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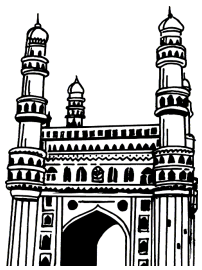

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E-COMMERCE

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E-Commerce: Meaning- Advantages & Limitations - E-Business: Traditional & Contemporary Model, Impact of E-Commerce on Business Models - Classification of E-Commerce: B2B- B2C - C2B - C2C - B2E - Applications of Ecommerce: E-Commerce Organization Applications - E-Marketing - EAdvertising - E-Banking - Mobile Commerce - E-Trading - E-Learning - E-Shopping.

1.1 E-COMMERCE

1.1.1 Meaning

Q1. Define E-Commerce? Explain the categories of E-Commerce.

Ans : **(Oct.-19)**

Electronic Commerce:

- Electronic commerce, commonly known as E-commerce is trading in products or services using computer networks, such as the Internet.
- Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems.
- Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail.

Definition of E-commerce:

Sharing business information, maintaining business relationships and conducting business transactions using computers connected to telecommunication network is called E-Commerce.

E-Commerce Categories:

1. Electronic Markets

Electronic Markets Present a range of offerings available in a market segment so that the purchaser can compare the prices of the offerings and make a purchase decision.

Example: Airline Booking System

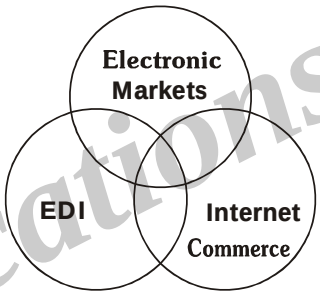

Fig. The three categories of e - commerce

2. Electronic Data Interchange (EDI)

- It provides a standardized system
- Coding trade transactions
- Communicated from one computer to another without the need for printed orders and invoices & delays & errors in paper handling
- It is used by organizations that a make a large no. of regular transactions

Example: EDI is used in the large market chains for transactions with their suppliers

3. Internet Commerce

- It is use to advertise & make sales of wide range of goods & services.
- This application is for both business to business & business to consumer transactions.

Example: The purchase of goods that are then delivered by post or the booking of tickets that can be picked up by the clients when they arrive at the event.

Q2. State the features of E-Commerce.

Ans :

1. Ubiquity

Internet/Web technology is the marketplace is extended beyond traditional available everywhere at work, at home, and boundaries and is removed from a temporal and elsewhere via mobile devices, anytime. geographic location. Marketspace is created; shopping can take place anywhere. Customer convenience is enhanced, and shopping costs are reduced.

2. Global reach

The technology reaches Commerce is enabled across cultural and across national boundaries, around the earth. national boundaries seamlessly and without modification. Marketspace includes potentially billions of consumers and millions of businesses worldwide.

3. Universal standards

There is one set of technical media standards technology standards, namely Internet across the globe.

4. Interactivity

The technology works Consumers are engaged in a dialog that through interaction with the user. dynamically adjusts the experience to the individual, and makes the consumer a co-participant in the process of delivering goods to the market.

5. Information density

The technology Information processing, storage, and reduces information costs and raises quality. communication costs drop dramatically, while currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and accurate.

6. Personalization/Customization

The Personalization of marketing messages and technology allows personalized messages to customization of products and services are be delivered to individuals as well as groups. based on individual characteristics.

Q3. What are the key components of E-commerce ?

OR

Elucidate the Key Components of E-commerce

Ans :

The components of E-commerce vary based on the business and role of E-commerce in it. Generally, there are three basic components of E-commerce. They are as follows.

1. Systematic Approach Requirement

To conduct business, a systematic approach is needed. Just like traditional commerce, e-commerce should also deal with all aspects of business. Some of these aspects are research and planning, operation and selling, customer service marketing, budgeting and human resource management. Among all, some of them are performed using internet and other electronic means.

2. Business Type

Even though e-commerce is treated as a special type of business but still it comes under the category of a business. Just like any other traditional business, e-commerce businesses have been classified into different kinds. They are,

- Business- to-business e-commerce
- Business-to-consumer e-commerce
- Consumers-to-consumer e-commerce
- Consumer-to-business e-commerce
- Govt, to Business
- Govt, to consumer
- Non-business e-commerce
- Intra-organizational e-commerce.

The classification of e-commerce can also be done on the basis of products or services provided by businesses. There are certain E-commerce businesses that sell concrete products like clothes, electronic devices etc. Whereas, the other e-commerce business sells abstract products like reservations, e-leaming, etc.

3. Technology

A company in e-commerce can achieve its goals efficiently and effectively by making use of technologies for conducting business. Hence, a company must always prefer to use latest technologies through which they can satisfy the customer needs in the best possible ways. This item will lead to the growth of the company.

1.1.2 Advantages & Limitations of E-Commerce

Q4. State the Advantages & Limitations of E-Commerce.

Ans : **(Aug.-21, Oct-20, Oct.-19)**

Advantages of E-commerce

E-Commerce advantages can be broadly classified in three major categories.

1. Advantages to Organizations
2. Advantages to Consumers
3. Advantages to Society

1. Advantages to Organizations

- Using e-commerce, organizations can expand their market to national and international markets with minimum capital investment. An organization can easily locate more customers, best suppliers, and suitable business partners across the globe.
- E-commerce helps organizations to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.
- E-commerce improves the brand image of the company.
- E-commerce helps organization to provide better customer services.
- E-commerce helps to simplify the business processes and makes them faster and efficient.
- E-commerce reduces the paper work.
- E-commerce increases the productivity of organizations. It supports "pull" type supply management. In "pull" type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing way.

2. Advantages to Customers

- It provides 24x7 support. Customers can enquire about a product or service and place orders anytime, anywhere from any location.
- E-commerce application provides users with more options and quicker delivery of products.
- E-commerce application provides users with more options to compare and select the cheaper and better options.
- A customer can put review comments about a product and can see what others are buying, or see the review comments of other customers before making a final purchase.
- E-commerce provides options of virtual auctions.
- It provides readily available information. A customer can see the relevant detailed information within seconds, rather than waiting for days or weeks.
- E-Commerce increases the competition among organizations and as a result, organizations provides substantial discounts to customers.

3. Advantages to Society

- Customers need not travel to shop a product, thus less traffic on road and low air pollution.
- E-commerce helps in reducing the cost of products, so less affluent people can also afford the products.
- E-commerce has enabled rural areas to access services and products, which are otherwise not available to them.
- E-commerce helps the government to deliver public services such as healthcare, education, social services at a reduced cost and in an improved manner.

Limitations of E-Commerce

1. Security

The biggest drawback of e-commerce is the issue of security. People fear to provide personal and financial information, even though several improvements have been made in relation to data encryption. Certain websites do not have capabilities to conduct authentic transactions. Fear of providing credit card information and risk of identity limit the growth of e-commerce.

2. Lack of privacy

Many websites do not have high encryption for secure online transaction or to protect online identity. Some websites illegally collect statistics on consumers without their permission. Lack of privacy discourages people to use internet for conducting commercial transactions,

3. Tax issue

Sales tax is another bigger issue when the buyer and seller are situated in different locations. Computation of sales tax poses problems when the buyer and seller are in different states. Another factor is that physical stores will lose business if web purchases are free from tax.

4. Fear

People fear to operate in a paperless and faceless electronic world. Some of the business organizations do not have physical existence, People do not know with whom they are conducting commercial transactions. This aspect makes people to opt physical stores for purchases.

5. Product suitability

People have to rely on electronic images to purchase products. Sometimes, when the products are delivered, the product may not match with electronic images. Finally, it may not suit the needs of the buyers. The lack of 'touch and feel' prevent people from online shopping.

6. Cultural obstacles

E-commerce attracts customers from all over the world. Habits and culture of the people differ from nation to nation. They also pose linguistic problems. Thus, differences in culture create obstacles to both the business and the consumers.

7. High Labour cost

Highly talented and technically qualified workforce are required to develop and manage the websites of the organization. Since internet provides a lot of job opportunities, business organizations have to incur a lot of expenses to retain a talented pool of employees,

8. Legal issues

The cyber laws that govern the e-commerce transactions are not very clear and vary from country to country. These legal issues prevent people from entering into electronic contracts.

9. Technical limitations

Some protocol is not standardized around the world. Certain software used by vendor to show electronic images may not be a common one. It may not be possible to browse through a particular page due to lack of standardized software. Insufficient telecommunication bandwidth may also pose technical problems.

9. Huge technological cost

It is difficult to merge electronic business with traditional business. Technological infra-structure may be expensive and huge cost has to be incurred to keep pace with ever changing technology. It is necessary to allocate more funds for technological advancement to remain competitive in the electronic world.

1.2 E-BUSINESS

Q5. What do you understand by E - Business ?

Ans :

Commerce, the exchange of valuable goods or sendees, has been conducted for thousands of years. Traditionally, commerce involved bringing

traders, buyers, and sellers together in a physical marketplace to exchange information, products, sendees, and payments. Today, many business transactions occur across a telecommunications network where buyers, sellers, and others involved in the business transaction (such as the employees who process transactions) rarely see or know each other and may be anywhere in the world. This process of buying and selling of products and services across a telecommunications network is often called electronic commerce or e-commerce.

Many people use the term "e-commerce" in a broader sense: to encompass not only the buying and selling of goods, but also the delivery of information, the providing of customer service before and after a sale, the collaboration with business partners, and the effort to enhance productivity within organizations. Others refer to this broader spectrum of business activities that can be conducted over the Internet as e-business. Most people today use the terms "e-commerce" (in its broadest sense) and "e-business" interchangeably. In this book, we use the term "e-business" to indicate the widest spectrum of business activities that use Internet and Web technologies.

The initial development of e-business transactions began more than thirty years ago when hanks began transferring money to each other by using electronic funds transfer (EFT).

When large companies began sharing transaction information with their suppliers and customers via electronic data interchange (EDI).

Using EDI, companies electronically exchange information that used to be traditionally submitted on paper forms, such as invoices, purchase orders, quotes, and bills of lading. This exchange occurs both with suppliers and customers (often called trading partners).

These transmissions generally occur over private telecommunications networks called value-added networks, or VANs Because of the expense of setting up and maintaining these private networks and the costs associated with creating a standard interface between companies, implementing EDI has usually been beyond the financial reach of small and medium-sized companies.

Today, companies of all sizes use a less expensive network alternative to VANs for the exchange of information, products, sendees, and payments - the Internet. Global access to the Internet and the Web has changed the way people and businesses around the world communicate.

Q6. What are the advantages and dis- advantages of E-Business ?

Ans :

A) Advantages

I) Advantages for Sellers

i) Increased sales opportunities

ii) Decreased costs

iii) 24 hours a day, 7 days a week sales

iv) Access to narrow market segments

v) Access to global markets

vi) Increased speed and accuracy of information delivery

vii) Data collection and customer preference tracking.

II) Advantages for Buyers

i) Wider product availability

ii) Customized and personalized information and buying options

iii) 24 hours a day, 7 days a week shopping

iv) Easy comparison shopping

v) Access to global markets

vi) Quick delivery of digital products and information

vii) Access to rich media describing products and services.

B) Dis - Advantages

I) Disadvantages for Sellers

i) Growing competition from other e-business.

ii) Rapidly changing technologies

iii) Greater telecommunications capacity or bandwidth demands

iv) Difficulty of integrating existing business systems with e-business transactions

v) Problems inherent in maintaining e-business systems

vi) Global market issues: diverse languages, unknown political environments, and currency conversions.

II) Disadvantages for Buyers

i) Difficulty differentiating among so pay online sellers.

ii) Unpredictable transaction security and privacy.

iii) Dealing with unfamiliar, possibly, untrustworthy, sellers.

iv) Inability to touch and feel products before buying them.

v) Unfamiliar buying processes and concerns about vendor reliability.

vi) Issues with state sales tax charges and logistical difficulties of product returns.

1.2.1 Traditional & Contemporary Model

Q7. Explain briefly about Traditional & Contemporary Model of E-Business.

Ans :

(i) Business Efficiency

Most of the companies use e-business because it is capable of providing efficiency in production and distribution. There can be increase in efficiency throughout, from purchasing goods to servicing the customer.

(ii) Transaction Management

Using e-business, the customers and suppliers are brought together which will decrease the transaction cost of purchasing. This kind of business is also a solution for the problem of time and distance.

(iii) Reaching New Markets and Segments

As e-business is based on internet, it helps in exploring different markets across, the globe without any physical presence.

(iv) A Better Customer Relationship

The data collected through internet help organizations in targeting right customers and providing them, their product and services.

To perform e-business, the following four distinct phases must be carried out.

(a) Implement a website that will help the respective organization in online buying and selling of products and services.

(b) Link multiple suppliers with enterprise by use of extranets and intranets. This will make the supply chain management processes online.

(c) The organization must find partners to deal with content, marketing and commerce.

(d) The convergence will then result in new product and services.

Q8. Explain the differences between Traditional commerce and E- commerce.

Ans : **(June-19)**

BASIS FOR COMPARISON	TRADITIONAL COMMERCE	E-COMMERCE
Meaning	Traditional commerce is a branch of business which focuses on the exchange of products and services, and includes all those activities which encourages exchange, in some way or the other.	e-Commerce means carryng out commercial transactions or exchange of information, electronically on the internet.
Processing of Transactions	Manual	Automatic
Accessibility	Limited Time	24×7×365
Physical inspection	Goods can be inspected physically before purchase.	Goods cannot be inspected physically before purchase.
Customer interaction	Face-to-face	Screen-to-face
Scope of business	Limited to particular area.	Worldwide reach
Information exchange	No uniform platform for exchange of information.	Provides a uniform platform for information exchange.
Resource focus	Supply side	Demand side
Business Relationship	Linear	End-to-end
Marketing	One way marketing	One-to-one marketing
Payment	Cash, cheque, credit card, etc.	Credit card, fund transfer etc.
Delivery of goods	Instantly	Takes time

Q9. Compare and contrast E-Commerce and E-Business.

Ans :

The differences between e-business and e-commerce are,

E - Business	E - commerce
1. It focuses on customer services, collaboration of partners, distributors and suppliers, with buying selling and information exchange as its primary focus.	1. It focuses on buying and selling products, services on internet.
2. More generic than e-commerce	2. Less generic than e-business
3. It supports the business processes along the entire value chain.	3. The support is only for buying and selling products, information exchange.
4. It enables companies to efficiently and flexibly link their back -office (internal) and front - office (external) processes.	4. Such a linking does not exist in e-commerce
5. It places the key processes like CRM, SCM and ERP on web.	5. CRM, SCM and ERP are not included in the selling process of e-commerce.
6. The scope of e - business is wider than	6. Its scope is limited e-commerce.

1.3 Impact of E-Commerce on Business Models

Q10. Explain briefly about ICDT Business Strategy Model.

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

Information Communication, Transaction and Distribution (ICDT) model is the fundamental model developed by Albert-Angehm for specifying the strategy of business. This model is based on the following virtual spaces.

1. Virtual Information Space
2. Virtual Distribution Space
3. Virtual Transcation Space
4. Virtual Communication Space

1. Virtual Information Space

This space of an organization contains information regarding the company, their products and services. In order to enter into virtual market place, it is necessary to initially enter this space. The major concern to be considered here are,

(i) Only accurate and up-to-date information must be displayed.

(ii) Only authorized users should be given privilege of accessing the information.

(iii) Customers must find the required site without any difficulty.

(iv) Customers must not be allowed to have longer waiting time for accessing the website.

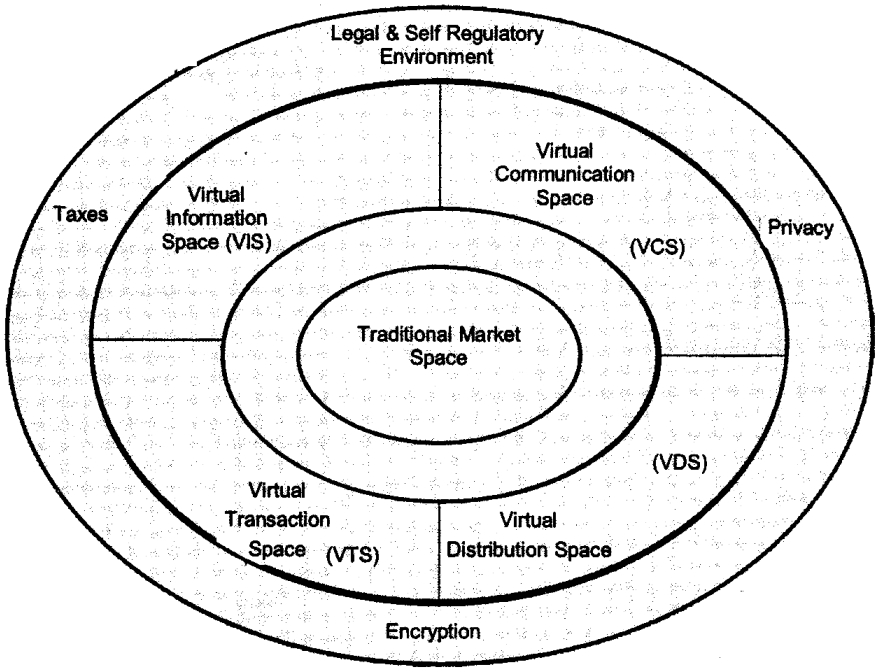

Fig. The ICDT Business Mode

2. Virtual Distribution Space

This space of an organization is responsible for distributing the purchased or requested product to the desired customer. This electronic delivery is possible if the product to be delivered is in digital form or the services provided must be carried out digitally. The major concerns for virtual distribution space are,

(i) The delivery of product or services must be only to the requested, legitimate and approved customers.

(ii) The delivery process of product and service must be reliable.

