deposit float. Deposit float can be reduced to a great extent if the cash collections are employed through decentralized methods. The decentralized collection system can be implemented in the firm with the help of two methods,

(a) Concentration banking

(b) Lock box system.

(a) Concentration Banking

Concentration banking acts as a decentralized system of collecting accounts receivables. It is. usually employed by the large firms having their subsidiary branches located at different places. In this method, firm selects some of its branches as the "Collection Centres" for receiving the payments made by the customers. In this system, the customers have to transfer their payments to their respective collection centres. From there, these payments are deposited into the bank account of the collection centre after meeting all the local expenses. Through the concentration banking system, firms are capable of reducing the time involved in mailing and collecting the payments.

(b) Lock Box System

In the lock box system, the firm takes an official charge of the lock box of post offices which are located in the vicinity of the main collection centres. The customers are required to drop/remit their payment cheques in such boxes. The local banks of the firm are given the authority to open these boxes and collects the payments received from the customers. The lock box system helps in eliminating the processing time as the cheques are received by the authorised bank 'n' number a day and deposits them into the firms accounts, for maintaining , the record of collections, bank issues a deposit slip and the list of payments in favour of the firm.

2. Slowing Disbursements

In addition to the prompt collection of accounts receivable, the operating cash requirement can be reduced through slow disbursements of accounts payable. Slow disbursements or payouts denotes the sources of funds which do not require any interest payments. There are several techniques through which the payment of accounts payable can be delayed which are as follows,

(i) Avoiding early payments

(ii) Centralized disbursements

(iii) Float and

(iv) Accruals.

(i) Avoiding Early Payments

Payments can be delayed by not practising the early payments. However, as per the credit terms, the firms must make payments within the stipulated time period in such a way that, they can avail the facility of cash discounts.

On the other hand, if the payments are delayed then it would be very much difficult for a firm to seek loans/debt on credit terms. Thus, the firm is advised to make payments only at their allowed time or on their due dates.

(ii) Centralized Disbursements

Centralized disbursements is one of the method of slowing down the cash disbursement. In this system, the head office clear offs all its accounts payables by paying them from a centralized disbursement account which helps the firms to delay payments and save cash.

(iii) Float

Float is another technique of delaying the cash payments. It is defined as the amount of money written on cheque, but not yet collected and encashed. Float denotes the difference between bank balance and book balance of cash of a firm. Such difference is the result of transit delays and processing delays.

As it takes considerable time for the issue of a cheque by the customer and its clearance and deposit into firms bank by the customers bank. Firm can optionally utilize these float amount or cheques or for earning interest as cash' would be required in some near future. Float used in this manner is .usually referred to as "Cheque Kitting".

Cheque kitting can be done in two ways,

(a) Paying from a Distant Bank

A cheque can be issued by a firm in favour of the banks that are distantly located from the creditor's bank. They require longer transit time for creditor's bank to receive payments. High transit time make the firms to use such funds for some other purpose.

(b) Cheque Encashment Analysis

The other method for using float is to accurately analyse the time gap existing between the issue of cheques and their encashment. This analysis can be done on their past experiences. According to this strategy, a firm must maintain fraction of the total amount in the bank for the payment of its expenses but not the entire amount at a time which helps the firm in reducing its operating cost.

(iv) Accruals

Accruals is one of the effective tool used for stretching accounts payable. It refers to the current liabilities of a firm wherein either a service or goods are received by the firm whose payment is due. Examples of accruals are payrolls, rent to lessors and taxes to government. Such accruals are able to delay the cash payments only to some extent as they have legal restrictions whose payments cannot be delayed beyond the allowed time limit.

Exercise Problems

1. From the following information prepare a statement showing the working capital requirements :

Particulars	`
Raw material	0.30
Direct Labour	0.40
Overheads	0.20
Total cost	0.90
Profit	0.10
Sales	1.00

Budgeted Sales ` 2,60,000 per annum

It is estimated that

(i) Raw materials are carried in stock for 3 weeks and finished goods for 2 weeks.

(ii) Factory processing will take 3 weeks and it may be assumed to be consisting of 100% raw materials, wages and overheads.

(iii) Suppliers will give 5 weeks credit

(iv) Customers will require 8 weeks credit

[Ans : ` 55,500]

2. A proforma cost sheet of a company provides the following particulars :

Raw Materials	40%
Labour	10%
Overheads	30%

The following further particulars are available :

(i) Raw materials are to remain in stores on an average-6 weeks.

(ii) Processing time-4 weeks (assume 50%, completion stage with full material consumption).

(iii) Finished goods are required to be in stock on an average period-8 weeks.

(iv) Credit period allowed to debtors, on average-10 weeks.

(v) Lag in payment of wages-2 weeks.

(vi) Credit period allowed by creditors-4 weeks

(vii) Selling price - ` 50 per unit.

You are required to prepare an estimate of working capital requirements adding 10% margin for contingencies for a level of activity of 1,30,000 units of production.

[Ans : Working Capital required = ` 23,92,500]

3. Management of XY Limited seeks your assistance on assessing the working capital requirements for an activity level of 1,00,000 units of output for the year 2013. The cost details of the product are as follows:

Particulars	Cost Per Unit `
Raw Materials	20
Direct Labour	5
Overheads	15
Total Cost	40
Profit	10
Selling Price	50

The other details are:

i) In order to ensure smooth flow of production, two months raw material inventory is to be held in the stores.

ii) Finished goods remain in stores for one month.

iii) Credit allowed for purchase of raw material is one month.

iv) Credit allowed to customers is two months.

v) Cash balance to be maintained is ? 25,000.

vi) Assuming that the product process is uninterrupted and even during the year.

vii) Lag in payment of overheads 1 month.

Compute the amount of working capital required for the given level of activity.

[Ans: Net Working Capital Required = ` 10,66,666]

Short Question and Answers

1. Define the term working capital.

Ans :

Meaning

The term working capital is commonly used for the capital required for day-to-day working in a business concern, such as for purchasing raw material, for meeting day-to-day expenditure on salaries, wages, rents rates, advertising etc. But there are much disagreement among various financial authorities

Definitions

(i) **According to Shubin,** "Working capital the amount of funds necessary to cover the cost of operating the enterprise".

(ii) **According to Gerstenberg,** "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, as **for example,** from cash to inventories, inventories to receivables, receivables into cash".

(iii) **According to Hoagland,** "Working capital is descriptive of that capital which is not fixed. But, the more common use of working capital is to consider it as the difference between the book value of the current assets and the current liabilities".

Working capital, in general practice, refers to the excess of current assets over current liabilities. Management of working capital therefore, is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exists between them. In other words it refers to all aspects of administration of both current assets and current liabilities. It is also known as revolving or circulating capital or short-term capital.

Working capital management is very important to ensure that the company has enough funds to carry on with its day-to-day operations smoothly. A business should not have a very long Cash Conversion Cycle. A cash conversion cycle measures the time period for which a firm will be deprived of funds if it increases its investments as a part of its business growth strategies.

2. Characteristics of working capital.

Ans :

The characteristics of working capital is summarised in the following points:

(i) Short-Term Needs

Working capital is used to acquire current assets which get converted into cash in a short period. In this respect, it differs from fixed capital which represents funds locked in long-term assets. The duration of the working capital depends on the length of production process, the time that elapses in the sale and the waiting period of the cash receipt.

(ii) Circular Movement

Working capital is constantly converted into cash which again turns into working capital. This process of conversion goes on continuously. The cash is used to purchase current assets and when the goods are produced and sold-out; those current assets are transformed into cash. Thus, it moves in a circular away. That is why working capital is also described as circulating capital.

(iii) Element of Permanency

Though working capital is a short-term capital, it is required always and forever to continue the productive activity of the enterprise. Hence, so long as production continues, the enterprise will constantly remain in need of working capital. The working capital that is required permanently is called permanent or regular working capital.

(iv) Element of Fluctuation

Though the requirement of working capital is felt permanently, its requirement fluctuates more widely than that of fixed capital. The

requirement of working capital varies directly with the level of production. It varies with the variation of the purchase and sale policy; price level and the level of demand also. The portion of working capital that changes with production, sale, price, etc., is called variable working capital.

(v) Liquidity

Working capital is more liquid than fixed capital. If need arises, working capital can be converted into cash within a short period and without much loss. A company in need of cash can get it through the conversion of its working capital by insisting on quick recovery of its bills receivable and by expediting sales of its product. It is due to this trait of working capital that the companies with a larger amount of working capital feel more secure.

3. Need for working capital.

Ans :

Working capital is needed till a firm gets cash on sale of finished products. It depends on two factors:

(i) Manufacturing cycle i.e. time required for converting the raw material into finished product; and

(ii) Credit policy i.e. credit period given to Customers and credit period allowed by creditors.

Thus, the sum total of these times is called an "Operating cycle" and it consists of the following six steps:

- Conversion of cash into raw materials.
- Conversion of raw materials into work-in-process.
- Conversion of work-in-process into finished products.
- Time for sale of finished goods – cash sales and credit sales.
- Time for realisation from debtors and Bills receivables into cash.
- Credit period allowed by creditors for credit purchase of raw materials, inventory and creditors for wages and overheads.

4. Operating cycle.

Ans :

The working capital requirement of a firm depends, to a great extent upon the operating cycle of the firm. The duration of time required to complete the sequence of events right from purchase of raw material/goods for cash to the realization of sales in cash is called the operating cycle or working capital cycle.

The length of the operating cycle of a manufacturing firm is the sum of the following:

1. **Inventory Conversion Period:** The Inventory Conversion Period is the total time needed for Producing and selling the product.
   i) Raw Material Conversion Period.
   ii) Work-in-progress Conversion Period.
   iii) Finished Goods Conversion Period.
2. **Debtors Conversion Period:** It is the time required to collect the outstanding amount from the customers.

The total of Debtors Conversion Period and Inventory Conversion Period is referred to as Gross Operating Cycle.

It can be determined by adding the number of days required for each stage in the cycle. In case of manufacturing concerns, working capital is required to cater to the following needs of business in order:

(i) Raw materials are to be purchased for cash.

(ii) Production process converts raw materials into work-in-process.

(iii) Work-in-process is converted into finished goods, during course of time through production process.

(iv) Finished goods are converted into accounts receivable (debtors and bills receivable) through sale.

(v) Accounts receivable are realized into cash in due course of time.

The above operating cycle is repeated again and again over the period depending upon the nature of the business and type of product etc.

5. Define cash management.

Ans :

Cash management is one of the key areas of working capital management. Cash is the most liquid current assets. Cash is the common denominator to which all current assets can be reduced because the other major liquid assets, i.e. receivable and inventory get eventually converted into cash. This underlines the importance of cash management. The term "Cash" with reference to management of cash is used in two ways. In a narrow sense cash refers to coins, currency, cheques, drafts and deposits in banks. The broader view of cash includes near cash assets such as marketable securities and time deposits in banks. The reason why these near cash assets are included in cash is that they can readily be converted into cash. Usually, excess cash is invested in marketable securities as it contributes to profitability.

Cash is one of the most important components of current assets. Every firm should have adequate cash, neither more nor less. Inadequate cash will lead to production interruptions, while excessive cash remains idle and will impair profitability. Hence, the need for cash management.

Thus, the aim of cash management is to maintain adequate cash balances at one hand and to use excess cash in some profitable way on the other hand.

6. Transactions motive

Ans :

This motive refers to the holding of cash, to meet routine cash requirements in the ordinary course of business. A firm enters into a number of transactions which requires cash payment. For example, purchase of materials, payment of wages, salaries, taxes, interest etc. Similarly, a firm receives cash from cash sales, collections from debtors, return on investments etc. But the cash inflows and cash outflows do not perfectly synchronise. Sometimes, cash receipts are more than payments while at other times payments exceed receipts.

The firm must have to maintain sufficient (funds) cash balance if the payments are more than receipts. Thus, the transactions motive refers to the holding of cash to meet expected obligations whose timing is not perfectly matched with cash receipts. Though, a large portion of cash held for transactions motive is in the form of cash, a part of it may be invested in marketable securities whose maturity conform to the timing of expected payments such as dividends, taxes etc.

7 Importance of cash management.

Ans :

(i) Cash management is particularly important for those companies who make sales as well as purchase on credit, since creditor can demand money anytime and therefore it is important for a company to manage cash.

(ii) Cash management is also necessary to deal with contingencies such as fire, breakdown of machinery, payment of compensation in case of any lawsuit going against the company etc.

(iii) In this dynamic business world there is always a scope of takeover that is company can buy other company if it thinks that it is undervalued, cash will play a key role for successful takeover.

(iv) Since global commodity prices are fluctuating companies need cash in order to take advantage of decline in the raw material prices of the company's product.

8. Define Cash Budget.

Ans :

A cash budget is a significant technique used by the firms to regulate the receipts and payments of cash. Cash budget is used forecast the cash receipts and payments in future. Cash budget is useful to financial manager in evaluating expected receipts and payments in future.

Both short-term and long-term estimations are important in the process of cash planning. Receipts and payments and adjusted net income methods can be used to estimate both short-term and long-term cash.

9. Receipts and Payments Method

Ans :

In case of this method the cash receipts from various sources and the cash payments to various agencies are estimated. In the opening balance of cash, estimated cash receipts are added from the total, the total of estimated cash payments are deducted to find out the closing balance. If monthly/ quarterly cash budgets are to be prepared, first of all the closing balance of first month/quarter will be computed which will be the opening balance for the next month/quarter.

Similarly the closing balance for 2nd month/ quarter can be known and so on. The estimated receipts may be from cash sales, credit collections, interest, dividend, miscellaneous receipts, issue of share capital, loans etc. Estimated disbursements may be regarding materials, labour, overheads, granting loan or repayment of loan, payment of advance tax, purchase of assets etc.

10. Concentration Banking

Ans :

Concentration banking acts as a decentralized system of collecting accounts receivables. It is. usually employed by the large firms having their subsidiary branches located at different places. In this method, firm selects some of its branches as the "Collection Centres" for receiving the payments made by the customers. In this system, the customers have to transfer their payments to their respective collection centres. From there, these payments are deposited into the bank account of the collection centre after meeting all the local expenses. Through the concentration banking system, firms are capable of reducing the time involved in mailing and collecting the payments.

11. Lock Box System

Ans :

In the lock box system, the firm takes an official charge of the lock box of post offices which are located in the vicinity of the main collection centres. The customers are required to drop/remit their payment cheques in such boxes. The local banks of the firm are given the authority to open these boxes and collects the payments received from the customers. The lock box system helps in eliminating the processing time as the cheques are received by the authorised bank 'n' number a day and deposits them into the firms accounts, for maintaining , the record of collections, bank issues a deposit slip and the list of payments in favour of the firm.

Choose the Correct Answer

1. _____ refers to the amount invested in various components of current assets. [c]

   (a) Temporary working capital (b) Net working capital

   (c) Gross working capital (d) Permanent working capital

2. _____ is the length of time between the firm's actual cash expenditure and its own cash receipt. [a]

   (a) Net operating cycle (b) Cash conversion cycle

   (c) Working capital cycle (d) Gross operating cycle

3. _____ refers to a firm holding some cash to meet its routine expenses that are incurred in the ordinary course of business. [b]

   (a) Speculative motive (b) Transaction motive

   (c) Precautionary motive (d) Compensating motive

4. Net working capital refers to _____ [b]

   (a) total assets minus fixed assets. (b) current assets minus current liabilities.

   (c) current assets minus inventories. (d) current assets.

5. The addition of all current assets investment is known as _____ [b]

   (a) Net Working Capital (b) Gross Working capital

   (c) Temporary Working Capital (d) All of these

6. When total current assets exceeds total current liabilities it refers to _____ [d]

   (a) Gross Working Capital (b) Temporary Working Capital

   (c) Both a and b (d) Net Working Capital

7. Which of the following would not be financed from working capital? [d]

   (a) Cash float (b) Accounts receivable

   (c) Credit sales (d) A new personal computer for the office.

8. In a month, payment for salary was Rs. 5,750 when the lag in payment of salary is 1/8 month. If total salaries of current month are Rs 6,000, determine the salaries of previous month. [a]

   (a) Rs 4,800 (b) Rs 4,250

   (c) Rs 4,000 (d) Rs 4,750

9. In cash flow method for preparing cash budget, payment of dividends and prepaid payments are _____ [a]

   (a) Deducted from opening balance of cash

   (b) Added to opening balance of cash

   (c) Not included in cash budget

   (d) None of the above

10. While preparing cash budget from Cash Accounting method _____. [a]

(a) Payments and receipts related to budget period are considered

(b) Payments and receipts before budget period are considered

(c) Payments and receipts after budget period are considered

(d) All of the above

11. Cash budget is a _____ budget. [a]

(a) Short-term (b) Long-term

(c) Both a and b (d) None of the above

12. While preparing a cash budget the focus should be on _____. [d]

(a) Sources of cash inflow during a particular period

(b) Amount of cash to be received from cash inflow sources

(c) Timing of cash inflow

(d) All of the above

13. Cash budget is more helpful in those business concerns where there are _____. [b]

(a) No seasonal fluctuations

(b) Wide seasonal fluctuations

(c) Rare seasonal fluctuations

(d) All of the above

14. Which of the following shows modern view of working capital? [c]

(a) Current assets (b) Current liabilities

(c) Current assets-current liabilities (d) None

15. As per Gesternberg's idea, working capital means total of, [a]

(a) Current assets (b) Current liabilities

(c) Current assets - Current liabilities (d) None

16. As per Hoagland viewpoint, working capital is, [a]

(a) Excess of current assets over current liabilities

(b) Only current liabilities

(c) Fixed assets

(d) None

17. Which motive refers to the holding of cash in order to holding cash in order to meet day to day expenses of business? [a]

(a) Transaction Motive (b) Speculative Motive

(c) Precautionary Motive (d) Compensating Motive

18. Which motive for holding cash refers to maintain cash balance to meet unexpected/Contingencies which may arise due to uncontrollable circumstances? [c]

(a) Transaction Motive (b) Speculative Motive

(c) Precautionary Motive (d) Compensating Motive

19. Variable working capital is divided into _____ parts. [a]

(a) Two (b) Four

(c) Five (d) Ten

20. Initial working capital and regular working capital are part of _____ Working capital. [a]

(a) Permanent or fixed (b) Variable

(c) Both (d) None of above

Fill in the blanks

1. _____ the amount of funds necessary to cover the cost of operating the enterprise.
2. A business should not have a very long _____.
3. _____ assets which can be transformed into cash within a short period of time in a normal business.
4. The _____ working capital helps the firm to provide adequate amount of working capital at the right time.
5. _____ cycle is a time required for converting the raw material into finished product.
6. Increase in bank loan cannot increase _____.
7. _____ policy of the Government may also effect the levels of working capital of a firm.
8. Working Capital = _____.
9. _____ is one of the most important components of current assets.
10. _____ motive refers to the holding of cash, to meet routine cash requirements in the ordinary course of business. A firm enters into a number of transactions which requires cash payment.
11. Sometimes firms would like to hold cash in order to exploit, the profitable opportunities as and when they arise is called as _____ motive.
12. A _____ is a significant technique used by the firms to regulate the receipts and payments of cash.
13. The time taken by a firm for processing the cheque before it is deposited into the bank is termed as _____.
14. _____ banking acts as a decentralized system of collecting accounts receivables.
15. In the _____ system, the firm takes an official charge of the lock box of post offices which are located in the vicinity of the main collection centres.
16. _____ disbursements is one of the method of slowing down the cash disbursement.
17. _____ refers to the current liabilities of a firm wherein either a service or goods are received by the firm whose payment is due.
18. Sundry debtors is a _____ asset.
19. Dividend payable is a _____.
20. Tandon Committee referred permanent working capital as a _____ current assets.
21. The term 'cash' in cash budget stands for _____ and _____.
22. Cash budget is also called as _____.
23. There are _____ methods by which a cash budget is prepared.

24. The opening balance of cash in April is Rs.1500. Total receipts for the month are Rs.4500 and total payments amounted to Rs.4000. Opening balance of cash in May will be _____.

25. Cash budget is a useful tool for _____.

26. The closing balance of one month will be the _____ balance of the next month.

27. Budget is a _____ of future course of action and activities.

ANSWERS

1. Working capital
2. Cash Conversion Cycle
3. Current
4. Gross
5. Manufacturing
6. Working capital
7. Import
8. Current Assets – Current Liabilities
9. Cash
10. Transactions
11. Speculative
12. Cash budget
13. Lethargy
14. Concentration
15. Lock box
16. Centralized
17. Accruals
18. Current
19. Current liability
20. Core
21. Cash balance, Bank balance
22. Finance Budget
23. Three
24. Rs. 2000
25. Financial Planning
26. Opening
27. Blue Print

UNIT V

RECEIVABLES MANAGEMENT – OBJECTIVES :

Credit Policy, Cash Discount, Debtors Outstanding and Ageing Analysis; Inventory Management (Very Briefly) - ABC Analysis; Minimum Level; Maximum Level; EOQ (Basic Model); Reorder Level; Safety Stock.