3. Virtual Transaction Space

This space of an organization is responsible for carrying out business activities (transactions) such as purchase order. The major concerns to be considered before entering into this space are,

(i) Data security must be high

(ii) Data accuracy and integrity must be maintained

(iii) Vendors must be reliable and trust worthy.

(iv) Private information about organization must be kept secure.

4. Virtual Communication Space

This space of an organization concentrates on establishing relationship, exchanging information via chat rooms, forums and negotiating. If this space consists of negotiating agents or members who pay (prior to entering space) then this would really have a drastic impact on growth of e-commerce.

Q11. Explain 3 Pillars of E-Commerce?

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

The three electronic pillars of E-commerce which support open market processes :

1) Electronic information.
2) Electronic relationship.
3) Electronic transactions.

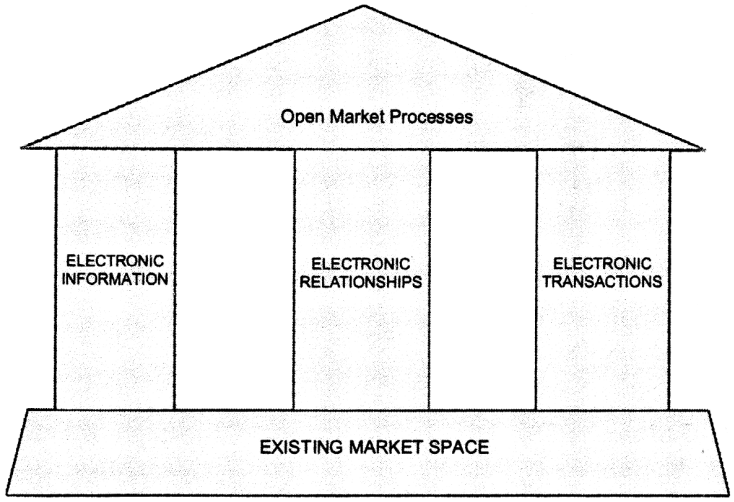

Fig. Three Pillars of E - Commerce Model by Peter Fingar

1. **Electronic information** is similar to virtual information space . The WWW is viewed as a "global responsibility ", of documents and multimedia data, constructing an electronic information pillar is easy most word processing software packages will easily convert the documents into a web-readable format ,in the website , the web page does not freeze or links do not head the visitor to a dead end .
2. **Electronic relationships** is the central pillar and this is similar to virtual communication placing information on products and services offer on a web site does not mean that potential customer or guests will visit that web site again , once they are visited .
3. **The electronic transactions** pillar is similar to virtual transactions space and also encompasses virtual distribution space. Many business have built an electronic in pillar and some have but or are building an electronic community pillar and fewer have constructed electronic transactions pillars.

1.4 CLASSIFICATION OF E-COMMERCE

Q12. Explain the Classification of E-Commerce.

Ans :

The general assumption about E-Commerce is

It is an online commercial transaction between a supplier and a client. However, and although this idea is correct, it can be more specific and classify E-Commerce into several types, all with different

characteristics. Classification of E-Commerce is done by the nature of the transaction and identifying the partners directly involved in the transaction. Consider the following types of E-Commerce.

1. Business-to-Business (B2B)
2. Business-to-Consumer (B2C)
3. Consumer-to-Consumer (C2C)
4. Consumer-to-Business (C2B)
5. E-Govemance
   (a) Govemment-to-Govemment (G2G)
   (b) Govemment-to-Citizen (G2C)
   (c) Govemment-to-Business (G2B)
   (d) Govemment-to-Employees (G2E)

1.4.1 Business to Business (B2B)

Q13. Define Business to Business (B2B). State the advantages and disadvantages of Business to Business.

Ans : **(Aug.-21)**

Business-to-Business (B2B): B2B E-Commerce can be simply defined as the commerce between companies. In Business-to-Business type of electronic commerce system, companies do business with each other. For example, a manufacturer, selling a product to a wholesaler, a wholesaler selling a product to the retailer. Here manufacturer, wholesaler and retailer all are doing their separate businesses. B2B applications provide new opportunities to leverage emerging technologies to build their businesses.

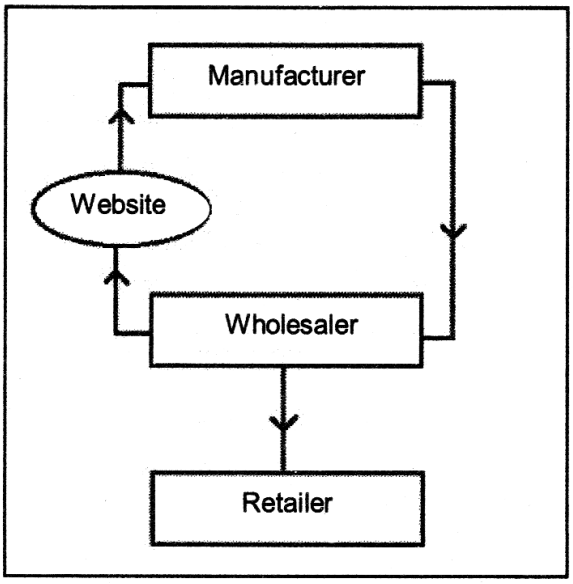

Fig. Business-to-Business E-Commerce

Above figure depicts three businesses - wholesaler, manufacturer and the retailer. Here manufacturer has a website using which wholesalers can purchase products from the manufacturer. When a wholesaler places an order on the website, the information regarding the order will be received by the manufacturer

through the website. Then after processing the order, the manufacturer will send the product to the wholesaler. After receiving the products wholesaler can sell it to the retailers. This type of business is called B2B model.

Advantages of B2B

1. Improving the speed of communication.
2. Higher customer retention rates in business.
3. Higher transaction value through business purchases.
4. Clear structure and collaborative shopping.
5. The opportunity to expand the business.
6. Increased brand awareness through an additional channel.
7. Lower customer acquisition costs.
8. Improved business and market intelligence.
9. Improved efficiency in ordering material.
10. Fewer errors in business transaction.
11. Just-in-time environment that minimizes inventory sitting in the warehouse.

Disadvantages of B2B

1. Low barriers to entry for competitors.
2. Limited Market opportunities.
3. Long Purchase Decision Time.
4. Inverted Power Structure.
5. Lengthy Sales Process.

1.4.2 Business to Consumer (B2C)

Q14. Define Business to Consumer (B2C). State the advantages and disadvantages of Business to Consumer.

Ans :

Business-to-Consumer (B2C)

B2C model runs as its name suggest. In this model, the company sells their products, goods or services directly to the consumer online. Here the customer can view products on the website that they want to buy and can order it. After receiving the order details, the company will process the order and then send the products directly to the customer. The most common example of a B2C application is a retail website featuring the business's products or services that can be directly purchased by the consumer, i.e., Amazon, Flipkart etc.

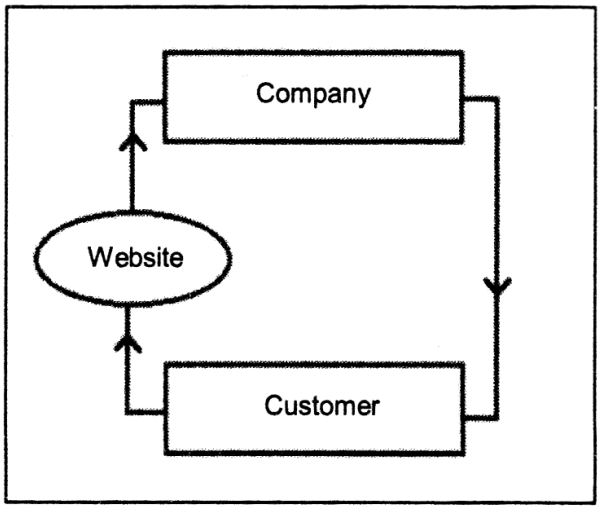

Fig. Business-to-Consumer E-Commerce

Advantages of B2C

1. Extensive search capabilities by item, corporate name, division name, location, manufacturer, partner, price or any other specified needs.
2. Reduced marketing and advertising expenses to compete on equal balance with much bigger companies; easily compete on quality, price and availability of the products.
3. The Internet gives customers the opportunity to browse and shop at their place. They can access the services from home, office at any time.
4. The Internet allows the companies to reach people around the world, offering many products to a global customer.
5. It has reduced inventory, employees, purchasing costs, order processing costs associated with faxing, phone calls, and data entry, and even eliminate physical stores.
6. Reduce transaction costs.
7. Its eliminate Middlemen.
8. Reduce customer service and sales support service.
9. Better way to deal with dealers and suppliers.
10. It creates automated registration verification, account entry and transaction authorization features.

Disadvantages of B2C

1. Customer will only locally and limited to certain area.
2. Increased Cost regarding inventory, employees, purchasing costs and order-processing costs associated with faxing.
3. Some sales or transaction may taking part indirectly or gone through third party.
4. Need staffs that give customer service and sales support service.
5. The list of products or services needs to regenerate every time when there is some new information or items to add in.

1.4.3 Consumer to Business (C2B)

Q15. Define Consumer to Business (C2B).

Ans : **(Aug.-21)**

Consumer-to-Business (C2B):

Customer to Business (C2B), also known as Consumer to Business, is the most recent E-Commerce business model. In this model, individual customers offer to sell products and services to companies who are prepared to purchase them.

C2B or Consumer-to-Business is a business model where the end consumers create products and services which are consumed by businesses and organizations. It is diametrically opposite to the popular concept of B2C or Business-to-Consumer where the companies make goods and services available to the end consumers.

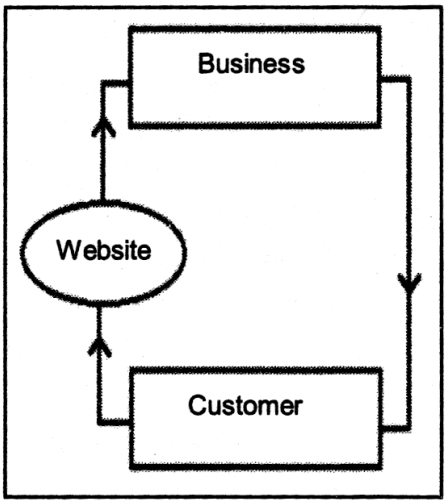

Fig. Consumer-to-Business E-Commerce

In C2B, the companies typically pay for the product or service. However, it can assume different forms like an idea generated by an individual (like an innovative business practice) which may be used and implemented by an organization. Another possible form of C2B is where a consumer specifies a need and the various businesses compete or bid to fulfil that need.

1.4.4 Consumer to Consumer (C2C)

Q16. Define Consumer to Consumer (C2C). State the advantages and disadvantages of Consumer to Consumer.

Ans : **(Aug.-21)**

Consumer-to-consumer E-Commerce or C2C is simply commerce between private individuals or consumers. Though there is no visible intermediary involved but the parties cannot carry out the transactions without the platform which is provided by the online market maker such as eBay. This type of E-Commerce is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers. It perhaps has the greatest potential for developing new markets. Social networking websites and e-commerce sites such as OLX, Quicker and e-bay follow this type of business model.

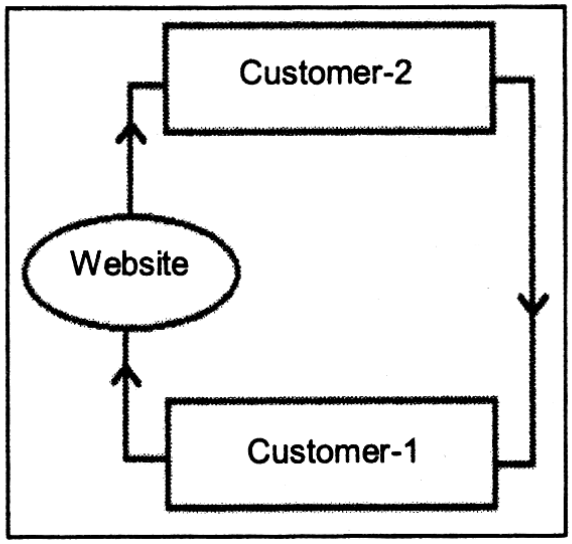

Fig. Consumer-to-Consumer E-Commerce

Advantages of C2C

1. Customers can directly contact sellers and eliminate the middle man.
2. It is easy to start the new business.
3. Sellers can reach both national and international customers.
4. Simplified buying and searching process.
5. Minimized searching and distribution cost.
6. Reduced Inventory cost or holding cost.

Disadvantages of C2C

1. The numbers of internet-related auction frauds have also increased.
2. Unnecessarily inflated prices by creating multiple buyers.
3. Illegal or restricted products and services have been found on selling process. Example: illegal drugs, pirated works.
4. More credit card/Payment frauds.

1.4.5 Business to Employee (B2E)

Q17. Define Business to Employee (B2E). State the benefits of Business to Employee.

Ans :

Business to Employee (B2E)

- It is also an e-commerce model in which an organization use web based applications to deliver services, information, or products to their employees.
- It enables exchange of intra-organization information (such as terms of employment, benefits, policies, operation manuals, company newsletter) with employees over the internet or an intranet.
- This model automates and streamlines business-employee related process.

- It helps organization to build up competent force that is loyal to organization.
- Organization are adopting this model with objectives of collaborating, sharing, team work, outsourcing and empowering their employees.
- It enables management to reach out to employees electronically.
- An Enterprise Resource Planning (ERP) is an example of B2E model that increase productivity.
- An employee can access organizational information easily from remote locations.
- Organization implements a customized homepage called B2E portal for their employees. B2E portal is a single point of entry for everyone within an organization.

Benefits of B2E

- Increase employee productivity
- Provide competitive advantage
- Retention of satisfied workforce
- Reduce administration cost
- Eliminates expenses related to paperwork, training and travel
- Availability of informed decision to employees
- Time saving in controlling process and decision making
- Providing employees a facility to work remotely.

1.5 APPLICATIONS OF ECOMMERCE

Q18. List out some applications of E-Commerce?

Ans :

E-Commerce development and its applications is an unavoidable sector in the present day today life. Given below are the most common E-Commerce applications.

i) Retail & wholesale

There are numerous applications for retail as well as wholesale in case of ecommerce. Here comes e-retailing or may be called as online retailing. This refers to the selling of goods and other services through electronic stores from business to consumers. These are designed and equipped using shopping cart model and electronic catalog.

ii) Marketing

Using web and ecommerce, data collection about the following are possible

1. Preferences
2. Behaviour
3. Needs
4. Buying patterns

The marketing activities like price fixing, product feature and its enhancement, negotiation, and the relationship with the customer can be made using these.

iii) Finance

E-commerce is being used by the financial companies to a large extent. By the name finance we know that there will be customers and transactions. The customers can check the balance in their savings account, as well as their loan account. There are features like transferring of money from and to their own accounts, paying of bills online and also e-banking. Online stock trading is also another feature of ecommerce.

iv) Manufacturing

E - commerce is included and used in the chain operations (supply) of a company. There are companies that form electronic exchange. This is by providing buying and selling items together, trading market information and the information of runback office like inventory control. This is a way that speeds up the flow of finished goods and the raw materials among the business community members.

v) Auctions

E - commerce customer to customer is direct selling of goods among customers. It includes electronic auctions that involve bidding system. Bidding allows prospective buyers to bid an item. In Airline Company they give bidding opportunity for customers to quote the price for a seat on specific route, date and time.

vi) Entertainment

E - commerce application is widely used in entertainment area also for video cataloging, multiplayer games, interactive ads and for online discussion.

vii) Education

In educational training also E - commerce has major role for interactive education, video conferencing, online class and for connecting different educational training centers.

1.6 E-COMMERCE ORGANIZATION APPLICATIONS

Q19. What do you understand by E-Commerce Organization Applications.

Ans :

E-business has become an essential requirement for growth in today's fast-paced, global economy. E-business offers great opportunities for organization to expand markets, increase efficiency, reduces costs, and offer customers and partner seamless access to information.

One of the most influential implications of e-business is that it changes the way services are generated and delivered to the customer. Companies in all sectors of the economy are seeking to leverage e-business to transform their value creation and delivery systems.

E-business does not only change service provision in the supplier companies, it also affects the typical features of service markets. Enhanced possibilities of control and integration, greater flexibility with respect to location, as well as the need to handle huge amounts of information flexibly, have facilitated and supported the deregulation and privatization of service industries.

Advantages of using e-commerce in business are motivating lot of businesses to use E- Commerce for their business.

Some common applications related to electronic commerce are the following:

- E-Finance
- E-Ban king
- E-Marketing
- E-Tailing
- E-Tourism
- E-Real Estate
- E-Recruitment
- E-Entertainment
- E-Stock Market
- E-publishing
- E-Storefronts
- E-mails

1.6.1 E-Marketing

Q20. Define E-Marketing ? What are the advantages and dis-advantages of E-Marketing ?

Ans :

Meaning

E-marketing is referred to those strategies and techniques which utilized online ways to reach target customers. There are millions of Internet users that daily access different websites using a variety of tools like computers, laptops, tablet and smart or android phone devices, and the number of internet users are increasing very rapidly. So every business seems to be jumping on the internet marketing bandwagon. The internet is most powerful tool that can put any business on solid footing with market leaders companies.

E marketing also known as online or internet advertising which uses the internet technology to promote online message to customer. E-marketing examples are email or social media advertising, web banners and mobile advertising.

Advantages of E-Marketing

1. Internet provides 24 hours and 7 days "24/7" service to its users. So you can build and make customers relationships worldwide, and your customer can shop or order product at any time.
2. The cost of spreading your message on internet is nothing. Many social media sites like Facebook, Linkedin and Google plus allow you freely advertise and promote your business.
3. You can easy and instantly update your registered customers or subscribers through email.
4. Visitors or potential customers of your website can get up to the minute information on each visit.
5. If you are having a sale, your customers can start shopping at the discounted prices literally as soon as they open their email.
6. If a company has an information sensitive business, like a law firm, newspaper or online magazine, that company can also deliver its products directly to customers without having to use a courier.

Disadvantages of E-Marketing

1. If you want a strong online advertising campaign you have to spend money. The cost of web site design, software, hardware, maintenance of your business site, online distribution costs and invested time, all must be factored into the cost of providing your service or product online.
2. Almost over 60% of households now a day shop online. While that numbers are continuously growing, your company needs to reach maximum people.
3. Some people prefer the live interaction when they buy any product. And if your company has a small business with one location, this may also deter customers from buying who lives on long distances.
4. Your company should have updated information on your site. This requires research and skills and thus timing of updates is also critical.
5. Is your company web site secure? There are many incorrect stereotypes about the security of the internet. As a result, many visitors of your business web site will not want to use their credit card to make a purchase. So there is a fear in the minds of your visitors of having their credit card info stolen.

Pulling it all together we can say that there are many pros and cons. So it's important for your company to consider each when designing your e-marketing strategy. You can easily overcome disadvantages, but this can happen only when you will view the customer experience from the eyes of your customer, not from the eyes of an internet marketer.

Q21. Explain the various web marketing strategies.

Ans :

Web marketing strategies are the methods adopted by companies for advertising and promoting their goods and services. The companies are using "Marketing mix" for this purpose. Marketing mix includes elements that help in achieving the marketing goals pertaining to sales and goods promotion. The following are those elements,

1. Product mix
2. Price mix
3. Place mix
4. Promotion mix.

1. Product Mix

Product is an entity or a service provided by a company. All products marketed by a company constitute its product mix. It includes all the characteristics of the product and the requirements of the customer. It takes into consideration the physical attributes of the product and the number of products a company has to offer the customers. It takes decisions regarding various aspects such as,

1. The quality and design of the product.
2. The number of varieties of products with special features it can offer.
3. Differentiating products from competitors by employing the brand image.
4. Development methods of packaging with innovative ideas.
5. Safety and protective measures for the product.

2. Price Mix

Price refers to the amount paid by the customer for the product/service. This is the important element in marketing mix accounting for demand as well as income. In pricing mix we make decisions regarding,

1. The pricing strategy which takes into account the return on investment pricing, largest target pricing, sales growth, market share, product image.
2. Pricing policies with respect to the product line pricing, competitive pricing.
3. Special pricing decisions like market penetration and price leadership.

3. Place Mix

Place refers to the location where product/ services are available. Marketing implies the process of moving the goods and services from producers to consumers. Moving the product or service to the final customer is the purpose of distribution. Providing right product/service at right place and right time is a matter of concern. Place mix is primarily concerned with,

i) Channels of distribution

ii) Physical distribution.

Channels of distribution involves those routes through which products are moved from producer to consumer.

Where as, Physical distribution is concerned with those activities which are involved in moving goods and services from producer to consumer.

4. Promotion Mix

Promotion is a process of marketing a commodity involving information, persuasion and influence. It is any form of communication with an objective to push the product, service or idea in a channel of distribution. The activities related to promotion attempt to affect knowledge, attitudes, preference, perceptions and behaviour of buyers. The element of persuasion to accept ideas, product, sendee etc., is the heart of promotion. Promotion is defined as "the coordinated self-initiated efforts to establish channels of information and persuasion to facilitate the sale of goods or services or the acceptance of ideas".

1.6.2 E-Advertising

Q22. Define E-Advertising. State the advantages and disadvantages of E-Advertising.

Ans :

While both Internet marketing and Internet advertising allow skilled professionals to utilize the Internet as a channel for promoting brands, products and services, there remains to be an argument as to which term is more appropriate to use. Wikipedia, for instance, defines Internet advertising as a form of promotion that uses the Internet to deliver marketing messages to prospective customers. On the other hand, it defines Internet marketing as the

promotion of products and services over the Internet.

The following statements distinguish both the E-Marketing and E-Advertising clearly.

- Internet marketing is the bigger concept while online advertising is just one part of the pie.
- Internet Marketing is More Rigorous than Internet Advertising.
- Internet advertising is more budget friendly and can even help a company earn from its ads

Advantages of E-advertising

1. Extensive coverage

Network connection with computers worldwide, it is a global network of large and small throughout the world in accordance with a variety of unified communications protocol consisting of information transmission network. Thus, over the Internet release wide range of advertising information, regardless of time and geographical constraints. From the advertising point of view, as an advertising medium, the wider the scope of dissemination of information, human contact, the more advertising effect will be. From the advertisers market, the consumer markets throughout every comer of the world, even a small business are likely to become an international company overnight.

2. Large-capacity information

Capacity to provide information on the most Internet companies is unrestricted. Businesses or advertising agencies can provide the equivalent of thousands of pages of advertising information and instructions, without having to worry every minute of the second increase on the expensive traditional media advertising costs. The network behind small banner ads, companies can put their company and its products and services, including product performance, price, model, morphology, etc. It seems necessary to explain all audiences, including detailed information made into a web page on their website. We can say that under certain circumstances the cost (for storing banner ads on other sites and pay for), companies can increase without limit advertising information, which in the traditional media cannot be imagined.

3. Strong interaction with sensory

Online advertising carrier is basically a multimedia, hypertext format, as long as the audience interested in a certain kind of product, you can tap the mouse further to know more, much more detailed and vivid information so that consumers can personally "experience" products, services and brand. As virtual reality and other new technologies to online advertising, immerse experience for customers such as goods or services, and to book online, trading and settlement, will greatly enhance the effectiveness of online advertising.

4. Real-time and long-lasting unity

Internet media has the right to change the function of information, companies can make changes at any time according to need advertising information, 24 hours warehouse industry can adjust product prices, product information, you can instantly get the latest product information dissemination to consumers and online media can also be long term preservation advertising information. Enterprise established for the product website, you can remain, waiting for consumer inquiries, enabling real-time and persistence unity.

5. Accurate delivery goals

The accuracy of online advertising include two aspects: one is corporate advertising target market for the accuracy of the network is actually one of a group composed of members of these organizations tend to have common hobbies and interests, potentially forming a thin market of the target customer base, companies can be specific to a corresponding product advertising consumer site up, clear target market, thereby leading to targeted audiences and the information will be Gang-related advertising messages with their professional and more attention to such

information; hand reflected in the accuracy of your audience, the Internet is the need to pay, when consumers browse the site, select the advertising information will only really interested in, so to reach the high accuracy of the information online advertising audience side.

6. Non-compulsory transfer information

As we all know, newspaper ads, magazine ads, TV ads, radio ads, outdoor advertising and is a compulsive medium, all you have to do everything possible to attract visual and auditory, forced indoctrination into your brain. The online advertising belongs on-demand advertising, newspaper classified ads with nature not need to completely view, which can be freely inquiries will focus on looking for information presented to you, thus saving time and avoiding ineffective passive attention.

Disadvantages of E-advertising

E-advertising has obvious advantages over traditional advertising, and also unavoidably brings its disadvantages, mainly in the following aspects:

1. Visitors to their online advertising "filtered"

Some visitors simply do not want to see, let alone have report responses. This situation is similar to other media, only a handful of consumers will buy your product, but that was it! Key is to be able to Canton. This part of the report information is passed to the consumer, the biggest difficulty lies in selecting the right online advertising target market, otherwise it is difficult to bring about the final ad buying behaviour.

2. Network technology to filter the ads

On the one hand for the advertising network itself provides more space, opportunities, tools, and the origin of Internet culture itself is obnoxious commercialism, so there have been some network software and tools will plant a report as a network of cultural dregs filter out. In doing online advertising company, be sure to verify that the target market has a tendency to extreme aversion to commercial advertising, whether the use of these filters online advertising tool.

3. Lack of skills and marketing skills

Internet advertising is the guiding ideology of the "information marketing" rather than the "impression inducement," but the expression and transmission of information still need presentation skills to attract consumers. Therefore, only the aspects of the product and the information listed here is definitely not form a successful online advertising. Traditional advertising to generate an irresistible impression and attractive presentation skills and marketing skills in online advertising is still needed, even more demanding. How to marketers to consumers in rich information resources at the same time, but also have a strong attraction for them is a huge challenge.

4. Online advertising marketing personnel requirements are higher than other media

Compared to online advertising can almost be seen as a microcosm of the entire marketing, which involves how to attract customers to interact with customers, etc., which is the traditional advertising to customers impressed goals have to go very far. In short online advertising requires marketer's integrated use of traditional advertising performance practices, providing information on the use of soft methods of marketing and network marketing techniques.

1.6.3 E-Banking

Q23. Define E-Banking. State the advantages of E-Banking.

Ans :

E-banking stands for electronic banking. It is also called as "Virtual Banking" or "Online Banking". It refers to the banking services provided by the banks over the internet. Some of these services include paying of bills, funds transfer, viewing account statement, etc. Banks also deliver their latest products and services over the internet. Internet banking is performed through a computer system

or similar devices that can connect to the banking site via the internet.

To access online banking, a customer visits the financial institution's secure website, and enters the online banking facility using the customer number and credentials previously setup. Online banking services usually include viewing and downloading balances and statements, and may include the ability to initiate payments, transfers and other transactions, as well as interacting with the bank in other ways.

Advantages of E-banking

- It is available all the time, i.e. 24x7.
- It is fast and efficient.
- It is quite convenient and easy to operate.
- It's generally secure.
- It is ubiquitous.
- It has no time constraints.
- It allows you to access your account from virtually anywhere.
- The operating cost per unit services is lower for the banks.
- It reduces infrastructure cost.
- It leads to increased customer satisfaction.
- Improved customer interaction.
- It reduces payment surcharges.
- It offers payment options.
- It offers convenience to customers as they are not required to go to the bank's premises.
- There is very low incidence of errors.
- Ease of transaction and monitoring.
- The customer can obtain funds at any time from ATM machines.
- The customer can easily transfer the funds from one place to another place electronically.

Q24. Explain the various services of E-Banking.

Ans :

The various services provided by e-banking are:

- **Electronic Funds Transfer**

  Electronic Funds Transfer (EFT) is a system or transferring money from one bank account to another without any direct paper money transaction.

- **Any Branch Banking**

  Any branch banking makes an account accessible from an branch of a particular bank.

- **Automated Teller Machine (ATM)**

  ATM machine allow the bank customers to gain access to their accounts and authorize them to conduct banking transactions with a magnetically encoded plastic card and a code number.

- **SMS Banking**

  Short Message Service (SMS) banking allows customers to make simple transactions to their bank accounts by sending and receiving text messages.

- **Point of Sale (POS)**

  Point of Sale (POS) service is an innovative electronic money transferring system that allows the customers of banks to pay for their purchases through their ATM and credit card at any POS enabled retailer.

- **Debit Cards**

  It is a payment card that deducts money directly from a consumer's g checking account to pay for a purchase.

- **Credit Cards**

  It is a payment card issued by a bank authorizing the holder to buy goods or services on credit.

- **Banking KIOSK**

  KIOSK Banking offers customers the flexibility to conduct their banking transactions via the KIOSK machine. The customer must have a

Debit Card and a PIN. When one inserts the debit Card into the Kiosk, he/she will be prompted to enter the PIN. He/she can then begin using KIOSK Banking.

- **SWIFT**

  The Society for Worldwide Inter-bank Financial Telecommunication ("SWIFT") operates a worldwide financial messaging network which exchanges messages between banks and other financial institutions.

- **Corporate Automated Clearing House**

  The Automated Clearing House (ACH) is an electronic network for financial transactions. ACH processes large volumes of both credit and debit transactions which are originated in batches.

1.6.4 Mobile Commerce

Q25. Define Mobile Commerce

Ans :

Mobile Commerce, also known as m-commerce, is defined as the process of performing "business transactions using handheld mobile devices which are connected through wireless networks. The business transactions may range from buying and selling goods, making mobile payments, downloading audio/video contents, playing online games, using numerous software applications or getting mobile tickets. The mobile devices include cellular phones, handheld computers such as palmtops or laptops, pagers, smartphones and Personal Digital Assistants (PDA).

The mobile users can access internet through these devices without any wired connection or a computer. Powered with the emerging technology based on Wireless Application Protocol (WAP), m-commerce employs web-ready micro browsers in these mobile devices to surf through the internet anytime, anywhere on earth.

WAP-enabled smartphones equipped with Bluetooth technology offer fax, e-mail and phone capabilities to the user to facilitate business transactions while in transit. Such smartphones are becoming so popular that most business houses have adopted m-commerce as the more efficient method of reaching to the customers or communicating with other business partners. The content delivery over wireless mobile devices has become much faster, safer as well as cheaper. The reservation of air/rail/bus tickets through mobile devices saves time and offers peace of mind to numerous passengers. Such services are gradually making m-commerce as the method of choice for performing digital business transactions. For these reasons, m-commerce is sometimes referred to as next generation e-commerce.

Wireless Communication Technology

Mobile commerce is based on wireless communication technology. The wireless communication technology has emerged as the new choice of modern corporate world. The wireless networking has some distinct advantages over traditional wired networking that employs co-axial, twisted pair or fibre optic cables for physical connection between two or more computing devices. In wireless networking, the data transfer between computers are facilitated by microwaves, radio waves or infrared waves. It eliminates the cumbersome cabling process involving bulky cables with a significant reduction in labour and material cost as well as development time.

The wireless networking technology together with wireless application protocol provides the backbone of mobile commerce applications.

In various vertical markets, such as retail, healthcare, manufacturing and warehousing, mobile commerce gained acceptance and provided increased productivity through the usage of mobile devices. The mobile handheld devices are used to transmit data in real time to centralized hosts through wireless networks.

The mobile commerce that employs wireless technology, offers some extra advantage over the internet based e-commerce. In e-commerce, the internet provides information anytime of the day, while in m-commerce, the information is available anytime, anywhere.

In e-commerce, the information is available as long as the user is connected with the internet, i.e. connected with the wired network. If the user is involved with some other activities, i.e. travelling or doing some offline job, which forces him/her to become disconnected from the internet, the information becomes unavailable. M-commerce removes such uncertainties.

Q26. Explain the scope of mobile commerce.

Ans :

- Mobile commerce provides instant connectivity between mobile users irrespective of their geographical location and time of the day. With enormous growth of wireless and mobile technology and rapid penetration of mobile phones in developing countries worldwide, the scope of m-commerce has increased manifold.
- With the advent of super fast 3G access technology that ensures high speed data transfer rates of the order of 20 Mbps, m-commerce is opening up new vistas of digital media applications. 3G technology, equipped with WiMax and UMTS standards for high speed mobile broadband internet connectivity, supports mobile multimedia application delivery at far greater bandwidths.
- So, it is now possible for mobile users to watch their favourite TV programmes or download and view famous movies in their mobile devices while travelling.
- M-Commerce offers various application such as Downloading MP3 music, playing online games or participating in live video conferencing while in transit have become a reality now. Apart from such audio/video applications, SMS-based text messaging finds wide acceptance in day-to-day business transactions.
- Whether to display product promos, to announce new product launches or to give attractive discounts, SMS have become an effective tool for mobile marketing. SMS-based advert-isements have become an integral part of m-commerce.
- The role that SMS play in giving instant support to customers in the event of any kind of product failures or delivery delays can neither be ignored nor downplayed.
- Another major application area of m-commerce is in the field of micro payments. The mobile devices are poised to replace the credit cards of the users in near future.
- The mobile phone will replace money in the pocket and will provide a low cost, low risk alternative for credit/debit cards for making payments anytime, anywhere and for anything.
- Mobile phones, equipped with a contact less smart card (that stores credit card information) along with the SIM card, can act as a digital credit card, which can be used for making payments.
- It employs NFC (Near Field Communication) technology that uses radio waves to transmit/ receive credit card information from the mobile device to the remote credit card service providers without any physical contact.
- Multiple credit/ debit card information can be stored in the same mobile device and payments can be made using either of these with the help of NFC technique. In SMS-based transactional payments, the mobile phone is used to send a PIN (Personal Identification Number) to a bank for authorization purpose.
- After the successful verification of the PIN by the bank, the user sends a payment request through an SMS from his/her mobile to the bank. The payment is done through an account transfer by the bank and both—the payer and payee get an SMS from the bank regarding the successful completion of the payment. Thus, a completely cashless payment is made using the mobile phone within 10 to 15 seconds.
- Mobile commerce is based on wireless mobile communication system, which utilizes digital cellular technology. The cellular network consists of a number of cell sites.

- Each cell site consists of a stationary base station (a radio frequency transceiver), an adjacent tower antenna (for transmission and reception of signals) and a surrounding cell (a hexagonal-shaped geographical area).
- Each cell is allotted a band of radio frequencies and provides coverage to any portable mobile device that comes within the geographical range of the cell.
- Whenever a mobile device such as a mobile phone or a pager, etc., comes inside a cell, it starts communicating with the base station using one of the cell frequencies.
- The base station receives the signal from the mobile device and transmits using the tower antenna to a distant base station for call delivery.
- To distinguish signals received from different mobile devices at the same base station, different access technologies such as Frequency Division Multiple Access (FDMA), Code Division Multiple Access (CDMA) or Time Division Multiple Access (TDMA) are used. Whenever a mobile user tends to move away from one cell to another adjacent cell, the cell frequency switching occurs, whereby the old cell frequency is dropped and the mobile device is automatically allotted a new frequency corresponding to the adjacent base station.
- The mobile device switches from previous base station frequency to current base station frequency and the communication with the new base station continues without interruption. This is known as cell handover.
- There are a number of different digital cellular technologies which are used in various mobile phone networks worldwide. These are:

  Global System for Mobile (GSM) Communication,

  General Packet Radio Service (GPRS),

  Enhanced Data Rates for GSM Evolution (EDGE),

  Digital Enhanced Cordless Telecommunications (DECT), etc.