5.1 RECEIVABLES MANAGEMENT

Q1. Define Receivable Management. Explain the various costs of maintaining receivables.

Ans : **(Imp.)**

Meaning

The term receivable is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business. Receivables are also one of the major parts of the current assets of the business concerns. It arises only due to credit sales to customers, hence, it is also known as Account Receivables or Bills Receivables. Management of account receivable is defined as the process of making decision resulting to the investment of funds in these assets which will result in maximizing the overall return on the investment of the firm.

Definitions

(i) According to Hampton, "Receivables are asset accounts representing amount owned to firm as a result of sale of goods or services in ordinary course of business".

(ii) According to Robert N. Authority, "Accounts receivables are amounts owned to the business enterprise, usually by its customers. Sometimes it is broken down into trade accounts receivables, the former refers to amounts owned by customers, and the later refers to amounts owned by employees and others".

Thus, receivables are forms of investment in any enterprise manufacturing and selling goods on credit basis, large sums of funds are tied up in trade debtors. Hence, a great deal of careful analysis and proper management is exercised for effective and efficient management of Receivables to ensure a positive contributions towards increase in turnover and profits.

Accounts receivable involves both cost and risk. It is necessary for management to identify both benefits and cost to ascertain the objectives of receivables management.

The costs and benefits related with setting of objectives of receivables management are,

Costs

The important costs incurred during receivables management are as follows,

(i) Collection Cost

The firm need to incur costs for the purpose of collecting the payments from credit customers is known as collection costs. It involves some additional cost to have credit department and to acquire knowledge about credit.

(ii) Capital Cost

These are the costs incurred by the firm during the time period of sale of goods and its payment. As accounts receivable leads to blockage of firm's financial resources. So, firm needs to raise additional capital to meet its obligations such as payment to employees and suppliers of raw material.

(iii) Delinquency Cost

This cost incurred by the firm when customers fail to make payment after credit period to

meet its obligations. Delinquency cost involves different costs such as legal charges, other collection costs, costs incurred due to blockage of funds, cost for reminders etc.

(iv) Default Cost

At last, after making all efforts if firm is unable to recover the due amount because of inability of credit customers then it is regarded as bad debts and written off. This cost is treated as default cost related to accounts receivable.

Q2. Explain the factors influencing the size of Receivables.

Ans :

Receivables size of the business concern depends upon various factors. Some of the important factors are as follows:

1. Sales Level

Sales level is one of the important factors which determines the size of receivable of the firm. If the firm wants to increase the sales level, they have to liberalise their credit policy and terms and conditions. When the firms maintain more sales, there will be a possibility of large size of receivable.

2. Credit Policy

Credit policy is the determination of credit standards and analysis. It may vary from firm to firm or even some times product to product in the same industry. Liberal credit policy leads to increase the sales volume and also increases the size of receivable. Stringent credit policy reduces the size of the receivable.

3. Credit Terms

Credit terms specify the repayment terms required of credit receivables, depend upon the credit terms, size of the receivables may increase or decrease. Hence, credit term is one of the factors which affects the size of receivable.

4. Credit Period

It is the time for which trade credit is extended to customer in the case of credit sales. Normally it is expressed in terms of 'Net days'.

5. Cash Discount

Cash discount is the incentive to the customers to make early payment of the due date. A special discount will be provided to the customer for his payment before the due date.

6. Management of Receivable

It is also one of the factors which affects the size of receivable in the firm. When the management involves systematic approaches to the receivable, the firm can reduce the size of receivable.

Q3. Explain the importance of Receivables Management.

Ans :

1. Liberalised credit policy helps to increase the growth of sales.
2. It helps to increase the operating profits because of more credit sales.
3. Credit policy helps to meet the competition.
4. Credit sales helps to attract not only existing customer but also the new customers in the ordinary course of business.
5. It ensures higher investment in trade debtors, which will produce larger sales.
6. It helps to minimize bad debts without taking stringent measures.
7. It facilitates adequate working capital to meet its current obligations.
8. It gives guidance to the management for effective financial planning and control.
9. It helps to make effective coordination between finance, production, sales, profit and cost.

5.1.1 Objectives

Q4. State the objectives of receivables management.

Ans : **(Imp.)**

Some of the objectives of receivables management are,

1. To assess the costs of receivables.
2. To manage the risk and profitability of the firm.
3. To optimize the sales value and the investments in receivables.
4. To develop the credit policy of the firm.
5. To assess the credit worthiness of the customers.
6. To control the receivables.
7. To smoothen the collection of receivables from the debtors.
8. To minimize the credit cost.
9. To facilitate the firm in availing the benefits of factoring.

Q5. Explain the benefits of Receivables management.

Ans :

(i) Receivable management helps in increasing the sales of the firm by attracting new customers.

(ii) Investment in receivables is mainly focused towards growth of the firm.

(iii) Firms provide trade credit in order to protect its present sales from competitors.

(iv) When sales of the firm increases it ultimately leads to increase in profits.

Hence, investments made in receivables consists of both benefits as well as costs. The sales, costs and profitability of the firm are highly influenced by the increase of trade credit.

Q6. Explain briefly about Five C's of credit.

Ans :

Five C's of Credit

Five C's of credit is one of the popular technique of credit selection which facilitates a detailed credit analysis. While giving credit to the customer the following "five C's of credit" are considered by credit manager.

1. Character

Credit manager need to identity the character of the customer that is whether he is willing to make the payment or not. Based on the record of past obligations and truthful efforts made by the customers to make the payment, a financial or credit manager chooses the customer.

2. Capacity

Capacity is the ability of the customer to make the payment. While taking decision, credit manager considers financial statement analysis which involves both capital and assets of the customer taken as security. Financial statement analysis concentrates on cash flow through which debt obligations can be repaid.

3. Capital

When customer is unable to meet the credit obligation from operating cash flow, credit manager considers the financial reserves of the customer for credit analysis.

4. Collateral

Collateral is the amount of assets which are pledged for the purpose of acquiring the loan or credit. If the amount of assets are large in number then even though the customer fails to repay, the firm has a greater chance to recover the funds.

5. Conditions

The present economic conditions prevailing in the market also influence the ability of customers to repay the loan. Hence, economic conditions are considered by the credit manager.

Q7. What are the factors influencing forecasting the receivables ?

Ans :

A firm can estimate the size of receivables based on the past experience, present credit policies and policies followed by other firms. Receivables can be forecasted with the help of the following factors,

1. Credit Period Allowed

The ageing of receivables is one of the important factors which helps in forecasting receivables. If the amount remains due for a long period, then the size of receivables will also be higher. Though increase in receivables leads to huge profits it also increases the costs.

2. Effect of Cost of Goods Solds

The effect of sales on cost of goods sold also helps in forecasting the receivables. Sometimes, an increase in sales leads to decrease in the cost of goods sold. If sales increases, the amount of receivables also increases. The estimation of sales helps in estimating the receivables.

3. Forecasting Expenses

Receivables are linked with number of expenses. Some of these expenses includes cost of funds tied down in receivables, bad debts, administrative expenses etc. An increase in receivables generates huge profits through increased sales. If the cost of receivables exceeds the increase in income then the credit sales must be stopped and if the cost of receivables is less than the revenue earned by sales then the sales must be expanded.

4. Forecasting Average Collection Period and Discounts

The credit collection policies helps in identifying the time allowed for payments and time allowed for getting discounts. If the average collection period is more then the size of receivables will also be more. A firm must control its average collection period and should also ascertain the number of customers availing discounts. Both average collection period and discount allowed help in forecasting the size of receivables.

5. Average Size of Receivables

The ascertainment of average size of receivables helps in forecasting receivables.

Average size of receivables = Estimated annual sales × Average collection period.

5.1.2 Credit Policy

Q8. Explain briefly about Credit Policy.

(OR)

Explain the credit policy of Lenient and Stringent.

Ans : **(May-19, Imp.)**

Credit policy is an important part of the overall strategy of a firm to market its products. It refers to those decision variables that influence the amount of trade credit i.e investment in receivables. Credit policy can be lenient or stringent.

There are two types of credit policies. Let us know about them in brief.

(a) Lenient/Loose/expansive Credit Policy

Under this policy, firms sell on credit to customers very liberally even to those customers whose creditworthiness is not known or doubtful. Because of liberal policy, sales increases and as a result, profit also increases but bad debts also increase and hence the firm face the problem of liquidity.

(b) Stringent /Tight /Restrictive Credit Policy

Here, the firm is very selective in extending credit. credit sales are made only to those customers who have proven worthiness. Because of tight credit standards, chances of bad debts and other credit costs are minimized but at the same time sales and profits, margins are restricted.

Therefore, the objectives of credit management should be the achievement of a balance that maximizes the overall return of the firm. The firms normally follow a credit policy which is in between lenient and stringent credit policies.

5.1.3 Cash Discount

Q9. Explain the dimensions of credit policy.

Ans :

The important dimensions of a firm's credit policy are credit terms, credit standards and collection policies.

1. Credit Terms

Credit terms are the stipulations under which the firm sells on credit to its customers. These are with regard to the repayment of the credit sales amount.

(a) Credit period

It is time duration for which credit is extended to the customers. it is generally stated in terms or a net date. For example, 'net 30' refers to the payment to be made within 30 days from the date of the credit sale.

(b) Cash discount

In order to induce the customers/debtors to pay their bills early, the cash discount is allowed. It indicates the rate of discount and the period for which the discount is offered. The customer is expected to make the payment by the net date if he does not avail himself of this discount offer.

Credit terms reflect a combination of both credit period and cash discount.

For example, if credit is extended as '3/ 10 net 30'. It implies a cash discount of 3% is offered to a customer who pays within 10 days from the sale date. If the offer is not availed, then, payment has to be made by the 30^{th} day. If not paid then, he would be deemed to have defaulted.

2. Credit Standards

Credit should be allowed to only those customers who contribute good credit risk. Credit standards are the basic criteria for extension of credit to customers. they are influenced by three C's of credit viz..

(i) Character: The willingness of the customer to pay.

(ii) Capacity: The ability of the customer to pay.

(iii) Condition: The prevailing economic condition.

Liberal credit standards push up sales by attracting more customers. But, this increases the incidence of bad debts loss, investment in receivables and cost of collection. Stiff credit standards tend to depress sales but at the same time, also reduce the incidence of bad debt loss, investment in receivables and collection costs.

3. Collection policy

It should aim at accelerating collection from slow payers and be reducing bad debts losses. The collection program should consist of the following:

- Monitoring the state of receivables.
- Dispatch of letters to the customers whose due date is nearing.
- Telegraphic and telephonic advice to the customers around the due date.
- The threat of legal action to overdue accounts.

If the firm is strict in its collection policy with the permanent customers who are temporarily slow payers, they get offended and shift to the competitors and thus, the firm loses its permanent business.

If the firm is lenient in collection policy, receivables increase and thus profitability reduces.

Hence, the optimum collection policy is a trade-off between costs and benefits which maximizes profitability and the value of the firm.

Q10. Explain the procedure of credit evaluation of individual accounts.

Ans :

Following are the steps involved in the credit evaluation procedure of individual accounts. They are,

1. Credit information
2. Credit investigation and analysis
3. Credit limits and
4. Collection procedures.

Step-1: Credit Information

Before granting credit, organizations must make sure that the receivables can be fully collected

on due date. It should be given only to those customers who are capable of repaying it on time. In order to provide credit, the organization should have credit information regarding each and every customer to whom the credit will be offered.

Gathering of credit information involves cost which should be less, than the potential profitability. Beside cost, there is a requirement of time to gather credit information. Based on cost and time, following sources are used to gather the credit information.

(i) Financial Statement

It is one of the simple way to acquire information relating to the financial position and performance of the respective customer to examine his financial statements like balance sheet and profit and loss account. It is easy to get financial statements of public limited companies than of partnership firms or individuals.

(ii) Bank References

It is another important way to gather the credit information from the banks where customers maintain their accounts. The organizations must try to acquire the information regarding the customer from his/her bank. The customer must instruct his/ her banker to provide the information about him to the organizations whenever required.

(iii) Trade References

An organization can take trade references from the respective customer. They may demand customer to reveal the names of trade persons or organizations with whom the customer is involved in current dealings. This source of gathering information from the firms involves no cost.

(iv) Other Sources

The organization can also acquire credit information from other sources like credit rating organizations such as CRISIL, CARE or ICRA and trade and industry associations.

Step-2: Credit Investigation and Analysis

After getting credit information, the organization plan to further investigate some matters. The credit investigation of an individual customers will be affected by the following factors.

(i) The kind of customer whether new or existing.

(ii) The credit policies and practices of the organization.

(iii) The nature of product whether if is perishable or seasonal.

(iv) The customers business line, background and respective trade risks.

(v) Size of the customers order and additional business expected with him/ her.

The analysis of credit information can be done in the following ways,

(a) Analysis of Credit File

A credit file of the customer should be maintained by the organization because, the regular scrutinization of customers credit file exhibit the credit position of the customer to the firm.

(b) Analysis of Financial Ratios

The analysis of customers financial position must be performed very carefully. Inorder to determine the customers liquidity position and ability to repay debts, firms should calculate the ratios. The customers performance is compared with the industry average and his nearest competitors to know whether his/her poor performance is because of .the general economic conditions or due to the internal deficiencies of the customers.

(c) Analysis of Business and Management

The organization must consider the quality of management and nature of customers business along with the appraising of financial soundness of the customer. Inorder to recognize the weaknesses relating to management of the customer's business, the organization should carry out a management audit.

Step-3: Credit Limits

A credit limit refers to a maximum amount of credit which is expanded by the organization at a specific point of time. It exhibits the level of risk taken by the organizations by providing goods on credit to the customers. The organization should take a decision regarding the amount and duration of credit if the organization has decided to increase the credit to the customer.

Credit limit must be periodically reviewed. If there is slow paying in credit, then it can be revised downward.

Step-4: Collection Procedures

A well developed collection policy and procedures should be followed by the organization for acquiring the dues from the customers. If the normal credit period given to the customer is completed and he did not made payment then the organization must send him a request letter reminding about overdue of account. If there is no response than organization can send the letter containing strong-words. Eventhough, the customer is not responding then the firm must handle them by telephone, telegram and personal visit of the organizations representative.

The organization has a right to proceed legally, if the customer is still not responding and the firm must scrutinize the financial position of the customer. If the financial position of the customer is weak then the legal proceedings against him will simply show his insolvency and the firm will not get anything from the customer. In such situation firm must wait and be patient or else accept the reduced payment for the settlement of the account.

5.2 Methods of Receivables Management

5.2.1 Debtors Outstanding and Ageing Analysis

Q11. Explain the various methods used in receivables management.

Ans : **(Imp.)**

Generally two methods have been commonly suggested for monitoring accounts receivable.

1. Traditional Approach
   (a) Average collection period
   (b) Aging Schedule
2. Collection Margin approach or Payment Pattern Approach

1. Traditional Approach

(a) Average Collection Period (AC): It is also called Day Sales Outstanding (DSOI) at a given time 't' may define as the ratio of receivable outstanding at that time to average daily sales figure.

$$ACP = \frac{\text{Accounts receivable at time "t"}}{\text{Average daily sales}}$$

According to this method accounts receivable are deemed to be in control if the ACP is equal to or less than a certain norm. If the value of ACP exceed the specified norm, collections are considered to be slow.

If the company had made cash sales as well as credit sales, we would have concentrated on credit sales only, and calculate average daily credit sales.

The widely used index of the efficiency of credit and collections is the collection period of number of days sales outstanding in receivable. The receivable turnover is simply ACP/360 days.

Thus if receivable turnover is six times a year, the collection period is necessarily 60 days.

(b) Aging Schedule – An aging schedule breaks down a firm's receivable by age of account. The purpose of classifying receivables by age group is to gain a closer control over the quality of individual accounts. It requires going back to the receivables' ledger where the dates of each customer's purchases and payments are available.

To evaluate the receivable for control purpose, it may be considered

desirable to compare this information with earlier age classification in that very firm and also to compare this information with the experience of other firms of same nature. Financial executives get such schedule prepared at periodic intervals for control purpose.

Aging Schedule classifies outstanding accounts receivable at a given point of time into different age brackets. The actual aging schedule of the firm is compared with some standard aging schedule to determine whether accounts receivable are in control. A problem is indicated if the actual aging schedule shows a greater proportion of receivable, compared with the standard aging schedule, in the higher age group.

This tool, therefore, cannot be used by an external analyst who has got no approach to the details of receivable.

2. Payment Pattern Approach

This pattern is developed to measure any changes that might be occurring in customer's payment behaviour.

It is defined in terms of proportion or percentage. For analyzing the payment pattern of several months, it is necessary to prepare a conversion matrix which shows the credit sales in each month and the pattern of collection associated with it.

The payment pattern approach is not dependent on sales level. It focuses on the key issue, the payment behaviour. It enables one to analyze month by month pattern as against the combined sales and payment patterns.

From the collection pattern, one can judge whether the collection is improving, stable, or deteriorating. A secondary analysis is that it provides a historical record of collection percentage that can be useful in projecting monthly receipts for each budgeting period.

PROBLEMS

1. A Company's collection period pattern is as follows:

- **10% of sales in the same month**
- **20 % of sales in the second month**
- **40 % of sales in the third month**
- **30% of sales in the fourth month**

The sales of the company for the first three quarters of the year are as follows:

Month	Quarter I	Quarter II	Quarter III
First	15,000	7,00	22,500
Second	15,000	15,000	15,000
Third	15,000	22,500	7,500
	45,000	45,000	45,000
Working Days	90	90	90

You are required to calculate the average age of receivables and comment upon the results.

Sol :

The collection period of the company's policy indicates that the outstanding receivables at the end of each month will consist of 90 % of the month's sales, 70 % of the previous month's sales and 30 % of the sales made two months earlier.

Statement of Accounts receivable and their age.

Sales	I Quarter	II Quarter	III Quarter
30% 1st Month	4,500	2,250	6,750
70% 2nd Month	10,500	10,500	10,500
90% 3rd Month	13,500	20,250	6,700
	28,500	33,000	24,000

$$\text{Average of receivable is} = \frac{\text{Accounts receivable (Debtors)}}{\text{Sales}} \times \text{No. of working days}$$

$$\text{I}^{st}\text{ Quarter} = \frac{28,500}{45,000} \times 90 = 57 \text{ Days}$$

$$\text{II}^{nd}\text{ Quarter} = \frac{33,000}{45,000} \times 90 = 66 \text{ Days}$$

$$\text{III}^{rd}\text{ Quarter} = \frac{24,000}{45,000} \times 90 = 48 \text{ Days}$$

The average age of receivable is affected because of sales is fluctuation.

2. Dryson Ltd. provides the following informations :

Particulars	Amount
Cash sales during the year	**1,50,000**
Credit sales during the year	**2,70,000**
Returns inward	**20,000**
Trade debtors in the beginning	**55,000**
Trade debtors at the end	**45,000**
Provision for bad and doubtful debts	**5,000**

Calculate :

(i) Debtors Turnover Ratio

(ii) Average Collection Period

Note : Take 360 days in a year and all returns are from credit sales.

Sol :

(i) $$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Annual Sales}}{\text{Average Trade Debtors}} = \frac{2,70,000 - 20,000}{(55,000 + 45,000) \times \frac{1}{2}} = \frac{2,50,000}{50,000} = 5 \text{ times}$$

(ii) Average Collection Period = $\frac{\text{No. of Working Days}}{\text{Debtors Turnover Ratio}} = \frac{360}{5} = 72 \text{ days}$

(OR) Average Collection Period = $\frac{\text{Average Trade Debtors} \times \text{No. of Working Days}}{\text{Net Credit Sales}}$

$= \frac{50{,}000 \times 360}{2{,}50{,}000} = 72 \text{ days.}$

5.3 INVENTORY MANAGEMENT

Q12. Define the term Inventory Management. Explain the various elements of inventory.

Ans :

Introduction

Inventories constitute the most significant part of current assets of the business concern.

It is also essential for smooth running of the business activities.

A proper planning of purchasing of raw material, handling, storing and recording is to be considered as a part of inventory management. Inventory management means, management of raw materials and related items. Inventory management considers what to purchase, how to purchase, how much to purchase, from where to purchase, where to store and when to use for production etc.

Meaning

The dictionary meaning of the inventory is stock of goods or a list of goods. In accounting language, inventory means stock of finished goods. In a manufacturing point of view, inventory includes, raw material, work in process, stores, etc.

Definitions

(i) According to The American Institute of Certified Public Account (AICPA) defines "inventory in the sense of tangible goods, which are held for sale, in process of production and available for ready consumption".

(ii) According to Bolten S.E, "Inventory refers to stock-pile of product, a firm is offering for sale and components that make up the product'

Elements of Inventory

1. Raw Material

It is basic and important part of inventories. These are goods which have not yet been committed to production in a manufacturing business concern.

2. Work in Progress

These include those materials which have been committed to production process but have not yet been completed.

3. Consumables

These are the materials which are needed to smooth running of the manufacturing process.

4. Finished Goods

These are the final output of the production process of the business concern. It is ready for consumers.

5. Stores and Spares

This category includes those products, which are accessories to the main products produced for the purpose of sale.

For example, stores and spares items are bolts, nuts, clamps, screws, etc. These spare parts are usually bought from outside or some times they are manufactured in the company also.

Q13. What are the factors influencing inventory.

Ans :

Following are the factors which influence the level of inventory,

1. Level of Sales

The most important factor which affects the level of inventory in a company is its level of sales activity of the same company. When the sales of a company increases, the amount of inventory will also increase.

2. Length of the Production

The companies which take much time to produce a unit must maintain relatively large amount of inventory. So that, any order during production process can be met immediately without any delays. The amount of inventory to be maintained depends on type of industry and product.

3. Access to Raw Materials

The amount of inventory of raw material is also necessary for the company, as it is the basis for finished goods. The level of raw material inventory depends on many factors such as,

(a) Lead time, which is the time period between ordering and delivery of a product.

(b) Storage capacity - availability of warehouses.

(c) Problems related to transportation.

(d) Risk of obsolescence.

(e) Physical life of raw materials.

(f) Skill in negotiating the price of raw material.

4. Life of Finished Goods

In many companies, finished products have some specific time period of life, after the expiry of that period they are of no value. In some companies, products loose their value due to changes in fashion, technology, style and due to obsolescence.

Hence, the above are the factors which determines the adequate amount of inventory to be maintained by the company.

Q14. What are the objectives of inventory management.

Ans : **(Imp.)**

1. Inventory management make sure that raw material, spares and finished goods are supplied to appropriate person at appropriate place to have uninterrupted production and sales.
2. It helps in avoiding overstocking and under stocking of inventory.
3. It avoids the losses due to deterioration, pilferage, wastages and damages.
4. It provides informations for planning and control ling inventory for short-term as well as long-term.
5. It controls the material cost so that overall cost of production can be reduced.
6. Only optimum level of investments are made in inventories which are required for operational and sales activities.
7. It avoids the error of ordering the stock twice.
8. In order to have proper organization an appropriate accounting system must be used at various levels of the organization.
9. To have continuous inventory control in order to have material in stock ledger same as material lying in stores.
10. To ensure quality of goods at reasonable prices.

Q15. State the various motives for holding inventories.

Ans :

The motives for holding inventories are as follows:

1. Transaction Motive

Every firm has to maintain some level of inventory to meet the day to day requirements of sales, production process, customer demand etc. This motive makes the firm to keep the inventory of finished goods as well as raw materials. The inventory level will provide smoothness to the operations of the firm. A business firm exists for business transactions which require stock of goods and raw materials.

2. Precautionary Motive

A firm should keep some inventory for unforeseen circumstances also. **For example,** the fresh supply of raw material may not reach the factory due to strike by the transporters or due to natural calamities in a particular area. There may be labour problem in the factory and the production process may halt. So, the firm must have inventories of raw materials as well as finished goods for meeting such emergencies.

3. Speculative Motive

The firm may be tempted to keep some inventory in order to capitalize an opportunity to make profit e.g., sufficient level of inventory' may help the firm to earn extra profit m case of expected shortage in the market.

Q16. State the problems of inventory management.

Ans :

Every firm has to face some or the other problems relating to inventory management which may cause damage to the inventory. Some problems relating to inventory management are as follows,

1. Problems in inventory management may develop because of recruitment of unqualified employees with less experience as incharge of inventory distribution.
2. When improper evaluation of company's growth in future is done it may result in problem of overstock of inventory.
3. Problem of bad customer relations may arise when business is unable to fulfill the demands of customer due to lack of enough products in stock.
4. Because of bottlenecks and weak points inventory management system may come to an end.
5. Computer inventory systems are not so simple, so this may create a problem for employees to keep an accurate record of inventory. It leads to either understock or overstock of inventory.
6. Misplacement of items in warehouse may also increase inventory costs and reduce profits.
7. Company must keep track of rise or fall in price of raw material so that price of the finished product must be fixed appropriately.

Q17. "The management of inventory must meet two - opposing needs." Enumerate.

Ans : **(June-18)**

1. Reasons to Hold Inventory

Most businesses hold inventory for many reasons. Among them are:

- **Meeting unexpected demands**

  The chain of supply and demand really comes into consideration here. Business people know that consumers expect goods and services when they need them. Thus, businesses usually stock up their inventories to meet these unexpected demands. These demands may result in overcrowding of inventories because we never know when the storm strikes and consumers would flock to buy the items.

- **Smoothing seasonal demands**

  With the comings and goings of major events and the changing seasons, most businesses have inventories at hand to smoothen the seasonal demands. For

example, Christmas is just round the corner. With the coming season, retail outlets as well as other businesses are busy meeting and stabilizing the upcoming Christmas demands of consumers. If they do not have any inventory, how can they meet these demands

- **Taking advantage of price discounts**

  When a business purchase goods from the manufacturers and suppliers, they usually get price discounts if they buy in bigger bulks. Manufacturers and suppliers give these discounts to attract and maintain regular buyers. Taking advantage of price discounts is helpful at times but one must always remember not to overstock the inventory because inefficient buying may cause failure of the business.

- **Hedging against price increase**

  Businesses usually hold inventory to avoid from the ever fluctuating market price of inventories. Thus, by having efficient and good inventory system, businesses can control their inventory cost.

- **Getting quality discounts**

  When businesses have inventory in store, they can get quality discounts because they know which goods and services to buy from the suppliers and manufacturers. It helps to learn where to get better deals than no deal at all.

2. Reasons why not to hold refer to Inventory Ordering

Holding, and Shortage Costs , even so inventory decisions involve a delicate balance between three classes of cost. These costs are:

- Ordering Cost- Cost of replenishing Inventory
- Carrying Cost- Cost of holding an item in inventory
- Shortage Cost- Temporary or permanent loss of sales when demand cannot be met.

Having inventory constantly at hand is good but sometimes there are hidden costs that would prove to be a menace for businesses. These costs include could cause:

- Longer lead times
- Reduce responsiveness
- Underlying problems are hidden rather than being exposed and solved
- Quality problems are not identified immediately
- No incentive for improvement of the process

5.4 Techniques of Inventory Management

5.4.1 Determining stock levels

5.4.1.1 Minimum Level; Maximum Level; Reorder Level

Q18. Explain briefly about determining stock levels in inventory management.

Ans : **(May-19, Imp.)**

(a) Minimum Level: This represents the quantity which must be maintained in hand at all times. If stocks are less than the minimum level then the work will stop due to shortage of materials. Following factors are taken into account while fixing minimum stock level :

- **Lead Time.** A purchasing firm requires some time to process the order and time is also required by the supplying firm to execute the order. The time taken in processing the order and then executing it is known as lead time It is essential to maintain some inventory during this period.
- **Rate of Consumption.** It is the average consumption of materials in the factory. The rate of consumption will be decided on the basis of past experience and production plans.
- **Nature of Material.** The nature of material also affects the minimum level. If a material is required only against special orders of the customer then minimum stock will not be required for such materials. Minimum stock level can be calculated with the help of following formula :

Minimum stock level = Re-ordering level-(Normal consumption x Normal Re-order period)

(b) Re-ordering Level: When the quantity of materials reaches at a certain figure then fresh order is sent to get materials again. The order is sent before the materials reach minimum stock level. Re-ordering level or ordering level is fixed between minimum level and maximum level. The rate of consumption, number of days required to replenish the stocks, and maximum quantity of materials required on any day are taker, into account while fixing re-ordering level. Re-ordering level is fixed with the following formula :

Re - ordering Level = Maximum Consumption x Maximum Re-order period.

(c) Maximum Level: It is the quantity of materials beyond which a firm should not exceed its stocks If the quantity exceeds maximum level limit then it will be overstocking. A firm should avoid overstocking because it will result in high material costs. Overstocking will mean blocking of more working capital, more space for storing the materials, more wastage of materials and more chances of losses from obsolescence Maximum stock level will depend upon the following factors :

1. The availability of capital for the purchase of materials.
2. The maximum requirements of materials at any point of time.
3. The availability of space for storing the materials.
4. The rate of consumption of materials during lead time.
5. The cost of maintaining the stores.
6. The possibility of fluctuations in prices.
7. The nature of materials. If the materials are perishable in nature, then they cannot be stored for long.
8. Availability of materials. If the materials are available only during seasons then they will have to be stored for the rest of the period.
9. Restrictions imposed by the Government. Sometimes, government fixes the maximum quantity of materials which a concern can store. The limit fixed by the government will become the limiting factor and maximum level cannot be fixed more than this limit.
10. The possibility of change in fashions will also affect the maximum level.

The following formula may be used for calculating maximum stock level :

Maximum Stock Level = Re-ordering Level + Re-ordering Quantity – (Minimum Consumption × Minimum Re-ordering period).

(d) Danger Level: It is the level beyond which materials should not fall in any case. If danger level arises then immediate steps should be taken to replenish the stocks even if more cost is incurred in arranging the materials. If materials are not arranged immediately there is a possibility of stoppage of work. Danger level is determined with the following formula:

Danger Level = Average Consumption × Maximum re-order period for emergency purchases.

(e) Average Stock Level: The average stock level is calculated as such :

$$\textbf{Average Stock Level} = \frac{\text{Minimum Stock Level} + \text{Maximum Stock Level}}{2}$$

5.4.2 Safety Stocks

Q19. How to Determine Safety Stocks.

Ans :

- Safety stock is a buffer to meet some unanticipated increase in usage.
- The usage of inventory cannot be perfectly forecasted. It fluctuates over a period of time.
- The demand for materials may fluctuate and delivery of inventory may also be delayed and in such a situation the firm can face a problem of stock-out.
- The stock- out can prove costly by affecting the smooth working of the concern.
- In order to protect against the stockout arising out of usage fluctuations, firms usually maintain some margin of safety or safety stocks.
- The basic problem is to determine the level of quantity of safety stocks.
- Two costs are involved in the determination of this stock i.e. opportunity cost of stock-outs and the carrying costs.
- The stock-outs of raw materials cause production disruption resulting into higher cost of production.
- Similarly, the stock-outs of finished goods result into the failure of the firm in competition as the firm cannot provide proper customer service.
- If a firm maintains low level of safety frequent stock-outs will occur resulting into the larger opportunity costs.
- On the other hand, the larger quantity of safety stocks involve higher carrying costs.

5.4.3 Economic Order Quantity (EOQ)

Q20. Define Economic Order Quantity. Explain the assumptions of EOQ.

Ans : **(Imp.)**

A decision about how much to order has great significance in inventory management. The quantity to be purchased should neither be small nor big because costs of buying and carrying materials are very high. Economic order quantity is the size of the lot to be purchased which is economically viable.

This is the quantity of materials which can be purchased at minimum costs. Generally, EOQ is the point at which inventory carrying costs are equal to order costs. In determining economic order quantity it is assumed that cost of managing inventory is made up solely of two parts i.e. ordering costs and carrying costs.

i) Ordering Costs: These are the costs which are associated with the purchasing or ordering of materials. These costs are also known as buying costs and will arise only when some purchases are made.

These costs will include costs of selling up machinery for manufacturing materials, time taken up in setting, cost of tools etc.

ii) Carrying Costs: These are the costs for holding inventories. These costs will not be incurred if inventories are not carried. The Planning Commission of India has estimated these costs between 15 percent to 20 percent of total costs. The longer the materials kept in stocks, the costlier it becomes by 20 percent every year.

The ordering and carrying costs have a reverse relationship. The ordering cost goes up with the increase in number of orders placed. On the other hand, carrying costs go down per unit with the increase in number of units, purchased and stored.

Assumptions

While calculating EOQ the following assumptions are made.

i) The supply of goods is satisfactory. The goods can be purchased whenever these are needed.

ii) The quantity to be purchased by the concern is certain.

iii) The prices of goods are stable. It results to stabilize carrying costs.

The EOQ can be calculated by using the following formula

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where

A = Annual consumption

O = Cost of placing an order

C = Inventory carrying costs of one unit.

Q21. Explain the limitations of EOQ.

Ans :

The limitations or weaknesses of EOQ are as follows,

1. Inconsistent Usage

EOQ is based on the assumption that the use of materials can be estimated and uniformly distributed. But, in case if the use of materials are unpredictable then EOQ formulae cannot be used. Different and complicated formulae has to be developed for wide variations in usage till these variations can be predicted.

2. Inaccurate Information

The accuracy of EOQ calculations depends on the accuracy of carrying cost and ordering cost information. It is very difficult to calculate the order cost and carrying cost, as order cost differs from one commodity to other commodity and carrying cost changes with the firm's opportunity cost of capital.

3. Calculations

Eventhough simple formulae is used for calculation, usage, computation" of EOQ consumes lot of time.

4. EOQ Ordering Should be Controlled with Judgement

An inventory manager should follow some corporate operating objectives while managing an inventory. But, sometimes order strategy clashes with the operating objective. So, order strategy restrictions must be developed for attaining the objectives.

5.4.4 ABC Analysis

Q22. Explain briefly about ABC Analysis.

(OR)

What is ABC Analysis, explain how it is useful in effective control of inventory.

Ans : **(May-19, Imp.)**

A-B-C analysis

"It is the inventory management techniques that divide inventory into three categories based on the value and volume of the inventories; 10% of the inventory's item contributes to 70 % of value of consumption and this category is known as A category. About 20 % of the inventory item contributes about 20% of value of consumption and this category is called category B and 70 % of inventory item contributes only 10 % of value of consumption and this category is called C category.

Inventory Breakdown Between Value and Volume

Category	Volume (%)	Value (%)
A	10	70
B	20	20
C	70	10
Total	100	100

ABC analysis can be explained with The help of the following Graphical presentation.

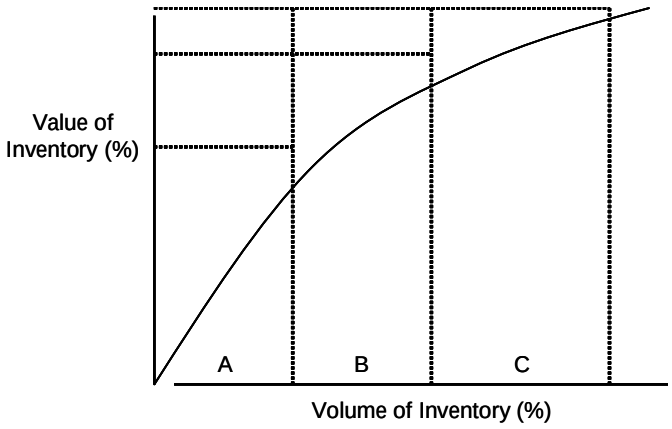


Fig. : ABC Analysis

Q23. Explain the Process of ABC Analysis.

(OR)

Explain the procedure followed for ABC Analysis.

Ans :

The steps involved in ABC analysis are as follows,

Step 1

In the first step, the information relating to the items i.e., total number of items, annual consumption in units and cost of each unit is called and tabulated.

Step 2

In the second step, the annual consumption value in rupees for each item is calculated by using the following formula, Annual consumption (in Rupees) = Number of units x Per unit cost.

Step 3

In this step, calculated annual consumption values are arranged in descending order.

Step 4

In the fourth step, the cumulative values of the annual consumption values are calculated.

Step 5

Finally, the items are classified into A, B and C categories by dividing the items into 70%, 20% and 10% of the annual consumption values.

Q24. What are the Benefits of ABC Analysis.

Ans : **(Imp.)**

- Better control over high-value inventory improves availability, and reduces losses and costs.
- More efficient use of stock management resources. For example, during stock count more resources are dedicated to A class than B or C class holdings, or fewer counts are made of B or C class holdings – which saves time and money.
- Relatively low value of B or C class holdings can allow a business to hold bigger buffer stocks to reduce stock outs.
- Fewer stock outs resulting in improved production efficiency.
- Fewer stock outs and improved production efficiency resulting in more reliable cycle time and, therefore, improved customer satisfaction.

Q25. State the Limitations of ABC Analysis.

Ans :

ABC analysis is considered as an effective technique for selective control. However it includes few limitations which are as follows,

1. Although ABC analysis is a fundamental tool for exercising selective control over various inventory items, it does not permit precise consideration of all relevant problems of inventory control.
2. If ABC analysis is not reviewed properly and updated periodically, the real purpose of control may not be furnished. For example, sea items, diesel, oil in a firm will become most high value items during crisis and hence requires more attention.
3. The periodic consumption value is considered as the basis for ABC classification because of which ABC classification can disregard the requirements of spare parts, which have high criticality, but the value of consumption is low.

PROBLEMS

3. Find out the economic order quantity and the number of orders per year from the following information:

Annual consumption: 36,000 units

Purchase price per units: Rs. 54

Ordering cost per order: Rs. 150

Inventory carrying cost is 20% of the average inventory.

Sol : **(Imp.)**

$$\text{Inventory} = \sqrt{\frac{2AO}{C}}$$

A = 36,000 units

O = Rs. 150

C = 20% of 54 = 10.8

$$\sqrt{\frac{2\times 36,000\times 150}{10.8}}$$

$$= \sqrt{10,00,000}$$

= 1000 units

4. A company uses annually 12,000 units of raw material costing ` 1.25 per unit. Placing each order costs ` 15 and the carrying costs are 15% per year per unit of the average inventory. Find the economic order quantity.

Sol :

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where,

A = 12,000 units

O = ` 15 per unit

C = 0.15 × 1.25 = 0.1875

$$EOQ = \sqrt{\frac{2\times 12,000\times 15}{0.1875}} = 1,385 \text{ units}$$

5. Find out the EOQ from the following details :

Estimated requirement for the year	**600 units**
Cost per unit	**` 20**
Ordering cost (per order)	**` 12**
Carrying cost (% of average inventory)	**20%**

Sol :

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where

A = 600 units

O = ` 20

C = 20% of 20 = 4

$$\sqrt{\frac{2\times 600\times 20}{4}}$$

$$= \sqrt{600}$$

= 77.45

6. The finance department of a corporation provides the following information carrying cost per unit of inventory is Rs.10, cost per order is Rs.20. No. of units required is 30,000 units.

(i) Determine EOQ

(ii) Total number of order to be place in year and

(iii) time gap between 2 order.

Sol : **(Imp.)**

(i) $EOQ = \sqrt{\frac{2AO}{C}}$

A = 30,000 units

O = 20 Rs. per order

C = 10 Rs.

$EOQ = \sqrt{\frac{2 \times 30,000 \times 20}{10}} = 346$ units

(ii) Total number of order $= \frac{A}{EOQ} = \frac{30,000}{346} = 86.7 = 87$ orders

(iii) Time gap between 2 consequitive order $= \frac{\text{No. of year}}{\text{No. of orders}} = \frac{12}{87} = 0.13.$

---

7. The annual requirement of a material is 2,34,555 units. The cost per unit is Rs.34 and the cost of placing an order is Rs. 345. The carrying cost per unit per annum is 18% of the unit price.

Find the

(i) EOQ

(ii) The number of orders to be placed in a year.

Sol :

$EOQ = \sqrt{\frac{2AO}{C}}$

A = 2,34,555 units

O = 345 Rs. per order

C = 34 of 18% = Rs. 6.12 = 6

(i) $EOQ = \sqrt{\frac{2 \times 2,34,555 \times 345}{6}}$

$= \sqrt{2,69,73,825} = 5194$ units

(ii) Total number of order = $\frac{A}{EOQ}$

$= \frac{2,34,555}{5194} = 45.15 = 45$ orders

---

8. From the following information, find out economic order quantity.

Annual Usage, 10,000 units

Cost of placing and receiving one order Rs. 50.

Cost of materials per unit Rs. 25

Annual Carrying cost of one unit : 10% of inventory value.