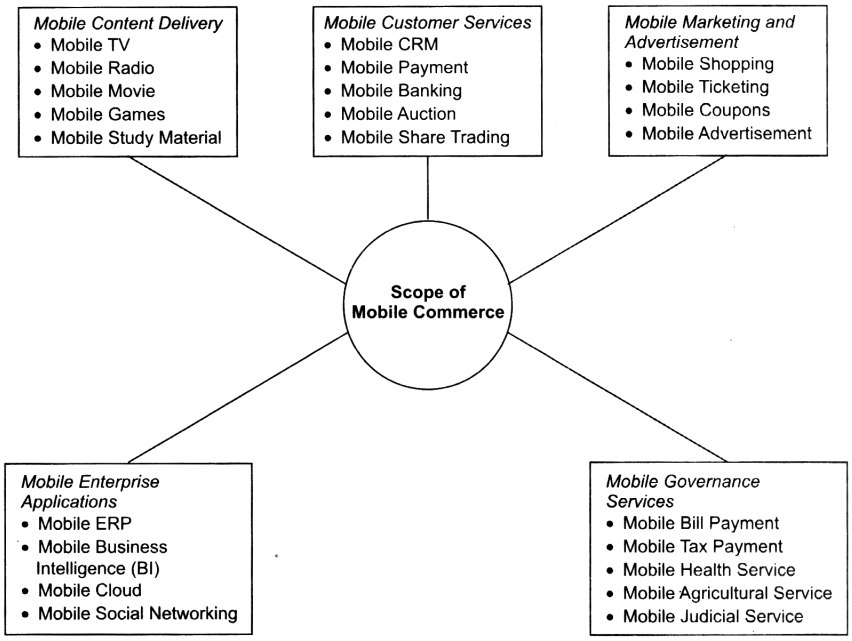

Fig : Scope of Mobile Commerce.

The geographical location of a base station is fixed, i.e. stationary and the frequency band and location of each base station are registered in the database of a centralized Mobile Telecommunication Switching Office (MTSO). So, whenever a mobile device changes position from one cell site to another, its geographical location can be easily tracked from MTSO. Utilizing this fact, mobile commerce offers a number of location-based services, such as tracking and monitoring of people/vehicles, identifying or discovering nearest ATM machines/banks/hospitals/ restaurants and local weather/traffic reports.

People tracking can help in criminal investigation where the mobile phone used by a criminal can be tracked and its location is identified. The vehicle tracking is utilized in finding out the actual position of the goods to be delivered and helps in supply chain operation management. The local traffic and weather report can be generated in a local office and delivered to the mobile phone of a user on request. The local bank/ATM/ hospital/ restaurant info can also be delivered to a mobile user at a minimal cost.

The scope of mobile commerce is all pervasive, and is gradually engulfing all aspects of lives of modern day citizens. Ranging from mobile banking, mobile browsing and mobile ticketing up to mobile marketing, mobile advertising and mobile computing, mobile commerce is gradually becoming an integral part of both corporate world and common people. With the prices of mobile phone decreasing exponentially and the number of different mobile applications increasing enormously, more and more people will indulge in m-commerce applications and soon it will become the preferred choice of the digital business world.

Q27. What are the benefits of Using M-Commerce ?

Ans :

The benefits of mobile commerce such as mobility, convenience, instant connectivity, personalization etc., are the reasons for popularity of M-commerce. Today, people no longer stand in long queues to pay bills or buy movie tickets instead, they simply use their mobile phones for this purpose. Moreover, many web portals enable mobile device users to play games, download music and video, interact with one another etc. The following are the major benefits of mobile commerce,

1. Quick Connectivity
2. Cost Effective
3. Personalization.

1. Quick Connectivity

M-commerce is ubiquitous i.e., it can be used at any location and at any time. The users of M-commerce use handheld/mobile devices like PDAs, tablet PCs, smart phones etc. These devices provide support for real-time information and communication irrespective of the location. Mobile devices are small and handy, hence they can be carried anywhere. Moreover, they provide instant connectivity to internet and other networks.

2. Cost-effective

The cost of transaction by using any mobile device is comparatively less. Business related data like reports, photographs etc., can be captured and transferred easily without the use of any high-priced equipment. Additionally, sms-based micro payments enable bank account transfer in just few seconds by sending an SMS. The payments made for electricity bills, telephone bills through mobile phones will be considered as part of their mobile phone bills only. Thus, this eliminates the requirement of third party payment systems like credit cards.

3. Personalization

Personalization refers to delivering information and providing services to users based on their personal choice, preference or context. For example, if a user is travelling to some place (say Goa), then he/she might get information like good restaurants/hotels, travel packages, cab services etc., in Goa. Mobile devices are handheld devices and are attached to a particular network, for example 2G network. When mobile users move from one place to another, their location can be identified. And based on this location information, they can be offered services and products that are near by (i.e., localization).

Example, when a user searches for a hospital, he/she is given information about the nearest hospital from the users current location.

Q28. Describe the limitations of M-Commerce.

Ans :

1. Small screen size

Mobile devices have smaller screen size (of the order of 2 by 3 inches) and poor resolution which makes them inconvenient for browsing applications. Data entry can be quite difficult using small combinational keypad that comes with most of the mobile handheld devices. The wide and high resolution screens in conventional desktops or laptops used in e-commerce applications offer ease of use in data entry operations as well as viewing web pages. These larger screens support 1920 x 1080 resolution and 3D graphics display. Although mobile devices offer greater mobility and flexibility in accessing information, the smaller screen size restricts the amount of information that could be presented and offers a less convenient user interface in the form of menu-based scroll-and-click mode of data entry.

2. Low speed processor

Most mobile devices come with low-powered processors with much lower processing speed compared to sophisticated processors (i.e. core 2 duo or i-core series) used in desktops or laptops. Such low speed processors restrict the download speed in most mobile commerce applications. The applications requiring too much processing power should be avoided as they may become irritably slow due to low speed processors. Also, keeping the low processor speed in mind, the mobile websites must be optimized to ensure customer satisfaction. Unnecessary plug-ins, flash images and animations should be removed to ensure speed of delivery.

3. Small memory capacity

The mobile devices do not have large storage space. The memory capacity in mobile devices is in the order of 5 GB to 10 GB compared to 2 TB or higher used in desktops/ laptops. So, it is difficult to store large video files in mobile devices for future use. The mobile application developers must be concerned about the size of their applications during the development phase.

4. Low power backup

Mobile devices use batteries as their power supply. Normally, power for a mobile device lasts up to 2-3 days, depending on the size of the device. After this period, the battery should be recharged again, and it adds an additional burden to the user who has to remember every now and then to recharge it.

5. Wireless Network

Mobile commerce depends on wireless networks which are usually of lower speed compared to wired networks. In many cases, wireless networks offer one-fourth speed of standard wired network. Also, most wireless networks are more common in urban areas and some of the rural areas might not have wireless communication facilities. So online mobile services may become unavailable in some rural areas, and thus the popularity of mobile services may be suffered. Unless the mobile device is 2.5G or 3G technology compatible, the applications will become sluggish and unreliable compared to wired network applications. Atmospheric interference and fading of signals transmitted through wireless networks sometimes cause severe data errors and may even lead to disconnections.

6. Bandwidth Restrictions

A major disadvantage of mobile commerce is the bandwidth limitation, which imposes a limitation on speed of operation in various m-commerce applications. Wireless networks use frequency spectrum to transmit information across the network. Regulatory bodies control the use of available frequency spectrum and allocate the spectrum to various mobile operators.

In India, the frequency spectrum were initially allocated and regulated by Department of Telecommunication (DoT). Later, the Telecom Regulatory Authority of India (TRAI) was set up to control the usage of frequency spectrum. The limited availability of bandwidth to various mobile operators in turn restricts the data rate in mobile commerce applications. The GSM technology offers the data rate of the order of 10 Kbps and 3G technology can go up to 10 Mbps.)

7. Security issues

Another concern that is often raised in connection with mobile commerce is the security issue. Mobile devices are more vulnerable to theft, loss and mishandling. Special care must be taken to ensure that the security and privacy of the mobile customer are not compromised at the event of loss of a mobile device. This includes not storing sensitive information in the mobile devices and changing/locking of PIN/password fast and simple at the time of need.

Mobile commerce employs public wireless networks for transmission of signals which can be easily intercepted by hackers for capturing/ altering stream of data travelling through the wireless medium. In wired networks, in order to gain access, the intruder has to gain physical access to the wired infrastructure. In wireless networks, anyone with the ability to receive signal in a mobile device can gain access to the network. In order to protect the wireless network from unwanted users, various encryption and authentication techniques should be employed. As the handheld devices have limited computing power and storage capacity, it is difficult to employ 256 bit encryption technique that requires enough computing power. However, the SIM cards inside a cell phone can include the digital signatures of PKJ system. Thus, the PKI system of digital signatures can be integrated in a mobile device that adds to the security of the mobile application.

1.6.5 E-Trading

Q29. Explain briefly about E-Trading / Online trading.

Ans :

E-trading/Online Trading

E-trading/online trading is also known as E-broking. E-broking provides up-to-date and on-time information about the stock prices to everyone across the world. People can respond to the changes taking place in the stock market by the information provided by E-broking. People having Internet bank account, can buy and sell stocks online.

Before the Internet came into existence, buying and selling stock at the correct time relied upon the availability of eminent brokers. These brokers used to be in shortage. Small investors always used to face difficulty in getting a broker. A part from brokers, the other sources from where the information about stock prices can be obtained were magazines, newspapers, telecommunications and radios. These sources are cost consuming, slow and less compre-hensive compared to Internet.

Online-trading/E-trading is the best solution to the requirements of investors. All the problems which investors used to face before the introduction on Internet will be sorted out by E-trading.

Advantages

1. The transaction cost is reduced by carrying out auto-mating process.
2. The transactions are executed quickly since there is no paper work document involved.
3. The market efficiency is increased since there is a possibility of achieving greater liquidity i.e., more number of buyers and sellers.
4. The information regarding the price is transparent i.e., the user can have information regarding price of the stock, currencies etc., which was opaque earlier.
5. The level of completion has increased to maximum level.

1.6.6 E-Learning

Q30. Define E-Learning. State the advantages and disadvantages of E-Learning.

Ans :

The word "e" in e-learning specifies electronic. This means that e-leaming is an electronic device or learning with the use of electronic devices or technology. It includes learning by the means of computer or laptop, mobile phones etc. In the early days it received a bad press, as many people thought bringing computers into the classroom would remove that human element that some learners need, but as time has progressed technology has developed, and now we embrace smart phones and tablets in the classrooms and offices. Building partnerships with quality training providers, and combining this with a dedicated experienced technical team and support staff, Virtual College provides the perfect blended learning environment, offering anyone the chance to take their online training to the next level.

Advantages of E-Learning

E-leaming has a lot of advantages over the regular learning in the schools or classrooms. Some of them are listed here.

(a) **Flexible**

In regular kind of learning, the student may have a fixed routine in which they have to sit together and leam from the instructor. The duration of the class is fixed. The topics to be discussed in the class are also fixed. But this is not the case in e-leaming. The routine of e-leaming is very flexible. The students can leam when they want and wherever they want. It is up to them what they want to study and for how much time they have to study.

(b) **Anytime Access to the Resources**

Students need access to different kinds of resources. These resources can be notes, theories, diagrams etc. In e-leaming, the resources are made available to the students at all the times of the day. So the students can use them anytime and anywhere they want.

(c) Immediate Result or Feedback

In the case of regular learning, the tests are taken by paper and pen. These papers are then checked by the teachers. And then the results are declared. This takes a lot of time and hard work. The students have to wait a lot for the results which become very stressful for them. It is not easy for the teacher also to check these papers. E- leaming gives an advantage here. The tests are taken through online quizzes or some pre-designed software which first conduct the test and then check them. This reduces the work of the teacher. Also, the result is obtained in a short while, in some cases, it is obtained just after the test concludes.

(d) More Retention

In the case of regular learning. Learning is done by means of conversation between the instructor and the students. The use of smart technology is very less in regular teaching method. But in the case of e-leaming, there is a generous use of digital resources included presentations, multimedia that includes images and videos etc. With the use of such resources, the students get to leam more. They understand better the things which they see rather than read. So it increases the understanding and retention ability of the students.

(e) Cost Effective

When a student is engaged in regular learning, they have to go to the institute regularly. They need a transportation cost. The teachers teaching the student get the salary from the institutes. This adds it to the cost. The maintenance cost of the institute also adds up. Classroom rent or institutional rent is also involved. On the other hand, in the case of e-leaming, there is no rent involved. The students can have access to resources from anywhere they are so there is no transportation cost also. Many such factors which increase the cost are chopped off in e-leaming. Therefore, e-leaming is more cost effective.

(f) Greener Approach

The regular learning method uses pen and paper. Even the tests are conducted on a pen-paper medium. These papers are made by chopping down trees. Moreover, the pencils are also made of wood. Also the use of transportation by the students and teachers causes pollutions. But in e-leaming, everything is digital. There is no need for papers and pens. Everything is noted using electronic devices. The students do not have to go to the schools so there is no need for transportation. This shows that e-leaming follows a greener approach.

(g) Fast Learning

In regular learning, the speed of learning depends on the number of staff available and the number of classrooms available and the limited time period of a class. But in the case of e-leaming, the speed depends on as per the needs of the students.

(h) Easy Collaboration

When a number of students work together on the same topic, they face problems while they study together using the regular learning methods. E-leaming gives them a good opportunity. They connect to each other at anytime and anywhere. They can share resources, discuss and leam. Therefore, e-leaming is very beneficial for all the students who wish to study in groups.

(i) Easy Updating

In regular learning methods notes have to be regularly updated by the students. This takes a lot of time. But in e-leaming, notes are simply sent to the students. So they are automatically updated.

Disadvantages of E-Learning

Every which is advantageous for us will definitely have some drawbacks associated with it. Similarly, e-leaming also has some drawbacks associated with it. Some of them are:

(a) No Control

In the case of regular learning, the learning controlled by the teacher. The teacher motivates the students to study. Also, the teacher makes a regular routine for the student. This makes learning necessary for them. But in the case of e-leaming, it is just the opposite. The control is in the hands of the student. It is the student who decides what to study and when to study. In this case, the students become careless. The may neglect the fact that they have to study. There is no motivation, no regularity exists in e-leaming. This is the major drawback of e-leaming.

(b) Learning Approach

In the regular learning technique, the students interact with each other face to face. This interaction becomes enjoyable for them. If these students practice the case of e-leaming, they feel that this approach is very dull. They find it very boring to study alone. So this is a drawback of e-leaming that it does not provide a regular interaction between the students. Moreover, if there is no discussion between the students, they will think only in one direction. They will not get to know what other people feel at the same topic and they will not be able to compare their views.

(c) Technology Dependent

E-leaming depends solely on technology. Computers are the basic necessity of e-leaming. Internet becomes the second necessity. When someone wants to join e-leaming, he needs to possess a computer or a laptop, an Internet connection with a go speed, some specific software which is required to run special kinds of multimedia or e- resources. This becomes the investment for e-leaming. But theses gadgets may experience some faults. In the case of a fault, e-leaming could not be continued for a short while. These devices have to be rectified first and then the process of e-leaming could start. Moreover, these devices require maintenance."

1.6.7 E-Shopping

Q31. Define E-Shopping (or) Online shopping. State the advantages and disadvantages of E-Shopping.

Ans :

Online shopping or E-shopping refers to the act of purchasing products or services over the Internet. It is a form of e-commerce which allows consumers to directly buy goods or services from a seller over the Internet. Online shopping is popular with different names like Online store, E-store, Internet shop, E-shop, Web shop, Virtual store, and Web store.

Online customers must have access to the Internet and a valid method of payment in order to complete a transaction. Online shoppers usually make payment through credit card or a PayPal account. The other alternatives means of payments are Cash on Delivery (CoD), Debit card or various types of electronic money. Online shopping has grown in popularity over the years, mainly because people find it convenient and easy to bargain shop from the comfort of their home or office. One of the most enticing factor about online shopping, is it alleviates the need to wait in long lines or search from store to store for a particular item.

Advantages of Online Shopping

1. The first and most common advantage to shop online is the convenience. You can buy almost anything you could imagine without ever leaving your house.
2. Online stores are open 24 hours a day and are accessible from any location with an Internet connection.
3. The comfort and security of shopping from home is also a reason online shopping has increased in popularity.
4. Online shopping provides you a comfortable and familiar environment; you do not have to physically travel to a town or section of a city. So, it saves your time and energy.
5. It is often cheaper as the seller does not have the costs of running a shop and having to pay wages to salespeople, insurance and all of the other running costs of a real world business.
6. The other plus point of online shopping is that you do not incur any traveling expenses such as petrol or bus fares.
7. Freedom of choice is very high in online than shopping from a nearby store. In online shopping, you can choose the product you are looking, from a vast range of products.
8. Finding a product online is much easier than looking for it in the local store. You can search any product easily by using the search engine feature of an online shopping website. But in store you have to look for it until you find it.

Disadv32antages of Online Shopping

1. One of the main disadvantages of online shopping is that sometimes you have to pay shipping costs and have to wait for the items you purchased to be shipped and delivered. This could take several weeks if you have purchased a product from overseas, and the costs of shipping may be high.
2. You can not purchase an item online that you need to use immediately.
3. No bargaining. Online shopping does not offer you the liberty to bargain and you are bound to buy the item in the quoted price.
4. Another disadvantage is that you have to buy the item relying purely on a photograph and description, you cannot feel or see the item you want to buy i.e. when buying online you cannot confirm the actual quality of the product. It can sometimes be quite hard to judge the size or quality of some items purely from a photograph.
5. One more disadvantage of online shopping is that it is much harder and takes longer to return faulty goods; you will have to repack it and pay to ship it back to the seller. It can literally take weeks to exchange a faulty product purchased online.
6. As online shopping is becoming very common the number of online scam and fraud is also increasing. This is why a buyer should always buy from trusted websites only because trusted websites would take care of any fraud to maintain their reputation.