Sol :

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where, A = 10,000

O = 15

C = 2.5

$$EOQ = \sqrt{\frac{2\times10,000\times50}{2.5}} \left[\text{as } C = \frac{25\times10}{100} = 2.5\right]$$

$$= \sqrt{4,00,000} = 632 \text{ units.}$$

---

9. From the following information calculate :

(i) Re-order level

(ii) Maximum level

(iii) Minimum level

(iv) Average level

Normal usage: 100 units per week

Maximum usage: 150 units per week

Minimum usage: 50 units per week

Re-order quantity (EOQ) 500: units

Log in time: 5 to 7 weeks

Sol : **(Imp.)**

(i) Re-order Level

= Maximum consumption × Maximum Re-order period

= 150 × 7

= 1050 units

(ii) Maximum Level

= Re-order level + Re-order quantity-(Minimum consumption × Minimum delivery period)

= 1050 + 500 – (50 × 5)

= 1550 – (250)

= 1300 units

(iii) Minimum Level

= Re-order level – (Normal consumption × Normal delivery period)

= 1050 – (100 × 6)

= 1050 – 600

= 450 units

(iv) Average Level

$$= \frac{\text{Maximum level + Minimum level}}{2}$$

$$= \frac{1,300 + 450}{2}$$

= 875 units

10. From the following information, calculate minimum stock level, maximum stock level and reordering level :

i)	**Maximum Consumption**	**200 units per day**
ii)	**Minimum Consumption**	**150 units per day**
iii)	**Normal Consumption**	**160 unit per day**
iv)	**Re-order period**	**10 –– 15 days**
v)	**Re-order quantity**	**1,600 units.**
vi)	**Normal re-order period**	**12 days**

Sol :

Re–ordering level = Maximum Consumption × Maximum Re-order Period

200 × 15 = 300 units

Minimum Stock level = Re-ordering level – (Normal Consumption × Normal Re-ordering Period)

= 3,000–(160×12) = 3000 – 1920 = 1,080 units.

Maximum stock level = Re-ordering Level + Re-order Quantity – (Minimum Consumption × Minimum Re-order Period)

= 3,000 + 1,600 – (150 × 10)

= 3,000 + 1,600 – 1,500

= 4600 – 1500 = 3100 units

11. Ten items used by a tiny sector unit are given below: Classify them into A, B and C class.

Price (`)	Annual Usage (Quantity Nos.)
120.00	200
1080.00	100
0.60	2000
60.00	400
0.12	6000
2.40	1200
300.00	120
2.10	2000
3.00	1000
1200.00	80

Sol : **(Imp.)**

Step I

Calculation of Annual consumption value of given tiny sector in rupees.

Item No.	Price (`) (A)	Annual Usage (Quantity Nos.) (B)	Annual Consumption Value (`) (A × B)
1	120.00	200	24000
2	1080.00	100	108000
3	0.60	2000	1200
4	60.00	400	24000
5	0.12	6000	720
6	2.40	1200	2880
7	300.00	120	36000
8	2.10	2000	4200
9	3.00	1000	3000
10	1200.00	80	96000

Step 2

Rearrange the items in the descending order of Annual Consumption Value (ACV) and calculate cumulative value of ACV.

Item No.	Annual Consumption Value (ACV) in Descending Order	Cumulative Annual Consumption Value
2	108000	108000
10	96000	204000
7	36000	240000
1	24000	264000
4	24000	288000
8	4200	292200
9	3000	295200
6	2880	298080
3	1200	299280
5	720	300000
Total	**300000**	

Step 3

Since the basis for ABC classification is not given in the problem assume the following data.

Category	Percentage of Total ACV
A	70%
B	20%
C	10%

i.e., 70% of total ACV is consumed by category 'A' items, 20% of ACV is consumed by 'B' items and remaining of the ACV is consumed by category 'C' items.

Category A

$\therefore$ 70% of total ACV = 0.70 × 3,00,000

= 2,10,000

Since, this value is nearer to cumulative ACV of ` 2,04,000, the items Nos. 2 and 10 fall under the category 'A' items.

Category (A + B) together accounts for 90% of total ACV i.e., (70 + 20).

$\therefore$ 90% of total ACV = 0.9 × 3,00,000

= 2,70,000

Since, this value is nearer to cumulative value of ACV of ` 2,64,000, the items 7 and 1 fall under B category items.

The remaining items 4, 8, 9, 6, 3 and 5 are finally categorized under 'C' items.

Categorization of Items

A	B	C
2	7	4
10	1	8
		9
		6
		3
		5

12. Perform ABC analysis using the following data,

Item	Unit	Unit price (`)
1	700	5.00
2	2400	3.00
3	150	10.00
4	60	22.00
5	3800	1.50
6	4000	0.50
7	6000	0.20
8	300	3.50
9	30	8.00
10	2900	0.40
11	1150	7.10
12	410	6.20

Sol :

Step-1

This step involves calculating annual consumption on value of the items give in rupees.

Item	Annual Demand (in units)	Unit Price (`)	Total Cost (or) Annual Consumption Value
1	700	5	3500
2	2400	3	7200
3	150	10	1500
4	60	22	1320
5	3800	1.50	5700
6	4000	0.50	2000
7	6000	0.20	1200
8	300	3.50	1050
9	30	8.00	240
10	2900	0.40	1160
11	1150	7.10	8165
12	410	6.20	2542
			35,577

Step-2

In this step the items are arranged in the descending order of their Annual Consumption Value (ACV) and then the cumulative ACV is computed.

Item	Annual Consumption Value (ACV) in descending	Cumulative ACV
11	8165	8165
2	7200	15,365
5	5700	21,065
1	3500	24,565
12	2542	27,107
6	2000	29,107
3	1500	30,607
4	1320	31,927
7	1200	33,127
10	1160	34,287
8	1050	35,337
9	240	35,577
	35,577	

Step - 3

As the basis for ABC classification is not specified in the problem, the following assumption is made,

Category	Percentage of Total ACV
A	70%
B	20%
C	10%

i.e., 70% of total ACV is consumed by category 'A' items, 20% of AVC is consumed by category 'B' items and 'C' category items constitute 10% of total ACV.

70% of total ACV = 70%

$$\frac{70}{100} \times 35{,}577$$

= ` 24,904

As this value is almost nearer to the cumulative ACV of 24,565, the items which can be categorized under category 'A' are 11, 2, 5, 1

Category (A + B) together constitute 90% of ACV

$$\frac{90}{100} \times 35{,}577$$

= ` 32,019.3 = ` 32, 019

As this value is nearer to the cumulative ACV of ` 31,927, the items which can be categorized under category 'B' are 12, 6, 3, 4

Therefore, the remaining items which are being categorized under category 'C' are 7, 10, 8, 9

Categorization of Items

A	B	C
11	12	7
2	6	10
5	3	8
1	4	9

Exercise Problems

1. A factory uses annually 24,000 units of raw-material which costs ` 125 per unit placing each order costs ` 25 and carrying cost is 6% per year of the average inventory.

   (i) Find out the economic order quantity.

   (ii) How many orders are to be placed in a year ?

   (iii) What is the total inventory cost for the year including the cost of material.

   [**Ans : (i) 400 units, (ii) 60 orders, (iii) 30,03,000**]

2. An engine manufacturing company stocks the items as shown in the following table in its stores. The unit price, annual consumption quantity in terms of units per year are also given in the same table. Classify the items into A, B and C categories.

Component Code	Description	Price/Unit (`)	Annual Demand (units/year)
C001	Connecting rod	500	600
C002	Crank case	4000	600
C003	Cylinder	2000	600
C004	Cylinder head	3000	600
C005	Crank shaft	4000	600
C006	Cam	500	1200
C007	Nozzle	500	600
C008	Valve set	1000	1200
C009	Fuel injection pump	1500	600
C010	Exhaust pipe	500	600

[Ans: (A) 70%, (B) 20% and (C) 10%]

3. Classify the following 14 items in ABC categories,

Item no.	Monthly Consumption (`)
D-100	451
D-101	1052
D-102	205
D-103	893
D-104	843
D-105	727

D-106	412
D-107	214
D-108	188
D-109	172
D-110	170
D-111	5056
D-112	159
D-113	3424

[Ans: (A) 70%, (B) 20% and (C) 10%]

4. The stores of a repair shop has 10 items whose details are shown in the following table. Apply ABC analysis to the / stores and identify A class, B class, C class items.

Details of Store

Component code	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10
Price/unit (`)	110	3000	225	60	310	700	500	1000	7000	800
Units/year	125	40	310	720	425	525	900	90	510	600

[Ans : A = C06, B= C09, C10, C = C01, C02, C03, C04, C05, C07, C08]

Short Question and Answers

1. Define Receivable Management.

Ans :

Meaning

The term receivable is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business. Receivables are also one of the major parts of the current assets of the business concerns. It arises only due to credit sales to customers, hence, it is also known as Account Receivables or Bills Receivables. Management of account receivable is defined as the process of making decision resulting to the investment of funds in these assets which will result in maximizing the overall return on the investment of the firm.

Definitions

(i) According to Hampton, "Receivables are asset accounts representing amount owned to firm as a result of sale of goods or services in ordinary course of business".

(ii) According to Robert N. Authority, "Accounts receivables are amounts owned to the business enterprise, usually by its customers. Sometimes it is broken down into trade accounts receivables, the former refers to amounts owned by customers, and the later refers to amounts owned by employees and others".

2. Objectives of receivables management.

Ans :

Some of the objectives of receivables management are,

1. To assess the costs of receivables.
2. To manage the risk and profitability of the firm.
3. To optimize the sales value and the investments in receivables.
4. To develop the credit policy of the firm.
5. To assess the credit worthiness of the customers.
6. To control the receivables.
7. To smoothen the collection of receivables from the debtors.
8. To minimize the credit cost.
9. To facilitate the firm in availing the benefits of factoring.

3. Benefits of Receivables management.

Ans :

(i) Receivable management helps in increasing the sales of the firm by attracting new customers.

(ii) Investment in receivables is mainly focused towards growth of the firm.

(iii) Firms provide trade credit in order to protect its present sales from competitors.

(iv) When sales of the firm increases it ultimately leads to increase in profits.

4. Lenient/Loose/expansive Credit Policy

Ans :

Under this policy, firms sell on credit to customers very liberally even to those customers whose creditworthiness is not known or doubtful. Because of liberal policy, sales increases and as a result, profit also increases but bad debts also increase and hence the firm face the problem of liquidity.

5. Stringent /Tight /Restrictive Credit Policy

Ans :

Here, the firm is very selective in extending credit. credit sales are made only to those customers who have proven worthiness. Because of tight credit standards, chances of bad debts and other credit costs are minimized but at the same time sales and profits, margins are restricted.

Therefore, the objectives of credit management should be the achievement of a balance that maximizes the overall return of the firm. The firms normally follow a credit policy which is in between lenient and stringent credit policies.

6. Average Collection Period

Ans :

It is also called Day Sales Outstanding (DSOI) at a given time 't' may define as the ratio of receivable outstanding at that time to average daily sales figure.

$$ACP = \frac{\text{Accounts receivable at time "t"}}{\text{Average daily sales}}$$

According to this method accounts receivable are deemed to be in control if the ACP is equal to or less than a certain norm. If the value of ACP exceed the specified norm, collections are considered to be slow.

If the company had made cash sales as well as credit sales, we would have concentrated on credit sales only, and calculate average daily credit sales.

The widely used index of the efficiency of credit and collections is the collection period of number of days sales outstanding in receivable. The receivable turnover is simply ACP/360 days.

Thus if receivable turnover is six times a year, the collection period is necessarily 60 days.

7. Aging Schedule

Ans :

An aging schedule breaks down a firm's receivable by age of account. The purpose of classifying receivables by age group is to gain a closer control over the quality of individual accounts. It requires going back to the receivables' ledger where the dates of each customer's purchases and payments are available.

To evaluate the receivable for control purpose, it may be considered desirable to compare this information with earlier age classification in that very firm and also to compare this information with the experience of other firms of same nature. Financial executives get such schedule prepared at periodic intervals for control purpose.

Aging Schedule classifies outstanding accounts receivable at a given point of time into different age brackers. The actual aging schedule of the firm is compared with some standard aging schedule to determine whether accounts receivable are in control. A problem is indicated if the actual aging schedule shows a greater proportion of receivable, compared with the standard aging schedule, in the higher age group.

This tool, therefore, cannot be used by an external analyst who has got no approach to the details of receivable.

8. Elements of Inventory

Ans :

(i) Raw Material

It is basic and important part of inventories. These are goods which have not yet been committed to production in a manufacturing business concern.

(ii) Work in Progress

These include those materials which have been committed to production process but have not yet been completed.

(iii) Consumables

These are the materials which are needed to smooth running of the manufacturing process.

(iv) Finished Goods

These are the final output of the production process of the business concern. It is ready for consumers.

(v) Stores and Spares

This category includes those products, which are accessories to the main products produced for the purpose of sale.

For example, stores and spares items are bolts, nuts, clamps, screws, etc. These spare parts are usually bought from outside or some times they are manufactured in the company also.

9. Objectives of inventory management.

Ans :

(i) Inventory management make sure that raw material, spares and finished goods are supplied to appropriate person at appropriate place to have uninterrupted production and sales.

(ii) It helps in avoiding overstocking and under stocking of inventory.

(iii) It avoids the losses due to deterioration, pilferage, wastages and damages.

(iv) It provides informations for planning and control ling inventory for short-term as well as long-term.

(v) It controls the material cost so that overall cost of production can be reduced.

(vi) Only optimum level of investments are made in inventories which are required for operational and sales activities.

(vii) It avoids the error of ordering the stock twice.

(viii) In order to have proper organization an appropriate accounting system must be used at various levels of the organization.

10. How to Determine Safety Stocks?

Ans :

- Safety stock is a buffer to meet some unanticipated increase in usage.
- The usage of inventory cannot be perfectly forecasted. It fluctuates over a period of time.
- The demand for materials may fluctuate and delivery of inventory may also be delayed and in such a situation the firm can face a problem of stock-out.
- The stock- out can prove costly by affecting the smooth working of the concern.
- In order to protect against the stockout arising out of usage fluctuations, firms usually maintain some margin of safety or safety stocks.
- The basic problem is to determine the level of quantity of safety stocks.
- Two costs are involved in the determination of this stock i.e. opportunity cost of stock-outs and the carrying costs.
- The stock-outs of raw materials cause production disruption resulting into higher cost of production.
- Similarly, the stock-outs of finished goods result into the failure of the firm in competition as the firm cannot provide proper customer service.
- If a firm maintains low level of safety frequent stock-outs will occur resulting into the larger opportunity costs.
- On the other hand, the larger quantity of safety stocks involve higher carrying costs.

11. Define Economic Order Quantity.

Ans :

A decision about how much to order has great significance in inventory management. The quantity to be purchased should neither be small nor big because costs of buying and carrying materials are very high. Economic order quantity is the size of the lot to be purchased which is economically viable.

This is the quantity of materials which can be purchased at minimum costs. Generally, EOQ is the point at which inventory carrying costs are equal to order costs. In determining economic order quantity it is assumed that cost of managing inventory is made up solely of two parts i.e. ordering costs and carrying costs.

i) Ordering Costs: These are the costs which are associated with the purchasing or ordering of materials. These costs are also known as buying costs and will arise only when some purchases are made.

These costs will include costs of selling up machinery for manufacturing materials, time taken up in setting, cost of tools etc.

ii) Carrying Costs: These are the costs for holding inventories. These costs will not be incurred if inventories are not carried. The Planning Commission of India has estimated these costs between 15 percent to 20 percent

of total costs. The longer the materials kept in stocks, the costlier it becomes by 20 percent every year.

The ordering and carrying costs have a reverse relationship. The ordering cost goes up with the increase in number of orders placed. On the other hand, carrying costs go down per unit with the increase in number of units, purchased and stored.

12. Limitations of EOQ.

Ans :

The limitations or weaknesses of EOQ are as follows,

(i) Inconsistent Usage

EOQ is based on the assumption that the use of materials can be estimated and uniformly distributed. But, in case if the use of materials are unpredictable then EOQ formulae cannot be used. Different and complicated formulae has to be developed for wide variations in usage till these variations can be predicted.

(ii) Inaccurate Information

The accuracy of EOQ calculations depends on the accuracy of carrying cost and ordering cost information. It is very difficult to calculate the order cost and carrying cost, as order cost differs from one commodity to other commodity and carrying cost changes with the firm's opportunity cost of capital.

(iii) Calculations

Eventhough simple formulae is used for calculation, usage, computation" of EOQ consumes lot of time.

13. Benefits of ABC Analysis.

Ans :

- Better control over high-value inventory improves availability, and reduces losses and costs.
- More efficient use of stock management resources. For example, during stock count more resources are dedicated to A class than B or C class holdings, or fewer counts are made of B or C class holdings – which saves time and money.
- Relatively low value of B or C class holdings can allow a business to hold bigger buffer stocks to reduce stock outs.
- Fewer stock outs resulting in improved production efficiency.
- Fewer stock outs and improved production efficiency resulting in more reliable cycle time and, therefore, improved customer satisfaction.

14. Limitations of ABC Analysis.

Ans :

ABC analysis is considered as an effective technique for selective control. However it includes few limitations which are as follows,

(i) Although ABC analysis is a fundamental tool for exercising selective control over various inventory items, it does not permit precise consideration of all relevant problems of inventory control.

(ii) If ABC analysis is not reviewed properly and updated periodically, the real purpose of control may not be furnished. For example, sea items, diesel, oil in a firm will become most high value items during crisis and hence requires more attention.

(iii) The periodic consumption value is considered as the basis for ABC classification because of which ABC classification can disregard the requirements of spare parts, which have high criticality, but the value of consumption is low.

Choose the Correct Answer

1. Which of the following is not an inventory? [a]
   (a) Machines (b) Raw material
   (c) Finished products (d) Consumable tools
2. The following classes of costs are usually involved in inventory decisions except _____. [d]
   (a) Cost of ordering (b) Carrying cost
   (c) Cost of shortages (d) Machining cost
3. The cost of insurance and taxes are included in _____. [c]
   (a) Cost of ordering (b) Set up cost
   (c) Inventory carrying cost (d) Cost of shortages
4. 'Buffer stock' is the level of stock _____. [c]
   (a) Half of the actual stock
   (b) At which the ordering process should start
   (c) Minimum stock level below which actual stock should not fall
   (d) Maximum stock in inventory
5. The minimum stock level is calculated as _____. [a]
   (a) Reorder level – (Normal consumption x Normal delivery time)
   (b) Reorder level + (Normal consumption x Normal delivery time)
   (c) (Reorder level + Normal consumption) x Normal delivery time
   (d) (Reorder level + Normal consumption) / Normal delivery time
6. Which of the following is true for Inventory control? [d]
   (a) Economic order quantity has minimum total cost per order
   (b) Inventory carrying costs increases with quantity per order
   (c) Ordering cost decreases with lo size
   (d) All of the above
7. The time period between placing an order its receipt in stock is known as _____. [a]
   (a) Lead time (b) Carrying time
   (c) Shortage time (d) Over time
8. Re-ordering level is calculated as _____. [a]
   (a) Maximum consumption rate × Maximum re-order period
   (b) Minimum consumption rate × Minimum re-order period
   (c) Maximum consumption rate × Minimum re-order period
   (d) Minimum consumption rate × Maximum re-order period

9. The order cost per order of an inventory is Rs. 400 with an annual carrying cost of Rs. 10 per unit. The Economic Order Quantity (EOQ) for an annual demand of 2000 units is _____. [a]

(a) 400 (b) 440

(c) 480 (d) 500

10. Activities related to coordinating, controlling and planning activities of flow of inventory are classified as _____. [c]

(a) Decisional management (b) Throughput management

(c) Inventory management (d) Manufacturing management

11. Cost of product failure, error prevention and appraisals are classified as _____. [c]

(a) Stocking costs (b) Stock-out costs

(c) Costs of quality (d) None of the above

12. An example of purchasing costs include _____. [c]

(a) Incoming freight (b) Storage costs

(c) Insurance (d) Spoilage

13. If an average inventory is 2000 units and annual relevant carrying cost of each unit is ` 5 then annual relevant carrying cost will be _____. [a]

(a) ` 5,000 (b) ` 4,500

(c) ` 5,500 (d) ` 6,000

14. Decision model to calculate optimal quantity of inventory to be ordered is called _____. [b]

(a) Efficient order quantity (b) Economic order quantity

(c) Rational order quantity (d) Optimized order quantity

15. Receivables constitute a significant portion of _____. [c]

(a) Fixed assets (b) Current liabilities

(c) Current assets (d) Long term liabilities

16. _____ refers to the time taken by the bank in collecting cheques _____. [b]

(a) Cash float (b) Bank float

(c) Current assets (d) Current liabilities

17. Costs which are involved in receivables management are _____ [c]

(a) Capital costs (b) Collection costs

(c) (a) and (b) (d) None

18. The size of lot to be purchased which is economically viable _____ [b]

(a) Maximum level (b) Economic order quantity

(c) Recordering level (d) Minimum level

19. The prime objective of inventory management is _____. [c]

(a) Overstocking of inventory (b) Understocking of inventory

(c) Both (a) and (b) (d) None

Fill in the blanks

1. _____ is the process of making decisions relating to investment in trade debtors.
2. A proper planning of purchasing, handling, storing and accounting must be a part of _____
3. Average stock level = _____.
4. EOQ stands for _____.
5. _____ is related to decision such as credit standard, length of credit period, cash discount.
6. _____ cost associated with purchasing of material.
7. _____ costs for holding inventories.
8. _____ is allowed to expedite the collection of receivables.
9. _____ breaks down a firm's receivable by age of accounts.
10. EOQ = $\sqrt{\frac{2AO}{C}}$ where A = _____.
11. The term _____ is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business.
12. _____ cost incurred by the firm during the time period of sale of goods and its payment.
13. _____ cost involves different costs such as legal charges, other collection costs, costs incurred due to blockage of funds, cost for reminders etc.
14. _____ is the ability of the customer to make the payment.
15. _____ is the amount of assets which are pledged for the purpose of acquiring the loan or credit.
16. _____ policy is an important part of the overall strategy of a firm to market its products.
17. _____ are the stipulations under which the firm sells on credit to its customers.
18. Average Collection Period (AC) is also called _____.
19. _____ refers to stock-pile of product, a firm is offering for sale and components that make up the product.
20. _____ is a buffer to meet some unanticipated increase in usage.

ANSWERS

1. Receivables management
2. Inventory management
3. $\frac{\text{Minimum stock + Maximum stock}}{2}$
4. Economic order quantity.
5. Credit policy.
6. Ordering
7. Carrying cost
8. Cash discount
9. Ageing schedule
10. Annual Consumption
11. Receivable
12. Capital
13. Delinquency
14. Capacity
15. Collateral
16. Credit
17. Credit terms
18. Day Sales Outstanding.
19. Inventory
20. Safety stock

Present Value of Annuity of $1

Periods	1%	2%	3%	4%	5%	6%	8%	10%	12%	14%	16%	18%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.926	0.909	0.893	0.877	0.862	0.847	0.833
2	1.970	1.942	1.913	1.886	1.859	1.833	1.783	1.736	1.690	1.647	1.605	1.566	1.528
3	2.941	2.884	2.829	2.775	2.723	2.673	2.577	2.487	2.402	2.322	2.246	2.174	2.106
4	3.902	3.808	3.717	3.630	3.546	3.465	3.312	3.170	3.037	2.914	2.798	2.690	2.589
5	4.853	4.713	4.580	4.452	4.329	4.212	3.993	3.791	3.605	3.433	3.274	3.127	2.991
6	5.795	5.601	5.417	5.242	5.076	4.917	4.623	4.355	4.111	3.889	3.685	3.498	3.326
7	6.728	6.472	6.230	6.002	5.786	5.582	5.206	4.868	4.564	4.288	4.039	3.812	3.605
8	7.652	7.325	7.020	6.733	6.463	6.210	5.747	5.335	4.968	4.639	4.344	4.078	3.837
9	8.566	8.162	7.786	7.435	7.108	6.802	6.247	5.759	5.328	4.946	4.607	4.303	4.031
10	9.471	8.983	8.530	8.111	7.722	7.360	6.710	6.145	5.650	5.216	4.833	4.494	4.192
11	10.368	9.787	9.253	8.760	8.306	7.887	7.139	6.495	5.938	5.453	5.029	4.656	4.327
12	11.255	10.575	9.954	9.385	8.863	8.384	7.536	6.814	6.194	5.660	5.197	4.793	4.439
13	12.134	11.348	10.635	9.986	9.394	8.853	7.904	7.103	6.424	5.842	5.342	4.910	4.533
14	13.004	12.106	11.296	10.563	9.899	9.295	8.244	7.367	6.628	6.002	5.468	5.008	4.611
15	13.865	12.849	11.938	11.118	10.380	9.712	8.559	7.606	6.811	6.142	5.575	5.092	4.675
20	18.046	16.351	14.877	13.590	12.462	11.470	9.818	8.514	7.469	6.623	5.929	5.353	4.870
25	22.023	19.523	17.413	15.622	14.094	12.783	10.675	9.077	7.843	6.873	6.097	5.467	4.948
30	25.808	22.396	19.600	17.292	15.372	13.765	11.258	9.427	8.055	7.003	6.177	5.517	4.979
40	32.835	27.355	23.115	19.793	17.159	15.046	11.925	9.779	8.244	7.105	6.233	5.548	4.997

Present Value of $1

Periods	1%	2%	3%	4%	5%	6%	8%	10%	12%	14%	16%	18%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.926	0.909	0.893	0.877	0.862	0.847	0.833
2	0.980	0.961	0.943	0.925	0.907	0.890	0.857	0.826	0.797	0.769	0.743	0.718	0.694
3	0.971	0.942	0.915	0.889	0.864	0.840	0.794	0.751	0.712	0.675	0.641	0.609	0.579
4	0.961	0.924	0.888	0.855	0.823	0.792	0.735	0.683	0.636	0.592	0.552	0.516	0.482
5	0.951	0.906	0.863	0.822	0.784	0.747	0.681	0.621	0.567	0.519	0.476	0.437	0.402
6	0.942	0.888	0.837	0.790	0.746	0.705	0.630	0.564	0.507	0.456	0.410	0.370	0.335
7	0.933	0.871	0.813	0.760	0.711	0.665	0.583	0.513	0.452	0.400	0.354	0.314	0.279
8	0.923	0.853	0.789	0.731	0.677	0.627	0.540	0.467	0.404	0.351	0.305	0.266	0.233
9	0.914	0.837	0.766	0.703	0.645	0.592	0.500	0.424	0.361	0.308	0.263	0.225	0.194
10	0.905	0.820	0.744	0.676	0.614	0.558	0.463	0.386	0.322	0.270	0.227	0.191	0.162
11	0.896	0.804	0.722	0.650	0.585	0.527	0.429	0.350	0.287	0.237	0.195	0.162	0.135
12	0.887	0.788	0.701	0.625	0.557	0.497	0.397	0.319	0.257	0.208	0.168	0.137	0.112
13	0.879	0.773	0.681	0.601	0.530	0.469	0.368	0.290	0.229	0.182	0.145	0.116	0.093
14	0.870	0.758	0.661	0.577	0.505	0.442	0.340	0.263	0.205	0.160	0.125	0.099	0.078
15	0.861	0.743	0.642	0.555	0.481	0.417	0.315	0.239	0.183	0.140	0.108	0.084	0.065
20	0.820	0.673	0.554	0.456	0.377	0.312	0.215	0.149	0.104	0.073	0.051	0.037	0.026
25	0.780	0.610	0.478	0.375	0.295	0.233	0.146	0.092	0.059	0.038	0.024	0.016	0.010
30	0.742	0.552	0.412	0.308	0.231	0.174	0.099	0.057	0.033	0.020	0.012	0.007	0.004
40	0.672	0.453	0.307	0.208	0.142	0.097	0.046	0.022	0.011	0.005	0.003	0.001	0.001

Future Value of Annuity of $1

Periods	1%	2%	3%	4%	5%	6%	8%	10%	12%	14%	16%	18%	20%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.010	2.020	2.030	2.040	2.050	2.060	2.080	2.100	2.120	2.140	2.160	2.180	2.200
3	3.030	3.060	3.091	3.122	3.153	3.184	3.246	3.310	3.374	3.440	3.506	3.572	3.640
4	4.060	4.122	4.184	4.246	4.310	4.375	4.506	4.641	4.779	4.921	5.066	5.215	5.368
5	5.101	5.204	5.309	5.416	5.526	5.637	5.867	6.105	6.353	6.610	6.877	7.154	7.442
6	6.152	6.308	6.468	6.633	6.802	6.975	7.336	7.716	8.115	8.536	8.977	9.442	9.930
7	7.214	7.434	7.662	7.898	8.142	8.394	8.923	9.487	10.089	10.730	11.414	12.142	12.916
8	8.286	8.583	8.892	9.214	9.549	9.897	10.637	11.436	12.300	13.233	14.240	15.327	16.499
9	9.369	9.755	10.159	10.583	11.027	11.491	12.488	13.579	14.776	16.085	17.519	19.086	20.799
10	10.462	10.950	11.464	12.006	12.578	13.181	14.487	15.937	17.549	19.337	21.321	23.521	25.959
11	11.567	12.169	12.808	13.486	14.207	14.972	16.645	18.531	20.655	23.045	25.733	28.755	32.150
12	12.683	13.412	14.192	15.026	15.917	16.870	18.977	21.384	24.133	27.271	30.850	34.931	39.581
13	13.809	14.680	15.618	16.627	17.713	18.882	21.495	24.523	28.029	32.089	36.786	42.219	48.497
14	14.947	15.974	17.086	18.292	19.599	21.015	24.215	27.975	32.393	37.581	43.672	50.818	59.196
15	16.097	17.293	18.599	20.024	21.579	23.276	27.152	31.772	37.280	43.842	51.660	60.965	72.035
20	22.019	24.297	26.870	29.778	33.066	36.786	45.762	57.275	72.052	91.025	115.380	146.628	186.688
25	28.243	32.030	36.459	41.646	47.727	54.865	73.106	98.347	133.334	181.871	249.214	342.603	471.981
30	34.785	40.568	47.575	56.085	66.439	79.058	113.283	164.494	241.333	356.787	530.312	790.948	1,181.882
40	48.886	60.402	75.401	95.026	120.800	154.762	259.057	442.593	767.091	1,342.025	2,360.757	4,163.213	7,343.858

Future Value of $1

Periods	1%	2%	3%	4%	5%	6%	8%	10%	12%	14%	16%	18%	20%
1	1.010	1.020	1.030	1.040	1.050	1.060	1.080	1.100	1.120	1.140	1.160	1.180	1.200
2	1.020	1.040	1.061	1.082	1.103	1.124	1.166	1.210	1.254	1.300	1.346	1.392	1.440
3	1.030	1.061	1.093	1.125	1.158	1.191	1.260	1.331	1.405	1.482	1.561	1.643	1.728
4	1.041	1.082	1.126	1.170	1.216	1.262	1.360	1.464	1.574	1.689	1.811	1.939	2.074
5	1.051	1.104	1.159	1.217	1.276	1.338	1.469	1.611	1.762	1.925	2.100	2.288	2.488
6	1.062	1.126	1.194	1.265	1.340	1.419	1.587	1.772	1.974	2.195	2.436	2.700	2.986
7	1.072	1.149	1.230	1.316	1.407	1.504	1.714	1.949	2.211	2.502	2.826	3.185	3.583
8	1.083	1.172	1.267	1.369	1.477	1.594	1.851	2.144	2.476	2.853	3.278	3.759	4.300
9	1.094	1.195	1.305	1.423	1.551	1.689	1.999	2.358	2.773	3.252	3.803	4.435	5.160
10	1.105	1.219	1.344	1.480	1.629	1.791	2.159	2.594	3.106	3.707	4.411	5.234	6.192
11	1.116	1.243	1.384	1.539	1.710	1.898	2.332	2.853	3.479	4.226	5.117	6.176	7.430
12	1.127	1.268	1.426	1.601	1.796	2.012	2.518	3.138	3.896	4.818	5.936	7.288	8.916
13	1.138	1.294	1.469	1.665	1.886	2.133	2.720	3.452	4.363	5.492	6.886	8.599	10.699
14	1.149	1.319	1.513	1.732	1.980	2.261	2.937	3.797	4.887	6.261	7.988	10.147	12.839
15	1.161	1.346	1.558	1.801	2.079	2.397	3.172	4.177	5.474	7.138	9.266	11.974	15.407
20	1.220	1.486	1.806	2.191	2.653	3.207	4.661	6.727	9.646	13.743	19.461	27.393	38.338
25	1.282	1.641	2.094	2.666	3.386	4.292	6.848	10.835	17.000	26.462	40.874	62.669	95.396
30	1.348	1.811	2.427	3.243	4.322	5.743	10.063	17.449	29.960	50.950	85.850	143.371	237.376
40	1.489	2.208	3.262	4.801	7.040	10.286	21.725	45.259	93.051	188.884	378.721	750.378	1,469.772

FACULTY OF MANAGEMENT

B.B.A III - Semester (CBCS) Examination

Model Paper - I

FINANCIAL MANAGEMENT

Time : 3 Hours] [Max. Marks : 80

Note : Answer all the question

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following questions :

(a) Limitations of wealth maximization. **(Unit-I, SQA-6)**

(b) Agency Cost **(Unit-I, SQA-9)**

(c) Define Time value of money. **(Unit-II, SQA-1)**

(d) Merits and Demerits of IRR **(Unit-II, SQA-10)**

(e) What is WACC? **(Unit-III, SQA-2)**

(f) If earnings rate = 12%

Cost of capital = 8%

Value of share = ` 12 per share

If 60% is paid out as dividend

Calculate Gordons model. **(Unit-III, Prob. 17)**

(g) Define the term Working Capital **(Unit-IV, SQA-1)**

(h) Aging Schedule **(Unit-V, SQA-7)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note : Answer all the questions using the internal choice

2. (a) "Objectives of financial management have changed substantially in recent decades." Explain. **(Unit-I, Q.No. 7)**

OR

(b) Explain the various decisions of financial manager. **(Unit-I, Q.No. 16)**

3. (a) A project requires an investment of ` 1,44,000 and is expected to generate cash in flows of ` 54,000, ` 63,000, ` 72,000, ` 63,000 and ` 54,000 per annum for the next five years. The risk free rate is 10%.

Evaluate the project using IRR method. If the following certainty equivalents are to be considered, how would you evaluate and interpret the project?

Year	1	2	3	4	5
C.E	0.96	0.92	0.88	0.82	0.79

(Unit-II, Prob. 14)

OR

(b) Explain the various techniques of time value of money. **(Unit-II, Q.No. 2)**

4. (a) (i) Explain the various sources of finance. **(Unit-III, Q.No. 1)**

(ii) ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Redeemable after 8 years at a premium of 10%. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital. **(Unit-III, Prob. 8)**

OR

(b) (i) Explain the criticism of Walter's model. **(Unit-III, Q.No. 37)**

(i) Earnings = 15 per share

Dividend paid = 5 per share

IRR = 30%

Cost of capital = 22%

What is the market price of the share ? **(Unit-III, Prob. 16)**

5. (a) Determine the working required to finance a level of activity of 1,80,000 units of output for a year. The cost structure is as under :

Particulars	Cost per unit (Rs.)
Raw Materials	20
Direct Labour	5
Overheads (including depreciation of Rs. 5)	15
Total cost	40
Profit	10
Selling Price	50

Additional Information :

- Minimum desired cash balance is Rs. 20,000
- Raw materials are held in stock, on an average, for 2 months
- Work-in-progress (assume 50 per cent completion stage) will approximate to half-a-month production
- Finished goods remain in warehouse, on an average for a month
- Suppliers for materials extend a month's credit and debtors are provided 2 months credit. The cash sales are 25 per cent of total sales
- There is a time lag in payment of wages for a month and half-a-month in the case of overheads. **(Unit-IV, Prob. 1)**

OR

(b) Explain briefly about Concentration banking and lock box system. **(Unit-IV, Q.No. 23)**

6. (a) From the following information, calculate minimum stock level, maximum stock level and reordering level :

i)	Maximum Consumption	200 units per day
ii)	Minimum Consumption	150 units per day
iii)	Normal Consumption	160 unit per day
iv)	Re-order period	10 — 15 days
v)	Re-order quantity	1,600 units.
vi)	Normal re-order period	12 days

(Unit-V, Prob. 10)

OR

(b) Explain the various methods used in receivables management. **(Unit-V, Q.No. 11)**

FACULTY OF MANAGEMENT

B.B.A III - Semester (CBCS) Examination

Model Paper - II

FINANCIAL MANAGEMENT

Time : 3 Hours] [Max. Marks : 80

Note : Answer all the question

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following questions :

(a) Define Agency Problem. **(Unit-I, SQA-2)**

(b) Investment decisions **(Unit-I, SQA-7)**

(c) Present Value and Future Value techniques **(Unit-II, SQA-3, 4)**

(d) Advantages of NPV **(Unit-II, SQA-9)**

(e) Define capital structure. **(Unit-III, SQA-6)**

(f) Differences between share and debenture. **(Unit-III, SQA-5)**

(g) Define operating cycle. **(Unit-IV, SQA-4)**

(h) A company uses annually 12,000 units of raw material costing ` 1.25 per unit. Placing each order costs ` 15 and the carrying costs are 15% per year per unit of the average inventory. Find the EOQ. **(Unit-V, Prob. 4)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note : Answer all the questions using the internal choice

2. (a) "Finance function is closely related to other functions" - Discuss. **(Unit-I, Q.No. 18)**

OR

(b) Distinguish between Profit Maximization and Wealth Maximization. **(Unit-I, Q.No. 10)**

3. (a) (i) Mr. Rakesh is to receive ` 5,000 after five years from now. His time preference for money is 10% per annum. Calculate its present value, if the discount factor is 0.621. **(Unit-II, Prob. 6)**

(ii) An investor invested Rs. 3,45,678 every year in a bank for 13 years. The bank offers 7.5% interest p.a. Find the future value of money. **(Unit-II, Prob. 10)**

OR

(b) From the following information calculate the net present value of the two projects and suggest Which of the two projects should be accepted assuming a discount rate of 10%.

Particulars	Project X	Project Y
Initial Investment	` 20,000	` 30,000
Estimated Life	5 years	5 years
Scrap Value	` 1,000	` 2,000

The profits before depreciation and after taxes (cash flow) are as follows:

Particulars	Year 1 (`)	Year 2 (`)	Year 3 (`)	Year 4 (`)	Year 5 (`)
Project X	5,000	10,000	10,000	3,000	2,000
Project Y	20,000	10,000	5,000	3,000	2,000

(Unit-II, Prob. 11)

4. (a) (i) Explain the features of equity share capital. **(Unit-III, Q.No. 2)**

(ii) A firm is considering an expenditure of Rs.75 lakhs for expanding its operations.

The relevant information is as follows :

Number of existing equity shares = 10 lakhs

Market value of existing share = Rs.100

Net earnings = Rs.100 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 92 per share and the costs of new issue will be Rs. 2 per share.

(Unit-III, Prob. 4)

OR

(b) (i) Explain different types of dividend. **(Unit-III, Q.No. 31)**

(ii) A company earns Rs. 10 per share at an internal Rate of 15%. The firms policy of paying 40% earnings as dividends if the required Rate of Return 10%. Determine price of Share under Gordon's model. **(Unit-III, Prob. 18)**

5. (a) Saurashtra Co. Ltd. wishes to arrange overdraft facilities with its bankers from the period August to October 2010 when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data given below:

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)	Mfg. Exp. (Rs.)	Office Exp. (Rs.)	Selling Exp. (Rs.)
June	1,80,000	1,24,800	12,000	3,000	2,000	2,000
July	1,92,000	1,44,000	14,000	4,000	1,000	4,000
August	1,08,000	2,43,000	11,000	3,000	1,500	2,000
September	1,74,000	2,46,000	12,000	4,500	2,000	5,000
October	1,26,000	2,68,000	15,000	5,000	2,500	4,000
November	1,40,000	2,80,000	17,000	5,500	3,000	4,500
December	1,60,000	3,00,000	18,000	6,000	3,000	5,000

Additional Information:

(i) Cash on hand 1-08-2010 Rs.25,000.

(ii) 50% of credit sales are realized in the month following the sale and the remaining 50% in the second month following. Creditors are paid in the month following the month of purchase.

(iii) Lag in payment of manufacturing expenses half month.

(iv) Lag in payment of other expenses one month

(Unit-IV, Prob. 9)

OR

(b) State the components of Working Capital. Distinguish between Net working capital and Gross working capital. **(Unit-IV, Q.No. 3, 8)**

6. (a) Ten items used by a tiny sector unit are given below: Classify them into A, B and C class.