Short Question and Answers

1. Define E-Commerce

Ans :

Electronic Commerce:

- Electronic commerce, commonly known as E-commerce is trading in products or services using computer networks, such as the Internet.
- Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems.
- Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail.

2. E - Business

Ans :

Commerce, the exchange of valuable goods or sendees, has been conducted for thousands of years. Traditionally, commerce involved bringing traders, buyers, and sellers together in a physical marketplace to exchange information, products, sendees, and payments. Today, many business transactions occur across a telecommunications network where buyers, sellers, and others involved in the business transaction (such as the employees who process transactions) rarely see or know each other and may be anywhere in the world. This process of buying and selling of products and services across a telecommunications network is often called electronic commerce or e-commerce.

Many people use the term "e-commerce" in a broader sense: to encompass not only the buying and selling of goods, but also the delivery of information, the providing of customer service before and after a sale, the collaboration with business partners, and the effort to enhance productivity within organizations. Others refer to this broader spectrum of business activities that can be conducted over the Internet as e-business. Most people today use the terms "e-commerce" (in its broadest sense) and "e-business" interchangeably. In this book, we use the term "e-business" to indicate the widest spectrum of business activities that use Internet and Web technologies.

The initial development of e-business transactions began more than thirty years ago when hanks began transferring money to each other by using electronic funds transfer (EFT).

When large companies began sharing transaction information with their suppliers and customers via electronic data interchange (EDI).

Using EDI, companies electronically exchange information that used to be traditionally submitted on paper forms, such as invoices, purchase orders, quotes, and bills of lading. This exchange occurs both with suppliers and customers (often called trading partners).

3. Define Business to Business.

Ans :

Business-to-Business (B2B): B2B E-Commerce can be simply defined as the commerce between companies. In Business-to-Business type of electronic commerce system, companies do business with each other. For example, a manufacturer, selling a product to a wholesaler, a wholesaler selling a product to the retailer. Here manufacturer, wholesaler and retailer all are doing their separate businesses. B2B applications provide new opportunities to leverage emerging technologies to build their businesses.

4. Advantages of B2C.

Ans :

1. Extensive search capabilities by item, corporate name, division name, location, manufacturer, partner, price or any other specified needs.

2. Reduced marketing and advertising expenses to compete on equal balance with much bigger companies; easily compete on quality, price and availability of the products.
3. The Internet gives customers the opportunity to browse and shop at their place. They can access the services from home, office at any time.
4. The Internet allows the companies to reach people around the world, offering many products to a global customer.
5. It has reduced inventory, employees, purchasing costs, order processing costs associated with faxing, phone calls, and data entry, and even eliminate physical stores.
6. Reduce transaction costs.
7. Its eliminate Middlemen.
8. Reduce customer service and sales support service.
9. Better way to deal with dealers and suppliers.
10. It creates automated registration verification, account entry and transaction authorization features.

5. Define Consumer to Business.

Ans :

Customer to Business (C2B), also known as Consumer to Business, is the most recent E-Commerce business model. In this model, individual customers offer to sell products and services to companies who are prepared to purchase them.

C2B or Consumer-to-Business is a business model where the end consumers create products and services which are consumed by businesses and organizations. It is diametrically opposite to the popular concept of B2C or Business-to-Consumer where the companies make goods and services available to the end consumers.

6. Define Consumer to Consumer (C2C).

Ans :

Consumer-to-consumer E-Commerce or C2C is simply commerce between private individuals or consumers. Though there is no visible intermediary involved but the parties cannot carry out the transactions without the platform which is provided by the online market maker such as eBay. This type of E-Commerce is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers. It perhaps has the greatest potential for developing new markets. Social networking websites and e-commerce sites such as OLX, Quicker and e-bay follow this type of business model.

7. Define E-Marketing

Ans :

E-marketing is referred to those strategies and techniques which utilized online ways to reach target customers. There are millions of Internet users that daily access different websites using a variety of tools like computers, laptops, tablet and smart or android phone devices, and the number of internet users are increasing very rapidly. So every business seems to be jumping on the internet marketing bandwagon. The internet is most powerful tool that can put any business on solid footing with market leaders companies.

E marketing also known as online or internet advertising which uses the internet technology to promote online message to customer. E-marketing examples are email or social media advertising, web banners and mobile advertising.

8. Advantages of E-Marketing.

Ans :

1. Internet provides 24 hours and 7 days "24/7" service to its users. So you can build and make customers relationships worldwide, and your customer can shop or order product at any time.
2. The cost of spreading your message on internet is nothing. Many social media sites like Facebook, Linkedin and Google plus allow you freely advertise and promote your business.
3. You can easy and instantly update your registered customers or subscribers through email.

4. Visitors or potential customers of your website can get up to the minute information on each visit.
5. If you are having a sale, your customers can start shopping at the discounted prices literally as soon as they open their email.
6. If a company has an information sensitive business, like a law firm, newspaper or online magazine, that company can also deliver its products directly to customers without having to use a courier.

9. Define E-Advertising.

Ans :

While both Internet marketing and Internet advertising allow skilled professionals to utilize the Internet as a channel for promoting brands, products and services, there remains to be an argument as to which term is more appropriate to use. Wikipedia, for instance, defines Internet advertising as a form of promotion that uses the Internet to deliver marketing messages to prospective customers. On the other hand, it defines Internet marketing as the promotion of products and services over the Internet.

The following statements distinguish both the E-Marketing and E-Advertising clearly.

- Internet marketing is the bigger concept while online advertising is just one part of the pie.
- Internet Marketing is More Rigorous than Internet Advertising.
- Internet advertising is more budget friendly and can even help a company earn from its ads.

10. Define E-Banking. State the advantages of E-Banking.

Ans :

E-banking stands for electronic banking. It is also called as "Virtual Banking" or "Online Banking". It refers to the banking services provided by the banks over the internet. Some of these services include paying of bills, funds transfer, viewing account statement, etc. Banks also deliver their latest products and services over the internet. Internet banking is performed through a computer system or similar devices that can connect to the banking site via the internet.

To access online banking, a customer visits the financial institution's secure website, and enters the online banking facility using the customer number and credentials previously setup. Online banking services usually include viewing and downloading balances and statements, and may include the ability to initiate payments, transfers and other transactions, as well as interacting with the bank in other ways.

Advantages of E-banking

- It is available all the time, i.e. 24x7.
- It is fast and efficient.
- It is quite convenient and easy to operate.
- It's generally secure.
- It is ubiquitous.
- It has no time constraints.
- It allows you to access your account from virtually anywhere.

- The operating cost per unit services is lower for the banks.
- It reduces infrastructure cost.
- It leads to increased customer satisfaction.
- Improved customer interaction.
- It reduces payment surcharges.
- It offers payment options.
- It offers convenience to customers as they are not required to go to the bank's premises.
- There is very low incidence of errors.
- Ease of transaction and monitoring.
- The customer can obtain funds at any time from ATM machines.

11. Define Mobile Commerce

Ans :

Mobile Commerce, also known as m-commerce, is defined as the process of performing "business transactions using handheld mobile devices which are connected through wireless networks. The business transactions may range from buying and selling goods, making mobile payments, downloading audio/ video contents, playing online games, using numerous software applications or getting mobile tickets. The mobile devices include cellular phones, handheld computers such as palmtops or laptops, pagers, smartphones and Personal Digital Assistants (PDA).

The mobile users can access internet through these devices without any wired connection or a computer. Powered with the emerging technology based on Wireless Application Protocol (WAP), m-commerce employs web-ready micro browsers in these mobile devices to surf through the internet anytime, anywhere on earth.

WAP-enabled smartphones equipped with Bluetooth technology offer fax, e-mail and phone capabilities to the user to facilitate business transactions while in transit. Such smartphones are becoming so popular that most business houses have adopted m-commerce as the more efficient method of reaching to the customers or communicating with other business partners. The content delivery over wireless mobile devices has become much faster, safer as well as cheaper.

12. Online Trading.

Ans :

E-trading/online trading is also known as E-broking. E-broking provides up-to-date and on-time information about the stock prices to everyone across the world. People can respond to the changes taking place in the stock market by the information provided by E-broking. People having Internet bank account, can buy and sell stocks online.

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Online-trading/E-trading is the best solution to the requirements of investors. All the problems which investors used to face before the introduction on Internet will be sorted out by E-trading.

13. Define E-Learning.

Ans :

The word "e" in e-learning specifies electronic. This means that e-leaming is an electronic device or learning with the use of electronic devices or technology. It includes learning by the means of computer or laptop, mobile phones etc. In the early days it received a bad press, as many people thought bringing computers into the classroom would remove that human element that some learners need, but as time has progressed technology has developed, and now we embrace smart phones and tablets in the classrooms and offices. Building partnerships with quality training providers, and combining this with a dedicated experienced technical team and support staff, Virtual College provides the perfect blended learning environment, offering anyone the chance to take their online training to the next level.

14. Disadvantages of Online Shopping.

Ans :

1. One of the main disadvantages of online shopping is that sometimes you have to pay shipping costs and have to wait for the items you purchased to be shipped and delivered. This could take several weeks if you have purchased a product from overseas, and the costs of shipping may be high.
2. You can not purchase an item online that you need to use immediately.
3. No bargaining. Online shopping does not offer you the liberty to bargain and you are bound to buy the item in the quoted price.
4. Another disadvantage is that you have to buy the item relying purely on a photograph and description, you cannot feel or see the item you want to buy i.e. when buying online you cannot confirm the actual quality of the product. It can sometimes be quite hard to judge the size or quality of some items purely from a photograph.
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6. As online shopping is becoming very common the number of online scam and fraud is also increasing. This is why a buyer should always buy from trusted websites only because trusted websites would take care of any fraud to maintain their reputation.

Choose the Correct Answers

1. Find the Non- Technical Draw back of E-commerce. [d]
   (a) Intial cost (b) User Resistence
   (c) Security (d) All
2. How many types of E- Business we have [a]
   (a) 6 (b) 5
   (c) 4 (d) 7
3. _____ is a major component of e-business. [b]
   (a) Marketing (b) E-commerce
   (c) Transactions (d) None
4. Find out the function of supply -chain [d]
   (a) Finance (b) Customer Service
   (c) Marketing (d) All
5. ICDT Model Divides market space into - types? [c]
   (a) 2 (b) 3
   (c) 4 (d) 5
6. Find which is not a pillar of E-commerce. [d]
   (a) Information (b) Relationship
   (c) Transaction (d) Selection
7. Following is not an advantage of B2C. [d]
   (a) Direct communication (b) Business Expansion
   (c) Chiper than Normal Business (d) Limited Market
8. E- Marketing is also known as [c]
   (a) Online -Advertising (b) Internet - Marketing
   (c) a & b (d) None
9. Which is not an video Add. [d]
   (a) AOL (b) Tubmate
   (c) Facebook (d) Text message
10. Find which is not related with E-Banking? [d]
    (a) Debit card (b) Credit card
    (c) Smart card (d) LISENCE - card

Fill in the blanks

1. _____ is a method of Modern-Basiness.
2. EFT stands for _____ .
3. E-commerce provide Benifits to _____ and _____ .
4. E-Business is also called as _____.
5. B2A stands for _____.
6. ICDT Model developed by _____.
7. C2B comes under _____ communication.
8. _____ Uses the Internet Technology to promote online message to consumer.
9. SEM stands for _____.
10. M-Commerce stands for _____.

ANSWERS

1. E-commerce
2. Electronic Fund Transfer
3. Organization, Consumers and Society
4. E-Business
5. Business to Administration
6. Allberd Angehrn
7. Bi-Directional
8. E-marketing
9. Search Engine Marketing
10. Mobile - Commerce

One Mark Answers

Q1. Define E-Trading.

Ans :

The act of Buying and selling international cunencies, futures, stocks, bonds and other financial instruments through the Internet.

Q2. Define Online Shopping.

Ans :

It is the process of Buying goods and services from merchants over the Internet.

Q3. List various forms of E-Banking

Ans :

Following are the various forms of E-Banking

1. ATM
2. Tele-Banking
3. Smart- card
4. Debit card
5. e-cheque

Q4. List out the categories of E-commerce.

Ans :

1. B2B.
2. B2C
3. C2C
4. C2B
5. B2G
6. G2B
7. G2C

Q5. Supply Chain.

The supply chain comprises the flow of all information, products, materials and funds between the different stages of creating and selling a product.

UNIT II

Framework of E-Commerce: Application Services - Interface Layers - Secure Messaging - Middleware Services and Network Infrastructure - Site Security - Firewalls & Network Security - TCP/IP – HTTP - Secured HTTP – SMTP - SSL. Data Encryption: Cryptography – Encryption – Decryption - Public Key - Private Key - Digital Signatures - Digital Certificates.

2.1 Framework of E-Commerce

Q1. Explain the Architecture frame work of E-Commerce ?

Ans : **(Aug.-21, Oct.20)**

Architectural Frame Work of E-Commerce

The software framework necessary for building electronic commerce applications is little understood in existing literature. In general a framework is intended to define and create tools that integrate the information found in today's closed systems and allow the development of e-commerce applications. It is important to understand that the aim of the architectural frame-work itself is not to build new database management systems, data repository, computer languages, software agent based transaction monitors, or communication protocols Rather, the architecture should focus on synthesizing the diverse resources already in place in corporations to facilitate the integration of data and software for better applications. The electronic commerce application architecture consists of six layers of functionality, or services:

1. Applications
2. Brokerage services, data (or) transaction management
3. Interface, and; support layers
4. Secure messaging, and structured document interchange services.
5. Middle ware services
6. Network infrastructure of basic communications services.

These layers cooperate to provide a seamless transition between today's computing resources and those of tomorrow by transparently integrating information access and exchange within the context of the chosen application. As seen in table above, electronic commerce applications are based on several elegant technologies. But only when they are integrated do they provide uniquely powerful solutions.

2.1.1 Application Services

Q2. Explain briefly about application services of E-Commerce.

Ans : **(Aug.-21, June-19)**

Three distinct classes of electronic commerce application can be distinguished customer to business, business-to-business, and intra organisation.

(i) Consumer-to-Business Transactions

This category is also known as marketplace transaction. In a marketplace transaction, customers learn about products differently through electronic publishing, buy them differently using electronic cash and secure payment systems, and have them delivered differently. Also, how customers allocate their loyalty may also be different. In light of this, the organisation itself has to adapt to a world where the traditional concepts of brand differentiation no longer hold where "quality" has a new meaning, where "content" may not be equated to "product", and "distribution" may not automatically mean "physical transport". In this new environment, brand equity can rapidly evaporate forcing firms to develop new ways of doing business.

(ii) Business-to Business Transactions

This category is known as market-link transaction. Here, businesses, governments, and other business organisations depend on computer-to-computer communication as a fast, an economical, and a dependable way to conduct business' transactions. Small companies are also beginning to see the benefits of adopting the same methods. Business-to-business transactions include the use of EDI and electronic mail for purchasing goods and services, buying information and consulting services, submitting requests for proposals, and receiving proposals. The current accounts payable process occurs through the exchange of paper documents. Each year the trading partners exchange millions of invoices, checks, purchase orders, financial reports, and other transactions. Most of the documents are in electronic form at their point of origin but are printed and key-entered at the point of receipt. The current manual process of printing, mailing is costly, time consuming, and error-prone. Given this situation and faced with the need to reduce costs, small businesses are looking toward electronic commerce as a possible rescuer.

(iii) Intra-organizational Transactions

This category is known as market-driven transactions. A company becomes market driven by dispersing throughout the firm information about its customers and competitors; by spreading strategic and tactical decision making so that all units can participate; and by continuously monitoring their customer commitment by making improved customer satisfaction an ongoing objective. To maintain the relationships that are critical to delivering superior customer value, management must pay close attention to service, both before and after sales. In essence, a market-driven business develops a comprehensive understanding of its customers' business and how customers in the immediate and downstream markets perceive value. Three major components of market- driven transactions are

- Customisation - Customer orientation through product and service
- Integration - Cross-functional coordination through enterprise
- Advertising, marketing, and customer service.

Q3. Define brokarage services and data management.

Ans : **(Aug.-21, June-19)**

It is an information handling layer of the framework that governs and manages huge amounts of data on the network. It acts as a broker, or mediator that offers service integration between customers and information providers when provided with some constraints like, low price, fast service, or profit maximization for a client. For instance, a customer looking to purchase a specific book from the web goes through the sites of different publications. But, for this he/she will have to be aware of the URL's of these sites. In addition, the customer has to feed the details of the book repeatedly on different sites to search the services at best prices. However, if the customer finds an information brokerage site which can provide the book as per the need, then huge amount of time and effort is saved.

Some other characteristics of this layer are,

(i) It supports the data management and usual transaction services.

(ii) It offers tools to achieve much better, updates for future-compensating transactions.

2.1.2 Interface Layers

Q4. Explain in detail about Interface support layer ?

Ans : **(June-19)**

The third layer, interface and support services, will provide interfaces for electronic commerce applications such as interactive catalogues and will sup-port directory services-functions necessary for information search and access. These two concepts are very different.

- Interactive catalogs are the customized interface to consumer applications such as home shopping.
- An interactive catalog is an extension of the paper-based catalog and incorporates additional features such as sophisticated graphics and video to make the advertising more attractive.

- Directories, on the other hand, operate behind the scenes and attempt to organize the enormous amount of information and transactions generated to facilitate electronic commerce.
- Directory services databases make data from any server appear as a local file. In the case of electronic commerce, directories would play an important role in information management functions.
- The primary difference between the two is that unlike interactive catalogs, which deal with people, directory support services interact directly with soft-ware applications.
- For this reason, they need not have the multimedia glitter and jazz generally associated with interactive catalogs. From a computing perspective, we can expect that there will be no one common user interface that will glaze the surface of all electronic commerce applications, but graphics and object manipulation will definitely predominated.
- Tool developers and designers might incorporate common tools for interface building, but the shape of catalogs or directories will depend on the users' desires and functional requirements.

2.1.3 Secure Messaging

Q5. Explain in detail about Secure Messaging and Structure document interchange services ?

Ans : **June-19)**

Secure Messaging and Structured Document Interchange Services

Electronic messaging is a critical business issue. Consider a familiar business scenario:

In Integrated Messaging: a group of computer services that through the use of a network send, receive, and combine messages, faxes, and large data files. Some better-known examples are electronic mail, enhanced fax, and electronic data interchange. Broadly defined, messaging is the software that sits between the network infrastructure and the clients or electronic commerce applications, masking the peculiarities of the environment. Others define messaging as a frame-work for the total implementation of portable applications, divorcing you from the architectural primitives of your system. In general, messaging products are not applications that solve problems; they are more enablers of the applications that solve problems. Messaging services offer solutions for communicating non formatted (unstructured) data-letters, memos, reports as weft as formatted (structured) data such as purchase orders, shipping notices, and invoices. Unstructured messaging consists of fax, e-mail, and form-based systems like Lotus Notes. Structured documents messaging consist of the automated interchange of standardized and approved messages between computer applications, via telecommunication Another advantage of messaging is that it is not associated with any particular communication protocol. No pre-processing is necessary, although there is an increasing need for programs to interpret the message. Messaging is well suited for both client server and peer-to-peer computing models. In distributed systems, the messages are treated as "objects" that pass between systems. Messaging is central to work-group computing that is changing the way businesses operate. The ability to access the right information at the right time across diverse work groups is a challenge. Today, with the messaging tools, people can communicate and work together more effectively-no matter where they are located.

The main disadvantages of messaging are the new types of applications it enables-which appear to be more complex, especially to traditional programmers and the jungle of standards it involves. Because of the lack of standards, there is often no interoperability between different messaging vendors leading to islands of messaging. Also, security, privacy, and confidentiality through data encryption and authentication techniques are important issues that need to be resolved for ensuring the legality of the message-based transactions themselves.

2.1.4 Middleware Services

Q6. Explain briefly about Middleware Services.

Ans : **(June-19)**

The integration of different applications, networks within and between businesses is made possible with middleware services. It is a general term used for software that serves to "work together" separate, often complex and already existing programmes.

Middleware is a relatively new concept that emerged only recently. Users in the 1970s, when vendors, delivered homogeneous over the years, there developed the need to solve all the interface, translation, transformation, and interpretation problems that were driving application developers crazy. With the growth of networks, client-server technology, and all other forms of communicating between/among unlike platforms, the problems of getting all the pieces to work together grew from formidable to horrendous.

As the need for distributed computing spread, users demanded interaction between dissimilar systems, networks that permitted shared resources and applications that could be accessed by multiple software programmes. Middleware is the ultimate mediator between diverse software programmes that enables them talk to one another. Another reason for middleware is the computing shift from application centric to data centric i.e. remote data controls all of the applications in the network instead of applications controlling data. To achieve data-centric computing, middleware services focus on three elements:

(i) Transparency

(ii) Transaction security and management

(iii) Distributed object management and services.

(i) Transparency

Transparency implies that users should be unaware that they are accessing multiple systems. Transparency is essential for dealing with higher level issues than physical media interconnections that the underlying network infrastructure is in charge of. Transparency is accomplished using middleware that facilitates a distributed computing environment. This gives users and applications transparent access to data, computation and other resources across collection of multi-vendor heterogeneous systems.

(ii) Transaction security management

The two broad categories of security management services for transaction processing are (a) Authentication (b) Authorisation. Transaction integrity must be given for business that cannot afford any loss or inconsistency in data. For E-Commerce, middleware provides qualities expected in a standard transaction processing (T.P) system i.e. the so-called ACID (Atomicity, consistency, isolation, Durability) properties.

(iii) Distributed Object Management

Object orientation is proving fundamental to the proliferation of network based application for the following reasons. It is hard to write a network based application without either extensive developer retaining or technology that adopts the difficulties of the network. Objects are defined as combination of data and instructions acting on the data. Objects are an evolution of more traditional programming concept of functions and procedures. A natural instance of an object in E-Commerce is a document. A document/ parries data and often carries instructions about the action to be performed on the data.

Q7. What are the different middleware services?

Ans :

Documents of Middle Ware Services

The different documents of middleware services are.

1. Structured documents
2. Compound documents.

1. Structured Document

This type of digital documents are more flexible than the image documents. The reason is, they focus on different document formats like audio, video etc.

Apart from this, structured documents have a solution for documents whose content is too long and difficult to understand. Structured documents use a technique called Table of Contents (TOC). It categorizes the book into various chapters, subtopics of the chapters, along with their page numbers. This makes searching of particular information easy. Similar procedure is followed for different document formats.

Standards

Different standards used in structured document are,

(i) SGML

(ii) HTML.

(i) SGML: The full form of SGML is Standard Generalized Markup Language. This standard is only used for text based documents because.

- It defines how these documents can be transmitted properly.
- It defines how text based documents can be formatted more than once.

In addition to this, SGML, also describes the structure of text documents. This standard was developed by ISO (International Standards Organization).

(ii) HTML: HTML stands for Hypertext Markup Language. This standard was created under W3C consortium. HTML standard is mainly used for documents like hypertext, multimedia etc.

2. Compound Documents

Compound documents consist of data structures that include data types like text, audio and video. This document is a collection of user interfaces. This interface helps in creating single integrated perceptual environment. Compound documents also create application environment by defining program object so as to interlink and interact with users.

Standards

Different standards used in compound documents are,

(i) Object Linking and Embedding (OLE)

(ii) OPEN DOC.

(i) Object Linking and Embedding (OLE): OLE is a technology that integrates several applications and multimedia data types within an active document framework. It was developed on top of DDE which is a technique of Interprocess Communications (1PC). Here various applications are allowed to interact with each other during execution. But, the links between applications were found to be easily disconnected while moving a file or updating application software, due to DDE fragility.

(ii) OPEN DOC: OpenDoc contains document parts as its basic building blocks. Here, each document part comprises of data. The data can be,

- Text containing characters.
- Graphics containing lines and shapes.
- Spreadsheet containing spread sheet cells with formulas.
- Multimedia containing digitized videos.

2.1.5 Network Infrastructure

Q8. Explain briefly about Network Infrastructure.

Ans :

E-Commerce requires reliable network infrastructure to move the information and execute the transactions in a distributed environment. Global information distribution networks are the infrastructures that are connecting countries and continents. The main components of these networks are Extranets, Intranets, wireless networks, Radio networks and the Internet. The construction of reliable network infrastructure requires hardware components like hubs, switches and routers etc. The coaxial cables, fibre optical cables, radio and satellite based transmission mechanisms are some modes utilized for the physical transmission of the data over the network.

2.2 SITE SECURITY

Q9. Discuss briefly about Site Security.

Ans : **(Oct.20)**

Web security services ensure reliable and secure electronic transmission or communication. There may be several web security issues. The major security issues faced by e-commerce site are,

1. Auditing

According to e-commerce, it refers to the process of gathering information about usage of privileges, accessing of specific resources, performing of security actions etc. It helps in re-development of particular actions taken and also lets the IT personnel to determine the actions performed by the person or program.

2. Authentication

The process wherein two entities can verify each other to know that they are the only users who claim to be called authentication. This ensures different types of users that their transaction or data will be secured.

In e-commerce content, it ensures the web page viewer that the site is not fraudulent and the sender is a correct person etc. It is carried out through some types of credentials like, password, smart card and signature.

3. Authorization

It is the process of ensuring a person or a program that they have right to access particular resources. It is determined by comparing access control information associated with the resource being accessed with a person or a program information.

4. Confidentiality

Confidentiality refers to the process of protecting the data being transmitted, from all types of passive-attacks. In case of the release of message contents, higher levels of protection can be provided. All the data which is transmitting between the two systems for some specific period of time can be protected in case of broader forms of this service. For example, in case of virtual connection between the two systems, any user data is prevented from its release over the virtual circuit. Confidentiality can also be applied in a narrower form which protects a single message or some fields within the message but this approach is more complex and expensive to implement.

5. Non-repudiation

This provides protection against the denial by one of the entities involved in communication. Thus, once a message is sent, the receiver assures that the message was sent by an intended sender and upon reception, the sender assures that the message is received by the correct receiver.

6. Availability

The availability can be significantly affected by a variety of attacks which are susceptible to authentication, encryption, etc., whereas some attacks require physical action for preventing and recovering from the loss of availability.

7. Integrity

Integrity can be applied to a single message within a stream or to an entire stream. It can also be applied to some specific fields within a message. Two types of integrity services are available,

(i) Connection-oriented integrity service

(ii) Connectionless integrity service.

A connection-oriented integrity service is concerned with the message streams. It ensures that the messages are received in the order in which they are sent with no alterations, insertions, deletions, duplications, reordering or replays. It also deals with the destruction of data. Hence, it attends to both message-stream modification and denial of service.

A connectionless integrity service tackles only the individual messages irrespective of any context thereby providing protection against the message alterations only.

An integrity service can be applied with or without recovery. As these services are related to active-attacks, the major concern is to detect them rather than preventing them. If the integrity is violated and detected, then the service must simply notify its violation and find out the ways of recovering from it.

2.2.1 Firewalls

Q10. Define Firewalls.

Ans :

Firewalls are computer security systems that protect your computer or your network from intruders, hackers & malicious code. Firewall ensures that uninvited guests cannot access your network. By the help of a firewall, you can determine rules for which type of traffic can come in and go out of your private network.

Firewall enables you to:

- To block some TCP/IP ports to restrict a specific type of traffic; and
- Restrict access to limited domain names and IP addresses by using certain types of firewall

Firewall protects your computer from all kinds of abuse & unauthorized access like Trojans that allow taking control of your computers by remote logins or backdoors.

Some of the firewall products that you may want to check out are:

- McAfee Internet Security
- Microsoft Windows Firewall
- Norton Personal Firewall
- Trend Micro PC-Cillin

Q11. Classify the different types of Firewalls.

Ans :

There are different types of firewalls depending on where the communication is taking place, where the communication is intercepted and the state that is being traced.

i) Network layer Firewall

ii) Application layer firewall

iii) Proxy server

iv) Network address translation

i) Network layer Firewall

Network layer firewalls, also called packet filters, operate at a relatively low level of the TCP/IP protocol stack, not allowing packets to pass through the firewall unless they match the established rule set. The firewall administrator may define the rules; or default rules may apply.

Network layer firewalls generally fall into two sub-categories,

a) Stateful Firewalls

b) Stateless Firewalls

a) Stateful Firewalls

Stateful firewalls maintain context about active sessions, and use that "state information" to speed packet processing. Any existing network connection can be described by several properties, including source and destination IP address, UDP or TCP ports, and the current stage of the connection's lifetime (including session initiation, handshaking, data transfer, or completion connection). If a packet does not match an existing connection, it will be evaluated according to the rule set for new connections. If a packet matches an existing connection based on comparison with the firewall's state table, it will be allowed to pass without further processing.

b) Stateless Firewalls

Stateless firewalls require less memory, and can be faster for simple filters that require less time to filter than to look up a session. They may also be necessary for filtering stateless network protocols that have no concept of a session. However, they cannot make more complex decisions based on what stage communications between hosts have reached.

ii) Application Layer Firewall

Application-layer firewalls work on the application level of the TCP/IP stack (i.e., all browser traffic, or all telnet or ftp traffic), and may intercept all packets traveling to or from an application. They block other packets (usually dropping them without acknowledgment to the sender).

On inspecting all packets for improper content, firewalls can restrict or prevent

outright the spread of networked computer worms and Trojans. The additional inspection criteria can add extra latency to the forwarding of packets to their destination.

Application firewalls function by determining whether a process should accept any given connection. Application firewalls accomplish their function by hooking into socket calls to filter the connections between the application layer and the lower layers of the OSI model. Application firewalls that hook into socket calls are also referred to as socket filters.

Application firewalls work much like a packet filter but application filters apply filtering rules (allow/block) on a per process basis instead of filtering connections on a per port basis. Generally, prompts are used to define rules for processes that have not yet received a connection. It is rare to find application firewalls not combined or used in conjunction with a packet filter. Also, application firewalls further filter connections by examining the process ID of data packets against a ruleset for the local process involved in the data transmission.

The extent of the filtering that occurs is defined by the provided ruleset. Given the variety of software that exists, application firewalls only have more complex rulesets for the standard services, such as sharing services. These per process rulesets have limited efficacy in filtering every possible association that may occur with other processes.

iii) Proxy server

A proxy server running either on dedicated hardware or as software on a general-purpose machine may act as a firewall by responding to input packets (connection requests, for example) in the manner of an application, while blocking other packets. A proxy server is a gateway from one network to another for a specific network application, in the sense that it functions as a proxy on behalf of the network user.

Proxies make tampering with an internal system from the external network more difficult and misuse of one internal system would not necessarily cause a security breach exploitable from outside the firewall. Conversely, intruders may hijack a publicly reachable system and use it as a proxy for their own purposes; the proxy then masquerades as that system to other internal machines. While use of internal address spaces enhances security, crackers may still employ methods such as IP spoofing to attempt to pass packets to a target network.

iv) Network Address Translation

Firewalls often have network address translation (NAT) functionality, and the hosts protected behind a firewall commonly have addresses in the "private address range", as defined in RFC 1918.

Firewalls often have such functionality to hide the true address of protected hosts. Originally, the NAT function was developed to address the limited number of IPv4 routable addresses that could be used or assigned to companies or individuals as well as reduce both the amount and therefore cost of obtaining enough public addresses for every computer in an organization. Hiding the addresses of protected devices has become an increasingly important defense against network reconnaissance.

Q12. Explain the limitations of firewalls.

Ans :

1. Sometimes, the authorized users use their granted access permissions for doing malicious operations. In such situations, the firewall stops functioning properly hence, cannot protect the network from such type of attacks.
2. Firewalls cannot fix the problems related to poorly designed security features.
3. Firewalls cannot prevent the attacks made on those packets that do not pass through them.
4. Firewall reduces its effectiveness if permissive rules (easy going) are frequently used during its configuration.

5. Firewall cannot stop the attacks made against the authorized networks when the network itself is insecure or faulty.
6. It is impossible for the firewalls to scan the malicious code like incoming messages, attachment files etc. There are various operating systems and applications present in the internal boundary network.
7. When an internal user unknowingly interacts with an external attacker, then firewall does not protect the internal network against the threats of an external network.
8. When the firewalls are configured incorrectly, they may block the incoming authorized users from accessing the network resources. This may result in huge losses.
9. Huge costs are incurred in firewall installations.

2.2.2 Network Security

Q13. Define Network Security. Explain the need for Network Security.

Ans :

Network security refers to the plans or arrangements made ip the network infrastructure along with the various techniques used by the network administrator. This is done for protecting network and its resources from unauthorized access. As a result, the distributed systems were introduced that provide various networks and communication facilities for transmitting data between two computers or between a terminal user and a computer.

Need for Network Security

Network security is needed for the following reasons,

1. It is basically needed to secure the network from at-tackers and hackers.
2. It is needed to eliminate transmission delays.
3. It is needed to perform secure information transfer by eliminating unwanted editings.
4. It is needed to protect organization assets.
5. It is needed to protect the data from unintentionally or intentionally accessed by unauthorized users.
6. It protects the network against passive and active attacks.
7. It is also required to prevent data from getting misused.
8. It is also required to recover the system from failures and data losses by applying various policies and pro-cedures.
9. It is also required to protect the data from threats which occur due to change technology infrastructure.
10. It is also required to avoid modification, exploitation and refusal of the network and resources.
11. It is also required to deliver accurate data to its destination.
12. It is also required to protect the data against cyber-crime.

2.3 PROTOCOLS

Q14. Define the term Protocol.

Ans :

A protocol is a set of rules and guidelines for communicating data between two entities in the network. These rules are clearly defined for each step and process during communication between two or more nodes. Networks have to follow these rules to successfully transmit data. Network protocols govern the end-to-end processes of timely, secure and managed data or network communication. In order for computers to exchange information in a network, there must be a preexisting agreement as to how the information will be structured and how each side will send and receive it.

Network protocols include mechanisms for devices to identify and make connections with each other, as well as formatting rules that specify how data is packaged into messages sent and received. Some protocols also support message acknowledgment and data compression designed for reliable and high performance network communication.

The protocol around which the Internet was designed includes a series of design principles.

1. Inter-Operability

The system supports computers and softwares manufactured by different vendors. For E-Commerce, this means the customers or businesses are not required to buy specific systems in order to conduct business.

2. Layered

The collection of internet protocols works in layers, where each layer performs different work to communicate between two nodes (computers).

3. Simple

Each of the layers in the layered architecture provides only few functions or operations. This means that application programs are hidden from the complexity of the underlying hardware.

4. End to End

The internet is based on end to end protocols. This means that the interpre-tation of the data happened at the application layer (i.e., the sending and receiving side) and not at the network layers.

Modem protocols for computer networking all generally use packet switching technology to send and receive messages in a network. Packet switching technology allows data to send and receive in the form of packets. Information is divided into pieces (Packets) at the origin and these packets are collected and re-assembled at the destination. There are hundreds of different computer network protocols have been developed, each designed for specific purposes and environments.

2.3.1 TCP/IP

Q15. Explain briefly about TCP/IP Protocol.