Price (`)	Annual Usage (Quantity Nos.)
120.00	200
1080.00	100
0.60	2000
60.00	400
0.12	6000
2.40	1200
300.00	120
2.10	2000
3.00	1000
1200.00	80

(Unit-V, Prob. 11)

OR

(b) Define receivable management. Explain credit policy of Lenient and Stringent. **(Unit-V, Q.No. 1, 8)**

FACULTY OF MANAGEMENT

B.B.A III - Semester (CBCS) Examination

Model Paper - III

FINANCIAL MANAGEMENT

Time : 3 Hours] [Max. Marks : 80

Note : Answer all the question

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following questions :

(a) Define financial management. **(Unit-I, SQA-1)**

(b) Types of Agency Relationship. **(Unit-I, SQA-10)**

(c) Features of capital budgeting. **(Unit-II, SQA-6)**

(d) Calculate the future value of `10,000 invested today for a period of 6 years, at an interest rate of 8% p.a. **(Unit-II, Prob. 1)**

(e) Walter's model. **(Unit-III, SQA-14)**

(f) Define Preference shares. **(Unit-III, SQA-1)**

(g) Lock box system. **(Unit-IV, SQA-11)**

(h) Benefits of ABC Analysis. **(Unit-V, SQA-13)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note : Answer all the questions using the internal choice

2. (a) Elucidate the relationship between financial management and other disciplines of management. **(Unit-I, Q.No. 3)**

OR

(b) State the various approaches to finance function. **(Unit-I, Q.No. 13)**

3. (a) (i) Elucidate the features of Capital Budgeting. **(Unit-II, Q.No. 7)**

(ii) Brief on the process of Capital Budgeting. **(Unit-II, Q.No. 10)**

OR

(b) Calculate the NPV and IRR of a project, the cash flows of which are as follows, (Amount in lakhs of Rupees)

Years	0	1	2	3	4	5
Investment	80					
Cash Inflows		30	40	50	30	10

Additional Information:

- The cost of capital is 10%.
- Salvage value at the end of 5th year is zero. **(Unit-II, Prob. 13)**

4. (a) (i) Explain the factors that influence capital structure. **(Unit-III, Q.No. 2)**

(ii) The following is the capital structure of "X" limited Co.,

Particulars	Book Value	Market Value
Debentures	300,000	3.00,000
Preference capital	200,000	2.00,000
Equity share capital	400,000	5,60,000
Retained earnings	100,000	1,40,000

After tax cost of capital are as follows :

Cost of debt. = 4.77%

Cost of preference = 10.53%

Cost of equity = 14.59%

Cost of Retained = 14%

Calculate average cost of capital using

- Book Value
- Market Value **(Unit-III, Prob. 12)**

OR

(b) The equity capitalization rate is 11%. Earnings per share is ` 20/-. Determine the values of the shares as per Gordon's Model, under conditions of certainty, when the rates of return on investment are 12%, 11% and 10%, assuming the following

- 90% Retention
- 80% Retention and
- 50% Retention **(Unit-III, Prob. 22)**

5. (a) Define cash budget. Explain various methods to preparation of cash budget. **(Unit-IV, Q.No. 18, 20)**

OR

(b) The board of directors of Aravind mills limited request you to prepare a statement showing the working capital requirements for a level of activity of 30,000 units of output for the year. The cost structure for the company's product for the above mentioned activity level is given below.

Particulars	Cost per Unit (Rs.)
Raw materials	20
Direct labour	5
Overheads	15
Total	40
Profit	10
Selling price	50

(i) Past experience indicates that raw materials are held in stock, on an average for 2 months.

(ii) Work in progress (100% complete in regard to materials and 50% for labour and overheads) will be half a month's production.

(iii) Finished goods are in stock on an average for 1 month.

(iv) Credit allowed to suppliers: 1 month.

(v) Credit allowed to debtors: 2 months.

(vi) A minimum cash balance of Rs 25,000 is expected to be maintained.

Prepare a statement of working capital requirements. **(Unit-IV, Prob. 3)**

6. (a) (i) Explain the limitations of EOQ. **(Unit-V, Q.No. 21)**

(ii) The finance department of a corporation provides the following information carrying cost per unit of inventory is Rs.10, cost per order is Rs.20. No. of units required is 30,000 units.

(a) Determine EOQ

(b) Total number of order to be place in year and

(c) Time gap between 2 order. **(Unit-V, Prob. 6)**

OR

(b) (i) State the objectives of Receivable management. **(Unit-V, Q.No. 4)**

(ii) Explain the dimensions of credit policy. **(Unit-V, Q.No. 9)**

FACULTY OF MANAGEMENT

BBA (CBCS) III - Semester Examination

July - 2021

FINANCIAL MANAGEMENT

Time : 2 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

ANSWERS

Note : Answer any four questions.

1. Wealth Maximization **(Unit-I, SQA-5)**
2. Discounting

Ans :

Discounting is the process of determining the present value of a payment or a stream of payments that is to be received in the future. Given the time value of money, a dollar is worth more today than it would be worth tomorrow. Discounting is the primary factor used in pricing a stream of tomorrow's cash flows.

3. Equity Shares **(Unit-III, SQA-3)**
4. Debentures **(Unit-III, Q.No. 8)**
5. Cash Budgets **(Unit-IV, SQA-6)**
6. Reorder Level **(Unit-V, Q.No. 18)**
7. Minimum and Maximum level of inventory **(Unit-V, Q.No. 18)**
8. Weight average cost of capital **(Unit-III, Q.No. SQA - 2)**

PART - B - (5 × 8 = 40 Marks)

Note : Answer the following Five Question.

9. Write about the objectives of Financial Management. **(Unit-I, Q.No. 7)**
10. Discuss about profit maximization v/s wealth maximization. **(Unit-I, Q.No. 10)**
11. Calculate IRR is the project requires an initial outlay of Rs. 6000/- and expected to generate equal cash inflows of Rs. 2000/- p.a. The project is having a life of 5 years. Advice Management if the company's cost of capital is 15%.

Sol :

Calculation of NPV at 15%

Years	Cashflow	Discounting factors @15%	PVCF
1	2,000	0.870	1,740
2	2,000	0.756	1512
3	2,000	0.658	1316
4	2,000	0.572	1,144
5	2,000	0.497	994
			6,706
	(–) Cashoutflow		6,000
		NPV	706

Calculation of NPV at 25%

Years	Cash flow	Discounting factors @25%	PVCF
1	2,000	0.8	1,600
2	2,000	0.64	1,280
3	2,000	0.512	1,024
4	2,000	0.410	820
5	2,000	0.328	656
			5,380
	(–) Cashoutflow		6,000
		NPV	(620)

$$IRR = 15 + \frac{706}{706-(-620)} \times 10$$

$$= 15 + \frac{706}{1326} \times 10$$

$$= 15 + 5.32$$

$$= 20.32\%$$

12. A Project cost Rs. 2500/- and is expected generate cash inflows of Rs. 900/-, Rs. 800/-, Rs. 700/-, Rs. 600/- and Rs. 500/- respectively for 5 years. The opportunity cost of capital may be assumed to be 10% calculate NPV for given project.

Ans :

Calculation of NPV

Years	Cashflows	Discounting factor @ 10%	Present Value
1	900	0.909	818
2	800	0.826	661
3	700	0.751	526
4	600	0.683	410
5	500	0.621	311
			2,726

NPV = Cash inflow – Cash out flow

= 2726 – 2,500

= 226

13. Explain about the dividend policy decision, types of dividend and determinants of dividend policy. **(Unit - III, Q.No. 30, 31, 32)**

14. Write about the various source of long term finance. **(Unit-III, Q.No. 1)**

15. Write about cash management techniques (Lock box, Concentration banking). **(Unit-IV, Q.No. 23)**

16. What is working capital management? Explain about determinates of working capital. **(Unit-IV, Q.No. 1, 9)**

17. From the following particulars, find out the EoQ:

(I) Annual demand - 12,000 units.

(II) Ordering Cost: Rs.90 per order.

(III) Inventory carrying cost per annum - Rs.15 per unit.

Ans :

Given that,

Annual Demand (A) = 12,000

Ordering Cost (O) = `90

Carrying Cost (C) = `15

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$EOQ = \sqrt{\frac{2 \times 12,000 \times 90}{15}}$$

$$= \sqrt{1,44,000}$$

= 379,47.

18. XP Ltd. requires 1000 units of material X on an average for a week which is purchased at a price of Rs. 30 per unit. The ordering cost is Rs.150 per purchase order and inventory carrying cost per unit amounted to Rs.0.06 per week. The re-order period is 1 to 3 weeks and the weekly usage of material X varies from 750 to 1250 units. You are required to compute.

(a) The Economic Order Quantity (EoQ)

(b) Re-Order stock level minimum stock level and maximum stock level.

Ans :

Annual demand

= 1000 Units × 52 weeks

= 52,000

Ordering cost = 150 ` per order

Carrying cost = 0.06 × 52 week

= ` 3.12 per unit

i) EOQ

$$= \sqrt{\frac{2AO}{C}}$$

$$= \sqrt{\frac{2 \times 52000 \times 150}{3.12}}$$

$$= \sqrt{50,00,000}$$

= 2,236 units.

ii) Reorder level

= maximum consumption × maximum reorder period

= 1250 × 3

= 3,750

iii) Minimum Stock level

= Reorder level – (Normal consumption × Normal order period)

Normal consumption = $\frac{1}{2}$ × (Max units + min Units)

= $\frac{1}{2}$ × (1250 + 750)

= 1000 Units

Normal reorder period = $\frac{1}{2}$ × (Max . weeks + min. weeks)

= $\frac{1}{2}$ (3 + 1)

= 2 weeks

= 3750 – (1000 × 2)

= 3750 – 2000 = 1750

iv) Maximum stock level

Reorder level + Reorder quantity – (Minimum Consumption × Minimum reorder period)

= 3,750 + 2,236 – (750 × 1)

= 3,750 + 1,486

= 5,236

FACULTIES OF MANAGEMENT

B.B.A IV Semester (CBCS) Examination

May - 2019

FINANCIAL MANAGEMENT

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)
[Short Answer type]

1. Answer any five of the following in about 20 lines each.

a) Investment Decision **(Unit-I, Q.No. 16)**

b) Present and Future Value of Money **(Unit-II, SQA-3, 4)**

c) Preference Share Capital **(Unit-III, Q.No. 4)**

d) Lenient and Stringent Credit Policy **(Unit-V, Q.No. 8)**

e) Minimum and Maximum Level of Inventory **(Unit-V, Q.No. 18)**

f) Weighted Average cost of Capital **(Unit-III, SQA-2)**

g) Stock Dividend **(Unit-III, Q.No. 31)**

h) Pre and post tax cost of debt **(Unit-III, Q.No. 25)**

PART - B (5 × 12 = 60 Marks)
[Essay Answer type]

Note: Answer all the questions using the internal choice.

2. a) Define Financial Management and elucidate the relationship between Financial Management and other disciplines of Management. **(Unit-I, Q.No. 1, 3)**

OR

b) Discuss the objectives of Financial Management. **(Unit-I, Q.No. 7)**

3. a) A Project requires on investment of Rs. 12,00,000 and has a life of four years. The expected net cash flows from the project over the four years are Rs.4,50,000, Rs. 5,40,000, Rs. 3,60,000 and Rs. 2,82,000. The cost of capital is 11%. Find the internal rate of return of the project.

Ans :

Let us calculate NPV at 10% 20% discount rates

Year	Cashflows	Discounting factor @ 10%	PVCF
1	4,50,000	0.909	4,09,050
2	5,40,000	0.826	4,46,040
3	3,60,000	0.751	2,70,360
4	2,82,000	0.683	1,92,606
			13,18,056

NPV = Cash inflow – Cash outflow

= 13,18,056 – 12,00,000

= 1,18,056

Year	Cashflows	Discounting factor @ 20%	PVCF
1	4,50,000	0.833	3,74,850
2	5,40,000	0.674	3,74,760
3	3,60,000	0.579	2,08,440
4	2,82,000	0.482	1,35,924
			10,93,974

NPV = Cashinflow – Cashoutflow

10,93,974 – 12,00,000

= –1,06,026.

$$\text{IRR} = \text{lower rate} + \frac{\text{NPV at Lower rate}}{\text{NPV at lower rate} - \text{NPV at Higher rate}} \times \text{Differences in rates}$$

$$= 10 + \frac{1,18,056}{1,18,056 - (-1,06,026)} \times 10$$

$$= 10 + \frac{1,18,056}{2,24,08} \times 10$$

10 + 5.27 = 15.27%.

OR

b) i) An investor invested Rs. 3,45,678 every year in a bank for 13 years. The bank offers 7.5% interest p.a. Find the future value of money.

Ans :

$$\text{Future Value} = \frac{x(1+r)^n - 1)}{r}$$

$$= 3,45,678 \frac{((1+0.075)^{13} - 1)}{0.075}$$

$$= \frac{3,45,678((1.075)^{13} - 1)}{0.075}$$

$$= \frac{3,45,678(2.5604 - 1)}{0.075}$$

$$= \frac{3,45,678(1.5604)}{0.075}$$

$$= \frac{5,39,395.9}{0.075}$$

$$= 71, 91, 946$$

ii) A person is likely to get Rs. 9,876 every year for the next seven years. If the discount rate is 5%, find the present value of this money.

Ans :

Present Value = $X[\{1 - (1/1 + r)^n\}/r]$

$$= 9876\ [\{1 - (1/1 + 0.05\}]/0.05]$$

$$= 9876 \left[\frac{0.28932}{0.05}\right]$$

$$= 9876\ (5.7864) = 57147.$$

4. a) i) Explain the features of Equity Share Capital. **(Unit-III, Q.No. 2)**

ii) A Company issued debentures with a face value of Rs. 1000 and interest rate of 8% p.a. The applicable tax rate is 30% and the current market price of the debenture is Rs. 1,111 and 6 years to maturity. Find the after tax cost of debt.

Ans :

P = 1,000

MP = 1,111

I = 8% $\rightarrow$ 1,000 × 8% = 80

n = 6 years

t = 30%

After tax cost of debt = Before tax cost of debt (1– Tax Rate)

$$\text{Before tax cost of debt} = \frac{1+(P-Mp)/n}{0.6(MP)+0.4(p)} \times 100$$

$$= \frac{80+(1,000-1,111)/6}{0.6(1,111)+0.4(10,000)} \times 100$$

$$= \frac{80+(-18.5)}{666.6+400} \times 100$$

$$= \frac{61.5}{1066.6} \times 100 = 5.77\%$$

After tax cost of debt = 5.77 (1 – Tax rate)

$$= 5.77\ (1 - 0.3)$$

$$= 5.77\ (0.7) = 4.039$$

OR

b) i) Write a detailed note regarding the features of debt capital. **(Unit-III, Q.No. 25)**

ii) A Company paid a dividend of Rs. 5.67 per Share on its Equity Shares. These dividends have been growing at 9% p.a. For a long time now and are expected to grow at this rate for a long future period. The current market price per Share is Rs. 66. Find the cost of equity.

Ans :

$D_1 = 5.67$

MP = 66

G = 9%

$$ke = \frac{D_1}{MP} + G = \frac{5.67}{66} + 0.09$$

$$= 0.0859 + 0.09$$

$$= 0.1759$$

5. a) Define working capital and explain in detail the determinants of working capital. **(Unit-IV, Q.No. 1, 9)**

OR

b) Explain the various steps in Receipts and Payments method of preparing a Cash Budget. **(Unit-IV, Q.No. 20)**

6. a) What is ABC analysis, explain how it is useful in effective control of inventory. **(Unit-V, Q.No. 22)**

OR

b) The annual requirement of a material is 2,34,555 units. The cost per unit is Rs.34 and the cost of placing an order is Rs. 345. The carrying cost per unit per annum is 18% of the unit price. Find the EOQ and the number of orders to be placed in a year.

Ans :

A = 2,34,555 Units

O = 345

C = 34 × 18% = 6.12

i) $$\in OQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 234555 \times 345}{6.12}}$$

= 5142 Units.

ii) Number of Orders

$$= \frac{\text{Annual requirement}}{\in oQ}$$

$$= \frac{2,34,555}{5142} = 45.6, \text{ 45 orders}$$

FACULTIES OF MANAGEMENT

B.B.A IV Semester (CBCS) Examination

May/June - 2018

FINANCIAL MANAGEMENT

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

[Short Answer type]

ANSWERS

1. Answer any five of the following questions is not exceeding 20 lines each.

a) Financial Management **(Unit-I, SQA - 1)**

b) Agency Problem **(Unit-I, SQA - 2)**

c) Time Value of Money (TVM) **(Unit-II, SQA - 1)**

d) Capital Budgeting **(Unit-II, SQA - 2)**

e) Mutual Funds

Ans :

A mutual fund is an investment vehicle where many investors pool their money to earn returns on their capital over a period. This corpus of funds is managed by an investment professional known as a fund manager or portfolio manager. It is his/her job to invest the corpus in different securities such as bonds, stocks, gold and other assets and seek to provide potential returns. The gains (or losses) on the investment are shared collectively by the investors in proportion to their contribution to the fund.

f) Shares Vs Debentures **(Unit-III, SQA - 5)**

g) Working Capital Budget **(Unit-IV, SQA - 1)**

h) Factoring

Ans :

A factor is an intermediary agent that provides cash or financing to companies by purchasing their accounts receivables. A factor is essentially a funding source that agrees to pay the company the value of an invoice less a discount for commission and fees. Factoring can help companies improve their short-term cash needs by selling their receivables in return for an injection of cash from the factoring company. The practice is also known as factoring, factoring finance, and accounts receivable financing.

PART - B (5 × 12 = 60 Marks)

[Essay Answer type]

2. a) "Finance function is closely related to other function" - Discuss. **(Unit-I, Q.No. 18)**

OR

b) "Objectives of financial management have changed substantially in recent decades" - Explain. **(Unit-I, Q.No. 7)**

3. a) Mr. X has rented out a portion of his house for 4 years at an annual rent of Rs. 6,000 with the stipulation that the rent will increase by 10% every year. If the required rate of return is 15%. what is the present value of the expected series of rent ?

Ans :

Calculation of Rent

Years	Amount
1.	6,000
2.	6,600 (6,000 × 1.10)
3.	7,260 (6,600 × 1.10)
4.	7,986 (7,260 × 1.10)

Calculation of Present Value

Year	Cashflows	Discount rate @ 15%	PVCF
1	6,000	0.870	5,220
2	6,600	0.756	4,990
3	7,260	0.658	4,777
4	7,986	0.572	4,568
			19,555

OR

b) A company is examining two mutually exclusive investment proposals. The management of the company uses certainty equivalents (CE) to evaluate new proposals. From the following information advise the company which project should be taken up. The initial cash outlay for both the proposals is Rs. 25,000.

Year	Proposal A		Proposal B	
	CFAT (`)	CE	CFAT (`)	CE
1	15,000	0.8	9,000	0.9
2	15,000	0.7	18,000	0.8
3	15,000	0.6	12,000	0.7
4	15,000	0.5	16,000	0.4

The firms cost of capital is 12%.

Ans :

Calculation of NPV of Proposal A

Year	Expected cashflow	Certainty equivalent factor	Certainty equivalent factor	Discount factor @12%	Present value
0	–25,000	1.0	–25,000	1.0	–25,000
1	15,000	0.8	12,000	0.893	10,716
2	15,000	0.7	10,500	0.797	8368.5
3	15,000	0.6	9,000	0.712	6,408
4	15,000	0.5	7,500	0.636	4,770
					5262.5

Calculation of NPV of Proposal B

Year	Expected cash flow	Certainty equivalent factor	Certainty equivalent factor	Discount factor @12%	PVCF
0	–25,000	1.0	–25,000	1.0	–25,000
1	9,000	0.9	8100	0.893	7233.3
2	18,000	0.8	14,400	0.797	11,476.8
3	12,000	0.7	8,400	0.712	5980.8
4	16,000	0.4	6,400	0.636	4070.4
					3761.3

Proposal A is more than proposal B i.e., proposal A should be accepted.

4. a) "Debentures occupy a very important place in the financial plan". Discuss the statement and point out the limitations of debenture financing. **(Unit-III, Q.No. 9, 11)**

OR

b) "Learning is beneficial to both, the lease as well as the lessor" - Examine.

Ans :

Benefits to lessor and lessee under leasing agreement:

1. **Lessor can claim depreciation:** As the equipment is purchased by the lessor and handed over to the lessee, the ownership is retained by the lessor but only the possession is given to the lessee. The lessor claims depreciation and thereby gets some concessions under the Income Tax Act. The depreciation claimed is also on the basis of Written down value method (WDV) .

2. **Sales tax benefits for lessor:** Sales tax will be paid by the lessor as the equipment is bought by him. But later on, under financial lease he can claim a part of the sales tax from the lessee, when the equipment is transferred to the lessee. The lessee will be paying the sales tax on lesser amount. This is so because by the time the property or equipment is sold to him, its value gets reduced.

3. **Income tax benefits for lessee:** The lessee gets certain benefits in the payment of rent, maintenance of the equipment and other promotional expenditure incurred by him in keeping the equipment operational. For all these expenses, the lessee will be claiming tax benefits under the Indian Income Tax Act. The benefits will be more when initial rentals are higher. During the later part of the period, it will become less.

4. **Modernization through lease finance:** With the enhancement in the limit on investment on fixed capital for small scale industries and tiny sector, the importance of leasing companies has gone up. At present, small scale industries can have fixed capital upto Rs. 1 crore and tiny sector up to Rs. 2 lakhs. Hence, most of the small scale industries are going in for modernization through lease finance. The tiny sector is also putting to use the benefit of leasing companies.