Ans :

- TCP/IP (Transmission Control Protocol/ Internet Protocol) is the basic communication language or protocol of the Internet.
- This protocol can be used in intranet or extranet.
- TCP/IP is a two-layer program, TCP (higher layer) and IP (lower layer).
- The higher layer, Transmission Control Protocol, manages the assembling of a message or file into smaller packets that are transmitted over the Internet and received by a TCP layer that reassembles the packets into the original message.
- The lower layer, Internet Protocol, handles the address part of each packet so that it gets to the right destination.
- TCP/IP uses the client/server model of communication in which a computer user (a client) requests and is provided a service (such as sending a Web page) by another computer (a server) in the network.
- TCP/IP communication is primarily point-to-point, meaning each communication is from one point (or host computer) in the network to another point or host computer.
- TCP provides reliable, ordered, error-checked delivery of a stream of octets between programs running on computers connected to a local area network, intranet or the public Internet. It resides at the transport layer.
- Web browsers use TCP when they connect to servers on the World Wide Web, and it is used to deliver email and transfer files from one location to another.
- The TCP/IP suite of protocols is the set of protocols used to communicate across the internet. It is also widely used on many organizational networks due to its flexibility and wide array of functionality provided.

Benefits of using TCP/IP Protocol

- It is an industry standard most common internetworking protocol.
- It supports almost all networking operating system.
- It is suitable for small as well as large networks.
- It optimizes network traffic over interconnected network segments.
- It ensures data reliability.
- It offers fault tolerance.
- Web browsers use TCP/IP when they connect to servers on the World Wide Web.

2.3.2 HTTP

Q16. Explain in detail about hyper text transfer protocol?

Ans : **(Oct-19)**

Hyper Text Transfer Protocol (HTTP)

HTTP is a communication protocol. It defines mechanism for communication between browser and the web server. It is also called request and response protocol because the communication between browser and server takes place in request and response pairs.

HTTP Request

HTTP request comprises of lines which contains:

- Request line
- Header Fields
- Message body

Key Points

- The first line i.e. the Request line specifies the request method i.e. Get or Post.
- The second line specifies the header which indicates the domain name of the server from where index.htm is retrieved.

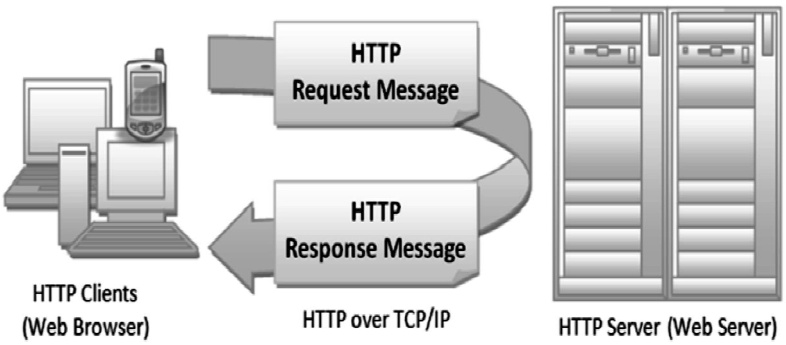
HTTP Response

Like HTTP request, HTTP response also has certain structure. HTTP response contains:

- Status line
- Headers
- Message body

HTTP (Hypertext Transfer Protocol) is perhaps the most popular application protocol used in the Internet (or The WEB).

- HTTP is an asymmetric request-response client-server protocol as illustrated. An HTTP client sends a request message to an HTTP server. The server, in turn, returns a response message. In other words, HTTP is a pull protocol, the client pulls information from the server (instead of server pushes information down to the client).

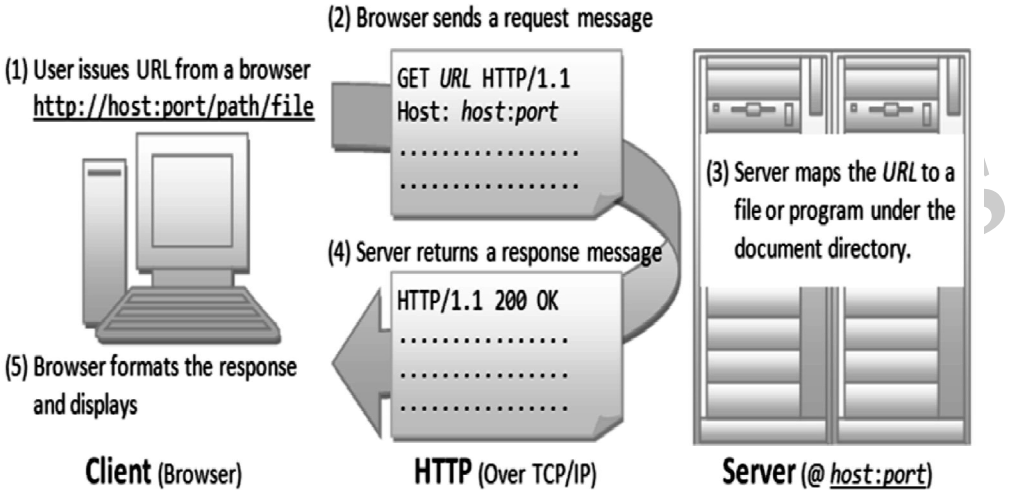


- HTTP is a stateless protocol. In other words, the current request does not know what has been done in the previous requests.
- HTTP permits negotiating of data type and representation, so as to allow systems to be built independently of the data being transferred.

- Quoting from the RFC2616: "The Hypertext Transfer Protocol (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information systems. It is a generic, stateless, protocol which can be used for many tasks beyond its use for hypertext, such as name servers and distributed object management systems, through extension of its request methods, error codes and headers."

Browser

Whenever you issue a URL from your browser to get a web resource using HTTP, e.g. http://www.nowhere123.com/index.html, the browser turns the URL into a request message and sends it to the HTTP server. The HTTP server interprets the request message, and returns you an appropriate response message, which is either the resource you requested or an error message. This process is illustrated below:



Uniform Resource Locator (URL)

A URL (Uniform Resource Locator) is used to uniquely identify a resource over the web. URL has the following syntax:

protocol://hostname:port/path-and-file-name

There are 4 parts in a URL:

1. **Protocol:** The application-level protocol used by the client and server, e.g., HTTP, FTP, and telnet.
2. **Hostname:** The DNS domain name (e.g., www.nowhere123.com) or IP address (e.g., 192.128.1.2) of the server.
3. **Port:** The TCP port number that the server is listening for incoming requests from the clients.
4. **Path-and-file-name:** The name and location of the requested resource, under the server document base directory.

2.3.3 Secured HTTP

Q17. Describe briefly about Secured HTTP.

Ans : **(Oct-19)**

Secured Hyper Text Transfer Protocol (SHTTP) is a web protocol developed by Netscape. It is used for secure communication over a computer network, with especially wide deployment on the Internet. It is also referred as Hypertext Transfer Protocol Secure HTTPS).

- It is built into browser to encrypt and decrypt user page requests as well as the pages that are returned by the web server.
- It is a secure version of the Hyper Text Transfer Protocol (http) which allows secure ecommerce transactions, such as online banking. It can be considered as secure HTTP connection.
- It is a secure method of accessing or sending information across a web page.
- All data sent over S-HTTP is encrypted before it is sent, this prevents anyone from understanding that information if intercepted.
- S-HTTP uses port 443 to transfer its information.
- S-HTTP is first used in HTTP/1.1 and is defined in RFC 2616.
- It is generally used for securing login information or with pages that contain sensitive information such as an online bank web page.
- When a user connects to a website via S-HTTP, the website encrypts the session with a Digital Certificate.
- A user is connected to a secure website if the website URL begins with https:// domain.
- It adds the security capabilities of SSL/TLS to standard HTTP communications.
- The main purpose for S-HTTP is to prevent wiretapping, eavesdropping and man- in-the-middle attacks.
- It is widely used for securing sensitive information, such as social security numbers, credit card numbers, money transaction online or bill pay sites.
- The S-HTTP makes hackers unable to intercept the message containing sensitive data as it heads to the server.

2.3.4 SMTP

Q18. Define the term SMTP.

Ans : **(Oct-19)**

SMTP is a simple ASCII protocol. After establishing the TCP connection to port 25, the sending machine, operating as the client, waits for the receiving machine, operating as the server, to respond.

The server starts by sending a line of text giving its identity and telling whether or not it is prepared to receive mail. If it is not, the client releases the connection and try again later. If the server is willing to accept e-mail, the client announces from whom the e-mail is coming and to whom it is going. If such a recipient exists at the destination, the server gives the client the go-ahead message. Then the client sends the message and the server acknowledges it. Checksums are generally not needed because TCP provides a reliable byte-stream.

When all the e-mails have been exchanged in both directions, the connection is released. The exchange of mail using TCP/IP is performed by a Message Transfer Agent (MTA). Users normally do not deal with MTA. The system administrator is responsible to set-up the local MTA.

The SMTP protocol describes how two MTAs communicate with each other using a single TCP connection. The SMTP standard is one of the most widely used upper layer protocols in the Internet Protocol Stack. As its name implies, it is a protocol that defines how to transmit messages (mail) between two users.

SMTP uses the concept of spooling. The idea of spooling is to allow mail to be sent from a local application to the SMTP application, which stores the mail in some device or memory. Once the mail has arrived at the spool, it will been queued.

A server checks to see if any messages are available and then attempts to deliver them. If the user is not available for delivery, the server may try later. Eventually, if the mail cannot be delivered, it will be discarded or perhaps returned to the sender. This is known as an end-to-end delivery system, because the server is attempting to contact the destination to deliver and it will keep the mail if the spool for a period of time until it has been delivered.

2.3.5 SSL

Q19. Define the term SSL. Explain the advantages of SSL.

Ans :

Secure Socket Layer (SSL)

Secure socket layer is a protocol developed by Netscape communication to ensure the security of data transmission over the internet. SSL has been universally accepted as a provider of secure data communication between web browser (client) and web server through HTTP, LADP or POP3 application layers. SSL runs on top of TCP and FTP layers to enable services for the application layer. These services help higher layer protocols such as HTTP, LDAP or IMAP to use SSL functionality. The purpose of SSL design is to use TCP as a communication layer to provide a reliable end-to-end secure and authenticated connection between two points over a network.

Advantages of SSL

1. **Integrity**

   SSL ensures the correctness of data being passed between the client and server on a network.

2. **Confidentiality**

   It ensures that the SSL response being transferred between the client and server on a network is secured by encryption in order to avoid deciphering by a third party.

3. **Authentication**

   The server provides a set of credentials like username/ password to the browser in the form of a server certificate. Thus, this certificate-is used to verify for the authenticity of the server.

Q20. What are the objectives of SSL.

Ans :

- **Authenticating the client and server to each other**

  The SSL protocol supports the use of standard key cryptographic techniques (public key encryption) to authenticate the communicating parties to each other. Though the most frequent application consists in authenticating the service client on the basis of a certificate, SSL may also use the same methods to authenticate the client.

- **Ensuring data integrity**

  During a session, data cannot be either intentionally or unintentionally tampered with.

- **Securing data privacy**

  Data in transport between the client and the server must be protected from interception and be readable only by the intended recipient. This prerequisite is necessary for both the data associated with the protocol itself (securing traffic during negotiations) and the application data that is sent during the session itself. SSL is in fact not a single protocol but rather a set of protocols that can additionally be further divided in two layers:

  1. The protocol to ensure data security and integrity: this layer is composed of the SSL Record Protocol,
  2. The protocols that are designed to establish an SSL connection: three protocols are used in this layer: the SSL Handshake Protocol, the SSL Change Cipher Spec Pprotocol and the SSL Alert Protocol.

2.4 DATA ENCRYPTION

2.4.1 Cryptography

Q21. Discuss about Cryptography in detail.

Ans : **(June-19)**

Cryptography is a technique of secret writing especially code and cipher systems. It is a method of storing and transmitting data in a particular form so that only those for whom it is intended can read and process it. The term is most often associated with scrambling plaintext (ordinary text, sometimes referred to as cleartext) into ciphertext (a process called encryption), then back again (known as decryption).

The main objectives of cryptography are:

(a) Confidentiality

To ensure that the information is not read by anyone for whom it was unintended and is read only by authorized parties.

(b) Integrity

To ensure that the information wasn't altered in storage or transit between sender and intended receiver.

(c) Non-repudiation

To ensure that the sender of the information cannot deny at a later stage his or her intentions in the creation or transmission of the information.

(d) Authentication

To ensure that the sender and receiver can confirm each others identity and the origin/ destination of the information.

As the Internet and other forms of electronic communication become more prevalent, electronic security is becoming increasingly important. Cryptography is used to protect e- mail messages, credit card information, and corporate data.

There are two basic types of cryptographic systems:

1. Public Key Cryptography (or "Asym-metric")
2. Private Key Cryptography (or "Sym-metric").

Q22. Classify different cryptographic attacks.

Ans : **(Oct-19)**

Classification of Cryptographic Attacks

Cryptographic attacks can be classified into two types. They are,

1. Cryptanalytic attacks
2. Non-cryptanalytic attacks.

1. Cryptanalytic Attack

This attack can be referred as a group of statistical and algebraic techniques. It exploits the mathematical features to capture the secret key. They focus on the distinguishes that exist in the output distribution of algorithms. The main role of this attack is to determine the cipher properties which are not found in random function. This scenario is generally referred to as "distinguishes". Typically all attacks are called as distinguishes. Now the attacker estimates or guesses the key and searches the distinguishing property. An attack can be considered as correct if the guessed key matches any of the distinguishes. If not, it is considered as incorrect and the hacking is continued.

To minimize the complexity of guessing, divide and conquer method is used. This method is used in the brute force search method to generate efficient results.

2. Non-cryptographic Attacks

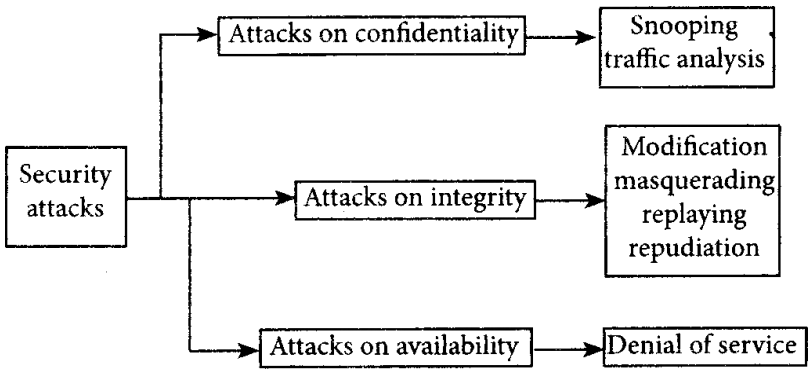
Non-cryptographic attacks focus on the three major goals of security. These goals include,

(i) Confidentiality

(ii) Integrity

(iii) Availability

Different attacks can be calssified based on these three goals as follows,



(i) Attacks on Confidentiality

The attacks that come under this category are snooping and traffic analysis.

(a) Snooping: Snooping is the process of accessing the confidential information in an unauthorized way. Interrupting the transmission and accessing the confidentential data over the internet is an example of snooping. Different encryption mechanisms can be applied on the information to avoid snooping attack.

(b) Traffic Analysis: Capturing the information such as sender's or receiver's e-mail address by tracking the traffic is referred to as traffic analysis attack.

(ii) Attacks on Integrity

The attacks that come under this category are,

(a) Modification

(b) Masquerading

(c) Replaying

(d) Repudiation

(a) Modification: Modification refers to the alteration of a specific portion of authorized information. It also refers to the deletion or reordering of information to generate an unauthorized effect. An example for this type of attack is changing the account number of banking transaction.

(b) Masquerading: Masquerading refers to the attack in which the attacker pretend to be some other person (authorized). Consider an example where an attacker obtains customer ID and password of an online banking user. The obtained credentials can be used by the attacker to pretend like the authorized user. Such an attack is referred to as masquerading.

(c) Replaying: Replaying refers to the process of capturing a particular information and retransmitting or resending it later for causing an unauthorized effect. An example of such an attack is replaying an already completed transaction.

(d) Repudiation: Repudiation refers to the attack in which either sender (or) receiver denies the action it performed. For example, receiver already received the message but denies.

(iii) Attacks on Availability

The attack that can be made on availability is Denial of Service (DOS).

Denial of Service

This type of attack interrupts the normal usage of various facilities provided by system (or) network. It attacks a specific target so that the messages destined to it can be destroyed. In some other situations, the attacker sends messages continuously until the system (or) network becomes unavailable. Also, the attacker can crash down the server by sending bogus messages.

All these attacks can also be categorized into passive and active attacks. Attacks on confidentiality i.e., snooping and traffic analysis falls under passive attacks. All the other attacks belong to the category of active attacks.

(i) Passive Attacks

It refers to the process of monitoring or wiretapping of ongoing transmission. Here, the goal of opponent is to capture the transmitting information but not to alter (or) harm the system. These types of attacks can be easily avoided by using encryption techniques.

(ii) Active Attacks

In this types of attacks, attacker can alter the information (or) include some fraudulent information into the network. These attacks harm the system and can easily be detected. However, they are difficult to prevent.

2.4.2 Encryption

2.4.2.1 Public Key, Private Key

Q23. Define Encryption. Explain the techniques of Encryption

Ans :

Encryption is the process in which a sender converts the original information to another form and sends the resulting unintelligible message out over the network. The sender requires an encryption algorithm and a key to transform the plaintext (original message) into a cipher text (encrypted message), it's also known as enciphering.

Plaintext is the data that need to be protected during transmission. The cipher text is the scrambled text produced as an outcome of the encryption algorithm for which a specific key is used. The cipher text is not shielded. It flows on the transmission channel. The encryption algorithm is a cryptographic algorithm that inputs plain text and an encryption key and produces a cipher text.