5. a) The management of Loyal Industries has called for a statement showing working capital to finance a level of activity of 3,60,000 units output for next year. The cost structure is mentioned below :

	Cost per unit (Rs)
Raw material	20
Direct labour	5
Overhead (including depreciation of Rs. 5	5
Total cost	40
Profit	10
Selling price	50

Additional Information:

i) Minimum desired cash balance is Rs. 2,00,000

ii) Raw material are held in stock, on average for 2 months

iii) Work-in-progress (assume 50% completion) will approximate to half-a- month's production.

iv) Finished goods remain in Warehouse, on an average for a month.

v) Suppliers of materials extend a month credit and debtors are provided 2 months credit; cash sales 25% of total sales.

vi) There is a time lag in payment of wages of a month; and half-a-month in the case of overheads.

From the above facts, prepare a statement showing working capital requirements.

Ans :

Statement of Working Capital Requirements

	Particulars	Amount (`)
(A)	**Current Assets**	
(i)	Stock of raw materials (2 months) $\left[3,60,000 \times 20 \times \frac{2}{12}\right]$	12,00,000
(ii)	Work-in-progress $\left(\frac{1}{2}\text{months}\right)$	
	Raw materials $\left[3,60,000 \times 20 \times \frac{0.5}{12}\right]$	3,00,000
	Direct labour $\left[3,60,000 \times 5 \times \frac{0.5}{12} \times \frac{50}{100}\right]$	37,500
	Overheads $\left[3,60,000 \times 10 \times \frac{0.5}{12} \times \frac{50}{100}\right]$	75,000
(iii)	Finished goods (one month) $\left[3,60,000 \times 35 \times \frac{1}{12}\right]$	10,50,000
(iv)	Sundry debtors (two months) $\left[3,60,000 \times 35 \times \frac{3}{5} \times \frac{2}{12}\right]$ (WN - 1)	15,75,000
(v)	Cash balance	2,00,000
	Total of Current Assets	**44,37,500**
(B)	**Current Liabilities:**	
(i)	Sundry creditor (one month) $\left[3,60,000 \times 20 \times \frac{1}{12}\right]$	6,00,000
(ii)	Time lag in wages (one month) $\left[3,60,000 \times 5 \times \frac{1}{12}\right]$	1,50,000
(iii)	Time lag in overheads $\left(\frac{1}{2}\text{months}\right)\left(3,60,000 \times 10 \times \frac{0.5}{12}\right)$	1,50,000
	Total of Current Liabilities	**9,00,000**
	Net working capital required: (A – B)	**38,75,000**

OR

b) What is operating cycle? Explain the importance of cash budget in cash management. **(Unit-IV, Q.No. 12, 19)**

6. a) A firm has credit sales amounting to Rs. 32,00,000. The sale price per unit is Rs. 40; the variable cost is Rs. 25 per unit while the average cost per unit is Rs. 32.

The average age of accounts receivables of the firm is 72 days. The firm is planning to tighten credit standards. It will result in fall in sales volume to Rs. 28,00,000 and the average age of the accounts receivable to 45 days. Assume a 20% rate of return. Is the proposal under consideration feasible?

Ans :

Statement Showing Incremental Analysis

Particulars		Present Policy	Propose Policy	Difference
	Sales	32,00,000	28,00,000	(4,00,000)
Less:	Variable Cost @ ` 25 P.U.	20,00,000	17,50,000	(2,50,000)
	Fixed Cost (80,000 × 7)	5,60,000	5,60,000	–
	Investment cost (WN)	1,02,400	57,750	(44,650)
	Saving (deficiency)	**5,37,600**	**4,32,250**	**(1,05,350)**

Comment

If the firm adopts more strict credit collection policy, then the profits will be declined by ` 1,05,350. Hence, the proposal is not feasible.

Working Notes (WN)

1. Calculation of Investment in Accounts Receivable

Investment in Accounts Receivables = [(Number of units × V.C + Total Fixed Cost)]/

$$\left[\frac{\text{360 Days (assumed)}}{\text{Avg. Age of Accounts Receivable}}\right]$$

Present Policy = [(80,000 units × 25 + 5,60,000)]/5 = ` 5,12,000

Proposed Policy = (70,000 units × ` 25 + 5,60,000)/8 = 2,88,750.

2. Calculation of Cost of Investment

Present Policy = ` 5,12,000 × 20% = 1,02,400

Proposed Policy = ` 2,88,750 × 20% = 57,750

OR

b) "The management of inventory must meet two – opposing needs" – Enumerate. **(Unit-V, Q.No. 17)**

FACULTY OF MANAGEMENT

BBA III-Semester(CBCS) Examination

December - 2021

FINANCIAL MANAGEMENT

Time : 2 Hours] **[Max. Marks : 80**

Note : Answer any four questions.

PART - A - (4 × 5 = 20 Marks)

ANSWERS

1. Explain Profit maximization. **(Unit-I, SQA-4)**
2. What is Time Value of Money? **(Unit-II, SQA-1)**
3. What is Compounding?

Ans :

The Process by which the value of an investment grows exponentially as a result of earning interest on both the principal and the accumulated interest is known as compounding. In simple terms, the process of determining future value is know as compounding.

4. What is Preferential Shares? **(Unit-III, SQA-1)**
5. What is cost of Capital? **(Unit-III, SQA-11)**
6. Describe EOQ. **(Unit-V, SQA-11)**
7. Explain Safety stock. **(Unit-V, SQA-10)**
8. Explain Weighted average cost of capital. **(Unit-III, SQA-2)**

PART - B - (4 × 15 = 60 Marks)

Note : Answer any four questions.

9. Discuss about profit maximization V/s. wealth maximization. **(Unit-I, Q.No.10)**
10. Discuses the objectives of financial management. **(Unit-I, Q.No.7)**
11. A project cost ` 2500/- and is expected to generate cash inflows of ` 900, ` 8007, ` 700, ` 600 and ` 500 respectively for 5 years. The opportunity cost of capital may be assumed to be 10%. Calculate NPV for the given project.

Sol :

Years	Cashflows	Discounting factor @ 10%	Present Value
1	900	0.909	818
2	800	0.826	661
3	700	0.751	526
4	600	0.683	410
5	500	0.621	311
			2,726

NPV = Cash inflow – Cash out flow

= 2726 – 2,500

= 226

12. Calculate IRR if the project requires an initial outlay of ` 6000/- and expected generated equal cash inflows of ` 2,000/- p.a. The project to having a life of 5 years. Advise the management if the company's cost of capital is 15%.

Sol :

NPV at 15%

Years	Cashflow	Discounting factors @15%	PVCF
1	2,000	0.870	1,740
2	2,000	0.756	1512
3	2,000	0.658	1316
4	2,000	0.572	1,144
5	2,000	0.497	994
			6,706
	(–) Cashoutflow		6,000
		NPV	706

NPV at 25%

Years	Cash flow	Discounting factors @25%	PVCF
1	2,000	0.8	1,600
2	2,000	0.64	1,280
3	2,000	0.512	1,024
4	2,000	0.410	820
5	2,000	0.328	656
			5,380
	(–) Cashoutflow		6,000
		NPV	(620)

$$IRR = 15 + \frac{706}{706-(-620)} \times 10$$

$$= 15 + \frac{706}{1326} \times 10$$

$$= 15 + 5.32$$

$$= 20.32\%$$

13. Write about the various source of long term finance. **(Unit-III, Q.No.1)**

14. Explain about the dividend policy decision, types of dividend and determinants of dividend policy. **(Unit-III, Q.No.30,31,32)**

15. What is working capital management? Explain about determines of working capital. **(Unit-IV, Q.No.1,9)**

16. Write about Cash management technique (Lock box, Concentration banking) **(Unit-IV, Q.No.23)**

17. What is ABC analysis? Explain how it is useful in effective control of inventory. **(Unit-V, Q.No.22)**

18. From the following particulars, find out the EOQ.
    (i) Annual demand - 12,000 units.
    (ii) Ordering cost ` 90 per order.
    (iii) Inventory carrying cost per annum - ` 15 per unit.

Sol :

Given that,

Annual Demand (A) = 12,000

Ordering Cost (O) = `90

Carrying Cost (C) = `15

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$EOQ = \sqrt{\frac{2 \times 12,000 \times 90}{15}}$$

$$= \sqrt{1,44,000}$$

= 379.47.

FACULTY OF MANAGEMENT

BBA III-Semester(CBCS) Examination

March - 2022

FINANCIAL MANAGEMENT

Time : 3 Hours] **[Max. Marks : 80**

Note : Answer any five questions.

PART - A - (5 × 4 = 20 Marks)

ANSWERS

1. What are the Objectives of Financial Management? **(Unit-I, Q.No.7)**
2. What is Dividend Decision? **(Unit-I, Q.No.16, 3rd point)**
3. What is Safety Stock? **(Unit-V, SQA-10)**
4. Explain the features of Preference Shares. **(Unit-III, Q.No.5)**
5. What is Capital Structure? **(Unit-III, SQA-6)**
6. What is Net Present Value? **(Unit-II, Q.No.13)**
7. What is Net Working Capital?

Ans :

Net Working Capital (NWC) is the difference between a company's current assets and current liabilities on its balance sheet. It is a measure of a company's liquidity and its ability to meet short-term obligations, as well as fund operations of the business. The ideal position is to have more current assets than current liabilities and thus have a positive net working capital balance.

8. What are long term Debentures?

Ans :

A debenture is a type of long-term business debt not secured by any collateral. It is a funding option for companies with solid finances that want to avoid issuing shares and diluting their equity. Debentures can also be useful for companies that don't want to tie up assets or who lack collateral for a traditional loan.

PART - B - (5 × 12 = 60 Marks)

Note : Answer any five questions.

9. Define Financial Management. Explain the role of Finance Manager in modem organizations. **(Unit-I, Q.No.1)**

Ans :

The functions of Financial Manager are discussed below:

1. Estimating the Amount of Capital Required

This is the foremost function of the financial manager. Business firms require capital for:

(i) Purchase of fixed assets,

(ii) Meeting working capital requirements, and

(iii) Modernization and expansion of business.

The financial manager makes estimates of funds required for both short-term and long-term.

2. Determining Capital Structure

Once the requirement of capital funds has been determined, a decision regarding the kind and proportion of various sources of funds has to be taken. For this, financial manager has to determine the proper mix of equity and debt and short-term and long-term debt ratio. This is done to achieve minimum cost of capital and maximize shareholders wealth.

3. Choice of Sources of Funds

Before the actual procurement of funds, the finance manager has to decide the sources from which the funds are to be raised. The management can raise finance from various sources like equity shareholders, preference shareholders, debenture- holders, banks and other financial institutions, public deposits, etc.

4. Procurement of Funds

The financial manager takes steps to procure the funds required for the business. It might require negotiation with creditors and financial institutions, issue of prospectus, etc. The procurement of funds is dependent not only upon cost of raising funds but also on other factors like general market conditions, choice of investors, government policy, etc.

10. Why Wealth Maximization is considered superior to Profit Maximization? Explain. **(Unit-I, Q.No.7)**

11. Briefly explain various techniques of Capital Budgeting. **(Unit-II, Q.No.13,14)**

12. An Investment required an initial outlay of ` 2,00,000 at present. Cash Flows from the investment are expected to occur from the end of 2nd year at ` 60,000 per annum. These will continue to occur till 8 years of the project. If the required rate of return is 19% on this investment, can the company invest in the project or not?

Sol :

Calculation of Net Present Value (NPV)

Year	CashOut Flows (`)	P.V. Factor @19% $\left[\frac{1}{1+0.19}\right]^n$	Present Value (`)
1	0	0	0
2	60,000	0.7062	42,372
3	60,000	0.5934	35,604
4	60,000	0.4987	29,922
5	60,000	0.4190	25,140
6	60,000	0.3521	21,126
7	60,000	0.2959	17,754
8	60.000	0.2487	14,922
Total Present Value of Cash Out Flows			1,86,840
Less: Initial Investment			2,00,000
Net Present Value (NPV)			– 13,160

Comment

Since the Net Present Value (NPV) is negative, the company should not invest in the project.

13. Describe the features and advantages of Bonds and Debentures. **(Unit-III, Q.No.9,10)**

Ans :

Bonds are a popular form of investment because they offer regular income, capital preservation, and diversification benefits. It is a loan agreement between a borrower and a lender. When an entity or an individual buys a bond, they lend money to the issuer for a specific period.

Features

Bonds come with several features that distinguish them from other forms of investment.

1. Interest Rate

The interest rate is the coupon the bond issuer pays the bondholder. Typically, it is a fixed percentage of the face value of the bond and is paid out periodically over the bond's life.

2. Maturity date

The maturity date refers to the redemption date, and the bond issuer must repay the bond's principal amount to the bondholder. It is the date on which the bond "matures."

3. Face value

The face value is the amount the bond issuer will pay the bondholder at maturity. It is also known as the par value of the bond.

Advantages

1. Steady income

Bonds typically provide a fixed income source through periodic interest payments. This feature makes bonds an attractive option for investors seeking regular income.

2. Diversification

Bonds offer an opportunity to diversify an investor's portfolio. They tend to have a low correlation with other asset classes, such as equities and can help reduce overall portfolio risk.

3. Lower risk

They are less risky than equities since they have a higher priority of payment if the issuer defaults. ondholders are also typically paid back before equity holders are in liquidation.

14. What are dividend decisions? What are the determinants of Dividend policy? **(Unit-III, Q.No.30,32)**

15. What are the Components of Working Capital? Discuss. **(Unit-IV, Q.No.3)**

16. Explain different techniques of Cash Management. **(Unit-IV, Q.No.23)**

17. What are the techniques of effective inventory management? **(Unit-V, Q.No.18)**

18. Explain the determinants of Credit policy of an Organization. **(Unit-V, Q.No.8)**

FACULTY OF MANAGEMENT

BBA III - Semester (CBCS) Examination, December 2022 /January 2023

FINANCIAL MANAGEMENT

Time : 3 Hours] **[Max. Marks : 80**

Note : Answer any five questions.

PART - A - (5 × 4 = 20 Marks)

ANSWERS

1. Define Financial Management and discuss its scope. **(Unit - I, Q.No.1,4)**
2. Write a brief note on current assets management decision. **(Unit - I, Q.No. 16 (4th point)**
3. Discuss methods of Discounted Cash Flow. **(Unit - II, Q.No.4)**
4. Differentiate between compounding and discounting. **(Unit - II, Q.No.5)**
5. Briefly explain the component costs of capital. **(Unit - III, Q.No.21)**
6. Explain the features of Preference shares. **(Unit - III, Q.No.5)**
7. Differentiate between Gross Vs net working capital. **(Unit - IV, Q.No.8)**
8. Write briefly about Minimum Level and Maximum Level of inventory. **(Unit - V, Q.No.18)**

PART - B - (5 × 12 = 60 Marks)

Note : Answer all the questions.

9. (a) Explain the Goals of Finance Function. **(Unit - I, Q.No.7)**

(OR)

(b) Discuss the organization for finance function. **(Unit - I, Q.No.18)**

10. (a) Explain the Significance of Time Value of Money in Business Decision's. **(Unit - II, Q.No.1)**

(OR)

(b) A firm whose cost of capital is 12% is considering two mutually exclusive projects A and B. The details of which are

	Investment	Inflows					
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Project A	1,00,000	10,000	20,000	30,000	40,000	50,000	60,000
Project B	1,00,000	60,000	50,000	40,000	30,000	20,000	10,000

Compute the NPV and IRR and suggest which project is acceptable and why

Sol :

Calculation of NPV for project A

Years	Cashinflow	Discounting factor @ 12%	PVCF
1	10,000	0.892	8920
2	20,000	0.797	15,940
3	30,000	0.712	21,360
4	40,000	0.635	25,400
5	50,000	0.567	28,350
6	60,000	0.507	30,420
			1,30,390
		(–) cash out flow	1,00,000
		NPV	30,390

Let us try at NPV @ 24%

Years	Cashinflow	Discounting factor @ 24%	PVCF
1	10,000	0.806	8060
2	20,000	0.650	13000
3	30,000	0.524	15,720
4	40,000	0.423	16,920
5	50,000	0.341	17,050
6	60,000	0.275	16,500
			87,250
		(–) cash out flow	1,00,000
			(12,750)

$$\text{IRR} = \text{Lower Rate} + \frac{\text{NPV at Lower Rate}}{\text{NPV at Lower rate - NPV at Highes rate}} \times \text{Difference in rates}$$

$$12 + \frac{30,390}{30,390 - (-12,750)} \times 12$$

$$12 + \frac{30,390}{43,140} \times 12$$

$$12 + 0.704 \times 12$$

$$12 + 8.453 = 20,453$$

Calculation of NPV for project B.

Years	Cashinflow	Discounting factor @ 12%	PVCF
1	60,000	0.892	53,520
2	50,000	0.797	39,850
3	40,000	0.712	28,480
4	30,000	0.635	19,050
5	20,000	0.567	11,340
6	10,000	0.507	5070
			1,57,310
		(-) cashout flow	1,00,000
			57,310

Let us try at NPV @ 24%

Years	Cashinflow	Discounting factor @ 24%	PVCF
1	60,000	0.806	48,360
2	50,000	0.650	32,500
3	40,000	0.524	20,960
4	30,000	0.423	12,690
5	20,000	0.341	6820
6	10,000	0.275	2750
			1,24,080
		(-) cash out flow	1,00,000
			24080

Let us try at NPV @ 38%

Years	Cashinflow	Discounting factor @ 38%	PVCF
1	60,000	0.725	43,500
2	50,000	0.525	26,250
3	40,000	0.380	15,200
4	30,000	0.276	8280
5	20,000	0.199	3980
6	10,000	0.145	1450
			98660
		(-) cash out flow	1,00,000
		NPV	(1340)

$$IRR = \text{Lower Rate} + \frac{\text{NPV at lower rate}}{\text{NPV at lower rate- NPV at higher rate}} \times \text{difference in the rates}$$

$$12 + \frac{57310}{57310-(-1340)} \times 26$$

$$12 + \frac{57310}{58,650} \times 26$$

$$12 + 0.977 \times 26$$

$$12 + 25.402$$

$$37.402$$

11. (a) Discuss in detail about Various sources of long-term Finance. **(Unit - III, Q.No. 2,4,8,13)**

(OR)

(b) Calculate WACC using book value weight and market value weight, from the following information :

	Cost of capital %	Book value	Market value
Debt	8	5,00,000	5,00,000
Preference	12	10,00,000	11,00,000
Equity	16	15,00,000	25,00,000
Retained earnings		10,00,000	10,00,000
		40,00,000	51,00,000

You are required to calculate the weighted average cost of capital assuming

Sol :

Calculation of WACC by using book value method

Source of finance	**Amount**	**Weight**	**Cost of capital**	**WACC**
Debt	5,00,000	0.125	8	1
Preference	10,00,000	0.25	12	3
Equity	15,00,000	0.375	16	6
Retained earnings	10,00,000	0.25	-	
	40,00,000			10

Calculation of weights

$$\frac{5,00,000}{40,00,000} = 0.125$$

$$\frac{10,00,000}{40,00,000} = 0.25$$

$\frac{15,00,000}{40,00,000} = 0.375$

$\frac{10,00,000}{40,00,000} = 0.25$

Calculation of WACC (Market value method)

Source of finance	Amount	Weight	Cost of capital	WACC
Debt	5,00,000	0.098	8	0.784
Preference	11,00,000	0.215	12	2.58
Equity	25,00,000	0.491	16	7.856
Retained earnings	10,00,000	0.196	-	
	51,00,000			11.22

Calculation of weights

$\frac{5,00,000}{51,00,000} = 0.098$

$\frac{11,00,000}{51,00,000} = 0.215$

$\frac{25,00,000}{51,00,000} = 0.491$

$\frac{10,00,000}{51,00,000} = 0.196$

Weighted average cost of capital = 11.22%

12. (a) Define working capital and discuss Factors determining working capital? **(Unit - IV, Q.No. 1, 9)**

(OR)

(b) From the following information prepare a cash budget for 3 Months beginning from 1st June, when the bank Balance was Rs. 1,00,000.

Month	Sales in Rs	Purchase	Wages	FactoryExp	Administration
April	80,000	41,000	5,600	3,900	10,000
May	76,500	40,500	5,400	4,200	14,000
June	78,500	38,500	5,400	5,100	15,000
July	90,000	37,500	4,800	5,100	17,000
August	95,000	35,000	4,700	6,000	13,000

There is 2 months credit period allowed to customers and received from Suppliers. Wages, Factory Expenses and Administration Expenses are paid in the following month.

Sol :

Cash Budget

For 3 months to 31 st August 2005

	June Rs.	July Rs.	August Rs.
Receipts :			
Opening Balance	1,00,000	1,11,400	1,21,950
Sundry debtors	80,000	76,500	78,500
Total (A)	1,80,000	1,87,900	2,00,450
Payments :			
Sundry creditors	41,000	40,500	38,500
Wages	5,400	5,400	4,800
Factory expenses	4,200	5,100	5,100
Adm. & selling expenses	14,000	15,000	17,000
Total (B)	68,600	66000	65,400
Closing balance	1,11,400	1,21,950	1,35,050

13. (a) Explain the different methods of Inventory Management. **(Unit - V, Q.No. 18,19,20,22)**

(OR)

(b) From the following information, calculate Minimum Stock level, Maximum Stock level and re-ordering level.

Maximum Consumption	200 units per day	Re-order Period	10-15 days
Minimum Consumption	150 Units per day	Re-Order Quantity	1,600 Units
Normal Consumption	160 Units per day	Normal Re-order Period	12 days

Sol :

(i) Re–ordering level = Maximum Consumption × Maximum Re-order Period

200 × 15 = 300 units

(ii) Minimum Stock level = Re-ordering level – (Normal Consumption × Normal Re-ordering Period)

= 3,000–(160×12) = 3000 – 1920 = 1,080 units.

(iii) Maximum stock level = Re-ordering Level + Re-order Quantity – (Minimum Consumption × Minimum Re-order Period)

= 3,000 + 1,600 – (150 × 10)

= 3,000 + 1,600 – 1,500

= 4600 – 1500 = 3100 units

FACULTY OF MANAGEMENT

BBA III - Semester(CBCS) (Backlog) Examination

June / July 2023

FINANCIAL MANAGEMENT

Time : 3 Hours] **[Max. Marks : 80**

Note : Answer any five questions.

PART - A - (5 × 4 = 20 Marks)

ANSWERS

1. What are the objectives of Financial Management? **(Unit-I, Q.No.7)**
2. What is meant by Finance Decision? **(Unit-I, Q.No.16 (2nd Point)**
3. Explain the concept of Time value of Money **(Unit-II, SQA-1)**
4. What is Net Present Value? **(Unit-II, Q.No.13)**
5. Explain the features of Equity Shares **(Unit-III, Q.No.2)**
6. What is Dividend pay-out ratio?

Ans :

A dividend refers to payments that a company makes out to its shareholders as a reward for investing in the company's equity. The amount that is returned by the company to its shareholders as opposed to the amount that is kept for reinvestment is given by its dividend payout ratio.

Dividend payout ratio defines the relationship between the dividends paid by a company and its net earnings across a specific period. The ratio is represented in terms of a percentage.

7. Write a note on Lock box system. **(Unit-IV, SQA-11)**
8. What is meant by Economic Order Quantity? **(Unit-V, SQA-11)**

PART - B - (5 × 12 = 60 Marks)

Note : Answer all the questions.

9. (a) Define Financial Management. Should the goal of financial decision-making be profit-maximization or wealth-maximization? **(Unit-II, Q.No.1,7,10)**

(OR)

(b) What is meant by Dividend Decision? Explain the factors affecting Dividend Decisions?

Ans :

Dividend decision relates to how much of the company's net profit is to be distributed to the shareholders and how much of it should be retained in the business for meeting the investment requirements.

This decision should be taken keeping in mind the overall objective of maximising shareholders' wealth.

The main factors affecting dividend decisions are discussed below:

(i) Amount of Earnings: Dividends are paid out of current and past earnings. Thus, earnings are a major determinant of dividend decision.

(ii) Stability in Earnings: A company having higher and stable earnings can declare higher dividends than a company with lower and unstable earnings.

(iii) Stability of Dividends: Generally, companies try to stabilise dividends per share. A steady dividend is given each year. A change is only made if the company's earning potential has gone up and not just the earnings of the current year.

(iv) Growth Opportunities: Companies having good growth opportunities retain more money out of their earnings so as to finance the required investment. Therefore the dividend declared in growth companies is smaller than that in the non-growth companies.

(v) Cash Flow Position: Dividend involves an outflow of cash. Availability of enough case is necessary for payment or declaration of dividends.

(vi) Shareholders' Preference: While declaring dividends, the management must keep in mind the preferences of the shareholders. Some shareholders in general desire that at least a certain amount is paid as dividend. The companies should consider the preferences of such shareholders.

---

10. (a) A person is required to pay for equal annual payments of Rs.4,000 each in a deposit account that pays 10% interest per year. Find out the future value of annuity at the end of four years.

Sol :

We can use the following formula to compute the future value of an annuity:

$$FV = P \times \frac{(1+r)^n - 1}{r}$$

FV = Future Value of the annuity

p = Payment per period

r = Interest rate per period

n = Number of periods

In this scenario, the payment is `.4,000 every period, the interest rate is 10% (or 0.10) per period, and the number of periods is four.

When vve enter these values into the formula, we get:

$$FV = 4{,}000 \times \frac{(1+0.10)^4 - 1}{0.10}$$

First, compute the expression within the brackets :

$(1+0.10)^4 = 1.4641$

Adding this value to the formula:

$$FV = 4{,}000 \times \frac{1.4641 - 1}{0.10}$$

$$FV = 4{,}000 \times \frac{0.4641}{0.10}$$

$$FV = \frac{1{,}856.4}{0.10}$$

$$FV = 18{,}564$$

(OR)

(b) Explain briefly the following methods of capital Budgeting bringing out the advantages and disadvantages of each:

(i) Pay-back period method

Ans :

Meaning

Payback Period is the time where a project's net cash inflows are equal to the project's initial cash investment. This method is often used as the initial screen process and helps to determine the length of time required to recover the initial cash outlay (investment) in the project.

Definition

Payback period is defined by CIMA as, "The time required for the cash inflows from a capital investment project to equal the initial cash outflows."

Advantages

The main advantages of payback period are as follows:

- A longer payback period indicates capital is tied up.
- Focus on early payback can enhance liquidity
- Investment risk can be assessed through payback method
- Shorter term forecasts

Disadvantages

There are numbers of serious drawbacks to the payback Period Method :

- It ignores the timing of cash inflows within the payback period
- It ignores the cash flow produced after the end of the payback period and therefore the total return of the project.
- It ignores the time value of money
- It influence for excessive investment in short term projects.

(ii) Internal Rate of Return. **(Unit-II, Q.No.14)**

11. (a) Define Preference Shares. Explain the features and different types of preference shares. **(Unit-II, Q.No.4,5,6)**

(OR)

(b) A firm has the following capital structure and after-tax costs for the different sources of funds used:

Source of Funds	Amount (Rs.)	Proportion %	After-tax Cost %
Debt	15,00,000	25	5
Preference Shares	12,00,000	20	10
Equity Shares	18,00,000	30	12
Retained Earnings	15,00,000	25	11
Total	60,00,000	100	

You are required to compute the weighted average cost of capital.

Sol :

Computation of weighted average cost of capital (WACC)

Source of funds	Proportion (%) (W)	After tax cost (%) (X)	Weighted cost (%) (XW) %
Debt	25	5	1.25
Preference capital	20	10	2.00
Equity Capital	30	12	3.60
Retained Earnings	25	11	2.75
Weighted Average Cost of Capital			9.60

12. (a) Define the term working capital. What factors would you take into consideration in estimating the working capital needs of a concern? **(Unit-IV, Q.No.1,9)**

(OR)

(b) Explain and illustrate the utility and preparation of cash budget as a tool of cash management. **(Unit-IV, Q.No.19)**

13. (a) What is Receivables management? How is it useful for business concerns? **(Unit-V, Q.No.1,3)**

(OR)

(b) Calculate them Minimum Stock Level, Maximum Stock Level and Re-order Level from the following information.
Minimum consumption 100 kgs per day
Maximum consumption 150 kgs per day
Re-order period 10-15 days
Re-order quantity 1500 kgs
Normal Re-order period 12 days

Sol :

(i) Re-ordering Eevel = Maximum Consumption × Maximum re-order period
= 150 units × 15 days = 2,250 units

(ii) Minimum Stock Level = Re-ordering Level – (Normal consumption × Normal re-order period)
= 2,250 – (120 × 12) = 810 units

(iii) Maximum Stock Level = Re-ordering Level + Re-order Quantity
(Minimum Consumption × Minimum Re-Order Period)
= 2,250 + 1500 – (100 × 10) = 2,750 units

FACULTY OF MANAGEMENT

BBA III - Semester (CBCS) (Backlog) Examination

December - 2023

FINANCIAL MANAGEMENT

Time : 3 Hours] **[Max. Marks : 80**

PART - A - (5 × 4 = 20 Marks)

(Short Answer Type)

Note : Answer any five questions.

ANSWERS

1. What is the importance of Financial Management? **(Unit - I, Q.No. 5)**
2. What is meant by Dividend Decision? **(Unit - I, Q.No. 16)**
3. Define Future value **(Unit - II, SQA-3)**
4. Explain Internal Rate of Return **(Unit - II, Q.No. 14)**
5. Explain the features of Debentures **(Unit - III, Q.No. 9)**
6. What is Weight average cost of capital? **(Unit - III, Q.No. 28)**
7. Explain Gross working capital **(Unit - IV, Q.No. 7)**
8. What is meant by Safety Stock? **(Unit - V, Q.No. 19)**

PART - B - (5 × 12 = 60 Marks)

(Essay Answer Type)

Note : Answer all the questions.

9. (a) Define Business Finance. What are the responsibilities of the financial manager in a modern business organization? **(Unit - I, Q.No. 17)**

(OR)

(b) What is Financial 'Management? Explain the objectives and limitations of financial management. **(Unit - I, Q.No. 1, 7)**

10. (a) Examine the various techniques employed to adjust the time value of money. **(Unit - II, Q.No. 2, 3, 4)**

(OR)

(b) The following are the cash inflows and outflows of a certain project of ZENX Ltd.

Year	Outflow	Cash Inflows
0	1,50,000	
1		30,000
2		30,000
3		50,000
4		60,000
5		40,000

Calculate the Net Present Value at 10%.

Sol :

Calculation of NPV

Years	Cash inflow	Discounting factor @ 10%	PVCF
1	30,000	0.909	27,270
2.	30,000	0.826	24,780
3.	50,000	0.751	37,550
4.	60,000	0.683	40,980
5.	40,000	0.621	24,840
			1,55,420

NPV = Cash inflow – Cash out flow

1,55,420 – 1,50,000 = 55,420

11. (a) What do you understand by Capital Structure? What are the major determinants of Capital Structure?

(Unit - III, Q.No. 14, 17)

(OR)

(b) The following information is available in respect of a firm:

Capitalization Rate = 10%

Earnings per Share = Rs.50

Assumed rate of return on investments:

(i) 12% (ii) 8% (iii) 10%

Show the effect of dividend policy on market price of shares applying Walter's formula when dividend pay-out ratio is

(i) 0% (ii) 20% (iii) 40% (iv) 80% (v) 100%.

Sol :

Rate of Return

When 0%, EPS = 50

$$D = \frac{50 \times 10}{100} = 0$$

When 20%

$$\frac{50 \times 20}{100} = 10$$

When 40%

$$\frac{50 \times 40}{100} = 20$$

When 80%

$$\frac{50 \times 80}{100} = 40$$

When 100%

$$\frac{50 \times 100}{100} = 50$$

Walter model = $D + \frac{r}{k_e}(t - D)$

Rate of Return	**0%**	**20%**	**40%**	**80%**	**100%**
12%	$\frac{0+\frac{0.12}{0.10}(50-0)}{0.10}$ = 600	$\frac{10+\frac{0.12}{0.10}(50-10)}{0.10}$ = 580	$\frac{20+\frac{0.12}{0.10}(50-20)}{0.10}$ = 560	$\frac{40+\frac{0.12}{0.10}(50-40)}{0.10}$ = 520	$\frac{50+\frac{0.12}{0.10}(50-50)}{0.10}$ = 500
8%	$\frac{0+\frac{0.08}{0.10}(50-0)}{0.10}$ = 400	$\frac{10+\frac{0.08}{0.10}(50-10)}{0.10}$ = 420	$\frac{20+\frac{0.08}{0.10}(50-20)}{0.10}$ = 440	$\frac{40+\frac{0.08}{0.10}(50-40)}{0.10}$ = 480	$\frac{50+\frac{0.08}{0.10}(50-50)}{0.10}$ = 500
10%	$\frac{0+\frac{0.10}{0.10}(50-0)}{0.10}$ = 500	$\frac{10+\frac{0.10}{0.10}(50-10)}{0.10}$ = 500	$\frac{20+\frac{0.10}{0.10}(50-20)}{0.10}$ = 500	$\frac{40+\frac{0.10}{0.10}(50-40)}{0.10}$ = 500	$\frac{50+\frac{0.10}{0.10}(50-50)}{0.10}$ = 500

12. (a) Explain briefly the essentials of a sound working capital management. **(Unit - IV, Q.No. 9)**

(OR)

(b) What is a Lock box system? How does it help to reduce the cash Balances? **(Unit - IV, Q.No. 23)**

13. (a) What is ABC Analysis? How is it useful for business concerns? **(Unit - V, Q.No. 22)**

(OR)

(b) The annual demand for a product is 6,400 units. The unit cost is Rs. 6 and inventory carrying cost per unit annum is 25% of the average inventory cost. If the cost of procurement is Rs. 75, determine:

(i) Economic Order Quantity (EOQ)

(ii) Number of orders per annum

(iii) Time between two consecutive orders.

Sol :

$$EOQ = \sqrt{\frac{2 \times 6,400 \text{ units} \times \text{`}75}{\text{`}6 \times 25/100}} = 800 \text{ units}$$

No. of orders p.a. = 6,400 units/800 units = 8 orders

Time taken between two orders = 12 months/8 orders = 1.5 months

FACULTY OF MANAGEMENT

BBA III - Semester (CBCS) (Backlog) Examination

May / June - 2024

FINANCIAL MANAGEMENT

Time : 3 Hours] **[Max. Marks : 80**

PART - A - (5 × 4 = 20 Marks)
(Short Answer Type)

Note : Answer any five questions.

ANSWERS

1. Define finance and discuss its relationship with other disciplines. **(Unit-I, Q.No. 1, 3)**
2. Explain the Modern Approach of financial management. **(Unit-I, Q.No. 13)**
3. Differentiate between present value and future value. **(Unit-II, Q.No. 5)**
4. Discuss the determinants of capital structure. **(Unit-III, Q.No. 17)**
5. Explain the features of equity shares. **(Unit-III, Q.No. 2)**
6. Explain the different types of Capital Structures.

Ans :

Types of Capital Structure

1. Equity Capital

Equity capital is the money owned by the shareholders or owners. It consists of two different types

a) Retained earnings

Retained earnings are part of the profit that has been kept separately by the organization and which will help in strengthening the business.

b) Contributed Capital

Contributed capital is the amount of money which the company owners have invested at the time of opening the company or received from shareholders as a price for ownership of the company.

2. Debt Capital

Debt capital is referred to as the borrowed money that is utilized in business. There are different forms of debt capital.

i) Long Term Bonds

These types of bonds are considered the safest of the debts as they have an extended repayment period, and only interest needs to be repaid while the principal needs to be paid at maturity.

ii) Short Term Commercial Paper

This is a type of short term debt instrument that is used by companies to raise capital for a short period of time

7. Explain about concentration banking in cash management. **(Unit-IV, SQA - 10)**
8. Define inventory Management. **(Unit-V, SQA - 12)**

PART - B - (5 × 12 = 60 Marks)
(Essay Answer Type)

Note : Answer all the questions.

9. (a) Explain the Concept of Profit Maximization Vs Wealth Maximization. **(Unit-I, Q.No. 10)**

(OR)

(b) Discuss in detail the functions of financial management. **(Unit-I, Q.No. 5)**

10. (a) Explain the concept of Capital Budgeting with its features and application. **(Unit-II, Q.No. 6, 7)**

(OR)

(b) A firm whose cost of capital is 10% is considering two mutually exclusive projects X and Y. The details of which are

	Investment	Inflows				
		Year 1	Year 2	Year 3	Year 4	Year 5
Project X	70,000	10,000	20,000	60,000	45,000	40,000
Project Y	70,000	10,000	20,000	50,000	40,000	30,000

Compute the NPV and suggest which project is acceptable and why.

Sol :

Calculation of NPV for project X.

Years	Cash inflow	Discounting factor @ 10%	PVCF
1	10,000	0.909	9090
2	20,000	0.826	16,520
3	60,000	0.751	45,060
4	45,000	0.683	30,735
5	40,000	0.62	24,840
			1,26,245

NPV = 1,26,245 – 70,000 = 56,245

Calculation of NPV for project Y.

Years	Cash inflow	Discounting factor @ 10%	PVCF
1	10,000	0.909	9,090
2	20,000	0.826	16,520
3	50,000	0.751	37,550
4	40,000	0.683	27,320
5	30,000	0.621	18,630
			1,09,110

NPV = 1,09,110-70,000 = 39,100
Project y is acceptable since NPV have low value.

11. (a) Define Dividend and discuss determinants of dividend policy. **(Unit-III, Q.No. 30, 32)**

(OR)

(b) XYZ ltd is having following capital Structure

Source	Amount
2,00,000 Equity share	40,00,000
Reserves	20,00,000
15% Debenture	30,00,000
14% Long term Loan	10,00,000
	1,00,00,000

During the last 5years the company has paid an equity dividend of 20% and in future it is expected to grow @5%.

Compute the WACC based on existing capital Structure

Sol :

Calculation of WACC by using book value method

Source of finance	Amount	Weight	Cost of capital	WACC
Debt	5,00,000	0.125	8	1
Preference	10,00,000	0.25	12	3
Equity	15,00,000	0.375	16	6
Retained earnings	10,00,000	0.25	-	
	40,00,000			10

Calculation of weights

$$\frac{5,00,000}{40,00,000} = 0.125$$

$$\frac{10,00,000}{40,00,000} = 0.25$$

$$\frac{15,00,000}{40,00,000} = 0.375$$

$$\frac{10,00,000}{40,00,000} = 0.25$$

Calculation of WACC (Market value method)

Source of finance	Amount	Weight	Cost of capital	WACC
Debt	5,00,000	0.098	8	0.784
Preference	11,00,000	0.215	12	2.58
Equity	25,00,000	0.491	16	7.856
Retained earnings	10,00,000	0.196	-	
	51,00,000			11.22

Calculation of weights

$$\frac{5,00,000}{51,00,000} = 0.098$$

$$\frac{11,00,000}{51,00,000} = 0.215$$

$$\frac{25,00,000}{51,00,000} = 0.491$$

$$\frac{10,00,000}{51,00,000} = 0.196$$

Weighted average cost of capital = 11.22%12.

12. (a) Explain cash management and motives for holding cash **(Unit-IV, Q.No. 15)**

(OR)

(b) From the following information, prepare a statement showing working capital requirements.

Budgeted sales (Rs. 10 per unit): Rs.2,50,000 per annum

Elements of the cost	Cost per unit
Raw Materials	3
Direct labour	4
Overheads	2
Total cost	9
Profit	1
Sales	10

It is estimated that:

A) Raw materials are in stock for three weeks and finished goods for two weeks.

B) Suppliers will give five-week credit

C) Customers will require eight-week credit

D) Factory processing will take three weeks

Sol :

Estimation of Working Capital

	Particulars	Amount	Amount
(A)	**Current Assets**		
	Raw materials (2,50,000 × 3 × 3/52)	43,269	
	Work in progress (2,50,000 × 9 × 3/52)	1,29,808	
	Finished goods (2,50,000 × 9 × 2/25)	86,538	
	Debtors (2,50,000 × 9 × 8/52)	3,46,154	
	Total Current Assets (A)		6,05,769
(B)	**Current Liabilities**		
	Suppliers (2,50,000 × 3 × 5/5)	72,115	72,115
	Total Current Liabilities (B)		72,115
(C)	**Working Capital (A – B)**		5,33,654

13. (a) What are receivables management? Explain the cost and benefits of Receivables management. **(Unit-V, Q.No. 1, 5)**

(OR)

(b) From the following information, find cut economic order quantity:

Annual Usage: 2, 00,000 Units,

Cost of placing and receiving one order: Rs. 80

Annual carrying cost: 10 % of inventory value

Sol :

$$ECQ = \sqrt{\frac{2AS}{1}}$$

Where, A = Annual usage is Rs. 2,00,000

S = Cost of placing an order is Rs. 80

I = Annual carrying cost is 10% of material value

$$EOQ = \sqrt{\frac{2 \times 20.000 \times 80}{10\%}}$$

$$= \sqrt{\frac{2 \times 20.000 \times 80 \times 100}{10}}$$

$$= \sqrt{3,20,00,000}$$

= 14,833 units