The keys used for encryption and decryption could be same or different depending on the type of cryptosystems used. They are,

1. Symmetric key encryption
2. Asymmetric key encryption

1. Symmetric Encryption

A simplest kind of encryption that uses only one secret key to encrypt and decrypt information. Symmetrical encryption is a conventional and best-known technique. It employs a secret key that can either be a number, a word or a string of random letters. It is a blended with the plain text of a message to change the content in a particular way. The sender and the recipient should know the secret key that is used to encrypt and decrypt all the messages.

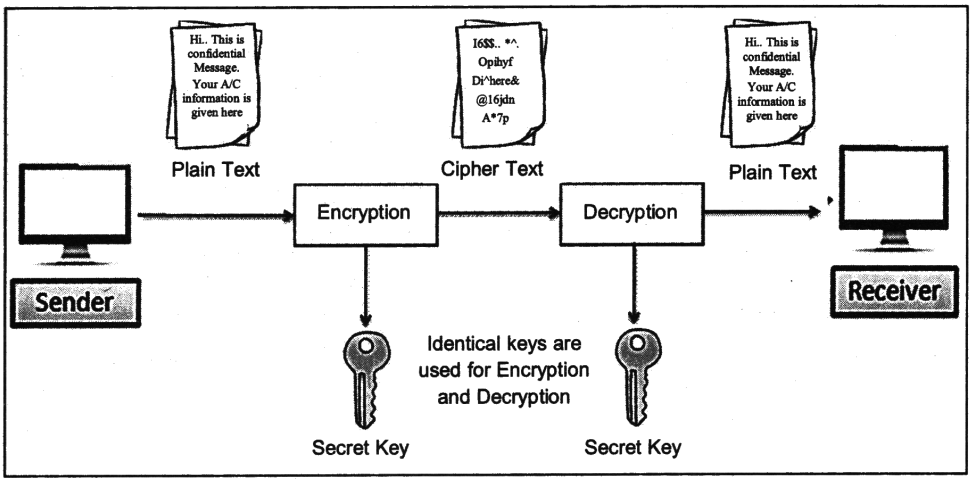


Figure: Symmetric Encryption

➢ Data Encryption Standard (DES)

The Data Encryption Standard (DES) is a symmetric-key method of data encryption. DES works by using the same key to encrypt and decrypt a message, so both the sender and the receiver must know and use the same private key. DES was originally designed by researchers at IBM in the early 1970s, and adopted by the U.S. government as an official Federal Information Processing Standard (FIPS) in 1977 for the encryption of commercial and sensitive computer data. It was the first encryption algorithm approved by the U.S. government for public disclosure.

➢ Triple DES Encryption

Triple DES is the common name for the Triple Data Encryption Algorithm (TDEA). The strength of DES encryption is generally thought to be increased by using triple encryption. The best way to conduct triple encryption is by using 3 different secret keys. The process requires that both sender and receiver maintain 3 separate secret keys. If any one of the keys is lost, the cipher text is irretrievable.

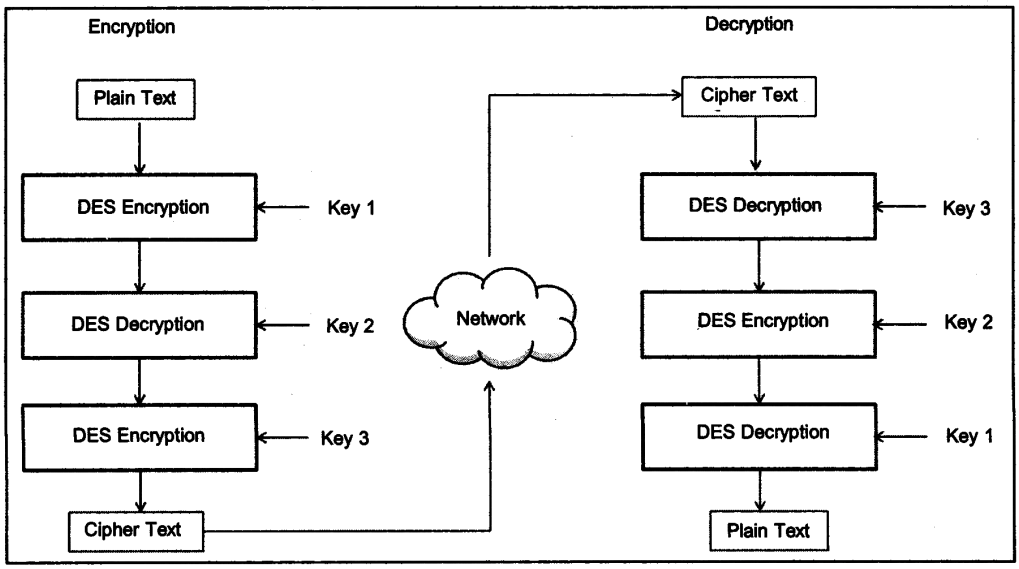


Figure: Triple DES Encryption

➢ **Advanced Encryption Standard (AES)**

The more popular and widely adopted symmetric encryption algorithm likely to be encountered nowadays is the Advanced Encryption Standard (AES). It is found at least six times faster than triple DES. A replacement for DES was needed as its key size was too small.

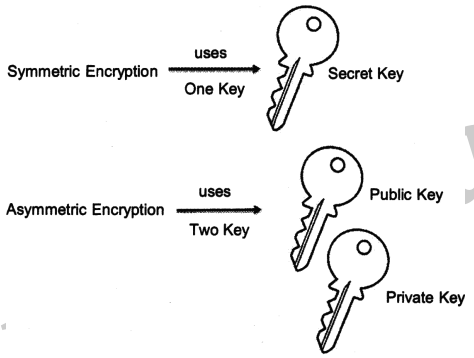
➢ **Skip Jack**

The National Security Agency (NSA) designed a stronger encryption algorithm called Skip Jack, which is much stronger than DES since it employs an 80 bit key. In Skip Jack instead of scrambling the data 16 times, this algorithm scrambles the key data 32 times to provide more security for data transactions. The lack of details about this algorithm impacted on its commercial success.

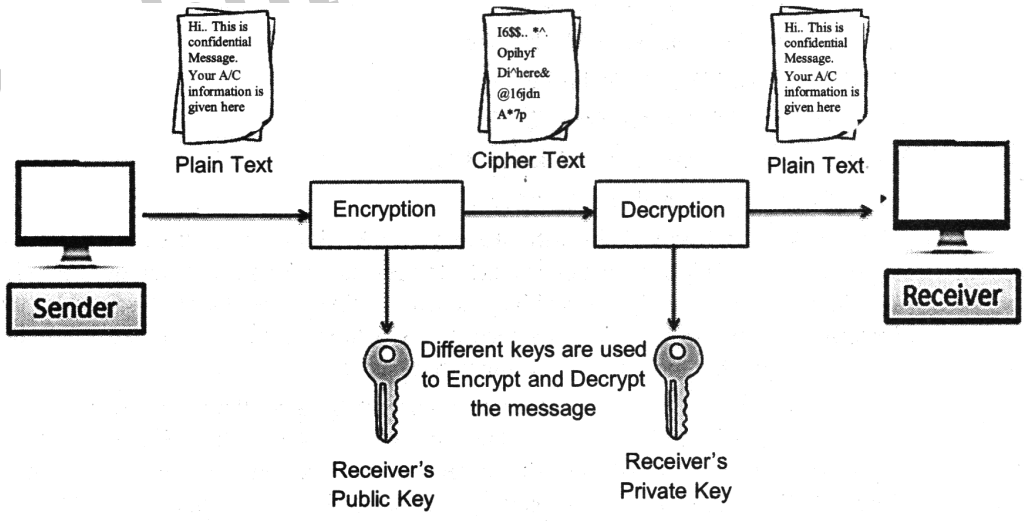
➢ **RC2, RC4 and RC5**

Some alternative encryption algorithms are developed to overcome the security limitations of DES are RC2, RC4 and RC5. These algorithms are developed by RSA data security systems and which are the creation of Ronald Rivest. RC2 and RC5 are block cipher algorithms and RC4 is a stream cipher. All three algorithms have variable key lengths ranging from 32-128 bits.

2. Asymmetric Encryption



Figure



Figure

Asymmetric encryption, also known as public key encryption is quite the opposite to the symmetric encryption as it uses not one key but a pair of keys: a private one and a public one. The keys are simply large numbers that have been paired together but are not identical (asymmetric). One key in the pair can be shared with everyone; it is called the public key. The other key in the pair is kept secret; it is called the

private key. Either of the keys can be used to encrypt a message; the opposite key from the one used to encrypt the message is used for decryption. RSA (Rivest-Shamir-Adleman) and Diffie- Heilman are the most widely used asymmetric algorithms on which many protocols like S/MIME and SSL/TLS rely to encrypt the confidential data.

2.4.3 Decryption

Q24. Define decryption?

Ans :

Decryption is the process of taking encoded or encrypted text or other data and converting it back into text that you or the computer can read and understand. This term could be used to describe a method of un-encrypting the data manually or with un-encrypting the data using the proper codes or keys.

Data may be encrypted to make it difficult for someone to steal the information. Some companies also encrypt data for general protection of company data and trade secrets. If this data needs to be viewable, it may require decryption. If a decryption passcode or key is not available, special software may be needed to decrypt the data using algorithms to crack the decryption and make the data readable.

2.4.4 Digital Signatures

Q25. Define Digital Signature. What are the advantages of Digital Signature?

Ans :

A digital signature is basically a way to ensure the authenticity and integrity of an electronic document. The document can be an e-mail, spreadsheet, pdf or text file. Authenticity means that the receiver of the document knows who created the document. Integrity means the document has not been changed in any way since that person created it. If the document gets altered during the sending process, then the receiver will be able to know there has been an alteration.

Digital signatures rely on public key encryption or asymmetric encryption to ensure authentication. Encryption is the process of converting the readable form of data in to unreadable form to prevent unauthorised access. Authentication is the process of verifying that information is coming from a trusted source. These two processes work together for digital signatures.

Advantages of Digital Signatures

Digital signatures offer various benefits to all stake holders of business. Some of the benefits are discussed here.

1. Provides Security

Authenticity and security is the main objective of digital signatures. Digital signatures reduce the risk of duplication or alteration of the document itself. Digital signatures ensure that signatures are verified, authentic and legitimate. Signers are provided with PINs, password and codes that can authenticate and verify their identity and approve their signatures. Time stamping provides the date and time of the signature and thus provides a track of the document, minimising any risk of tampering or fraud. Security features embedded in digital signatures ensure that documents have not been altered without authorisation.

2. Gives Legal Validity

The legal recognition of electronic signature has been provided under section 5 of information technology Act 2000. Digital signatures provide authenticity and ensure that the signature is verified. This can stand in any court of law like any other signed paper document. Time stamping and ability to track and easily archive documents improve and simplify audit and compliance. Digital Signature Certificates (DSC) are legally valid in India. Digital Signature Certificates (DSC) are issued by licensed Certifying Authorities under the Ministry of Information Technology, Government of India as per the Information Technology Act.

3. Saves Time and Cost

Business people need not to wait for their partners' physical presence to sign documents. Digital signatures ensure that businesses save on cost and time with documents and contracts signed off with a click of a button. There are huge savings in cost and time especially when the person required to sign is in a geographically different area. Documents can be signed off almost instantly, from anywhere. Many companies also see significant cost savings, with little or no expense in ink, paper, printing, scanning, shipping/delivery or travel expenses.

4. Develops Workflow Efficiency

Digital signatures ensure better efficiency in workflow with lesser delays. Managing and tracking documents are made easier, with lesser effort and time. Many features of the digital signatures help speed up the work process. For instance, email notifications help remind the person to sign, while status tracking, help to know at which stage the document is at.

5. Saves Environment

As corporates and business become more conscious of their role in sustainability, digital signatures is a step ahead in their efforts in reducing waste and being environmental friendly.

Q26. Explain the applications of digital signature.

Ans :

1. Authentication

Although messages may often include information about the entity sending a message, that information may not be accurate. Digital signatures can be used to authenticate the source of messages. When ownership of a digital signature secret key is bound to a specific user, a valid signature shows that the message was sent by that user. The importance of high confidence in sender authenticity is especially obvious in a financial context. For example, suppose a bank's branch office sends instructions to the central office requesting a change in the balance of an account. If the central office is not convinced that such a message is truly sent from an authorized source, acting on such a request could be a grave mistake.

2. Integrity

In many scenarios, the sender and receiver of a message may have a need for confidence that the message has not been altered during transmission. Although encryption hides the contents of a message, it may be possible to change an encrypted message without understanding it. (Some encryption algorithms, known as nonmalleable ones, prevent this, but others do not.) However, if a message is digitally signed, any change in the message after signature invalidates the signature. Furthermore, there is no efficient way to modify a message and its signature to produce a new message with a valid signature, because this is still considered to be computationally infeasible by most cryptographic hash functions (see collision resistance).

3. Non-repudiation

Non-repudiation, or more specifically non-repudiation of origin, is an important aspect of digital signatures. By this property, an entity that has signed some information cannot at a later time deny having signed it. Similarly, access to the public key only does not enable a fraudulent party to fake a valid signature.

2.4.5 Digital Certificates

Q27. Describe briefly about Digital Certificates

Ans :

A digital certificate is an electronic certificate attached to electronic message for security purpose. It allows a person, computer or organization to exchange information securely on the web the public key infrastructure (PKI). A digital certificate ensures that a user sending a message is who he or she claims to be, and to provide the receiver with the means to encode a reply.

A Digital Certificate typically contains:

- Owner's public key
- Owner's name
- Expiration date of the public
- Name of the issuer (the CA that issued the Digital Certificate)
- Serial number of the Digital Certificate
- Digital signature of the issuer

A digital certificate is issued by a certification authority (CA). When a user wants to send an encrypted message, he applies for a digital certificate from a Certificate Authority (CA). The CA issues an encrypted digital certificate containing the applicant's public key and a variety of other identification information. The CA makes its own public key readily available through print publicity or perhaps on the Internet.

The recipient of an encrypted message uses the CA's public key to decode the digital certificate attached to the message, verifies it as issued by the CA and then obtains the sender's public key and identification information held within the certificate. With this information, the recipient can send an encrypted reply. Digital certificates are used with self-signatures and message encryption.

Short Question and Answers

1. Architecture frame work of E-Commerce

Ans :

The software framework necessary for building electronic commerce applications is little understood in existing literature. In general a framework is intended to define and create tools that integrate the information found in today's closed systems and allow the development of e-commerce applications. It is important to understand that the aim of the architectural frame-work itself is not to build new database management systems, data repository, computer languages, software agent based transaction monitors, or communication protocols Rather, the architecture should focus on synthesizing the diverse resources already in place in corporations to facilitate the integration of data and software for better applications. The electronic commerce application architecture consists of six layers of functionality, or services:

1. Applications
2. Brokerage services, data (or) transaction management
3. Interface, and; support layers
4. Secure messaging, and structured document interchange services.
5. Middle ware services
6. Network infrastructure of basic communications services.

2. Define brokarage services and data management.

Ans :

It is an information handling layer of the framework that governs and manages huge amounts of data on the network. It acts as a broker, or mediator that offers service integration between customers and information providers when provided with some constraints like, low price, fast service, or profit maximization for a client. For instance, a customer looking to purchase a specific book from the web goes through the sites of different publications. But, for this he/she will have to be aware of the URL's of these sites. In addition, the customer has to feed the details of the book repeatedly on different sites to search the services at best prices. However, if the customer finds an information brokerage site which can provide the book as per the need, then huge amount of time and effort is saved.

Some other characteristics of this layer are,

(i) It supports the data management and usual transaction services.

(ii) It offers tools to achieve much better, updates for future-compensating transactions.

3. Middleware Services.

Ans :

The integration of different applications, networks within and between businesses is made possible with middleware services. It is a general term used for software that serves to "work together" separate, often complex and already existing programmes.

Middleware is a relatively new concept that emerged only recently. Users in the 1970s, when vendors, delivered homogeneous over the years, there developed the need to solve all the interface, translation, transformation, and interpretation problems that were driving application developers crazy. With the growth of networks, client-server technology, and all other forms of communicating between/among unlike platforms, the problems of getting all the pieces to work together grew from formidable to horrendous.

As the need for distributed computing spread, users demanded interaction between dissimilar systems, networks that permitted shared resources and applications that could be accessed by multiple software programmes. Middleware is the ultimate mediator between diverse software programmes that

enables them talk to one another. Another reason for middleware is the computing shift from application centric to data centric i.e. remote data controls all of the applications in the network instead of applications controlling data. To achieve data-centric computing, middleware services focus on three elements:

(i) Transparency

(ii) Transaction security and management

(iii) Distributed object management and services.

4. Define Firewalls.

Ans :

Firewalls are computer security systems that protect your computer or your network from intruders, hackers & malicious code. Firewall ensures that uninvited guests cannot access your network. By the help of a firewall, you can determine rules for which type of traffic can come in and go out of your private network.

Firewall enables you to:

- To block some TCP/IP ports to restrict a specific type of traffic; and
- Restrict access to limited domain names and IP addresses by using certain types of firewall

Firewall protects your computer from all kinds of abuse & unauthorized access like Trojans that allow taking control of your computers by remote logins or backdoors.

Some of the firewall products that you may want to check out are:

- McAfee Internet Security
- Microsoft Windows Firewall
- Norton Personal Firewall
- Trend Micro PC-Cillin

5. Need for Network Security

Ans :

i) It is basically needed to secure the network from at-tackers and hackers.

ii) It is needed to eliminate transmission delays.

iii) It is needed to perform secure information transfer by eliminating unwanted editings.

iv) It is needed to protect organization assets.

v) It is needed to protect the data from unintentionally or intentionally accessed by unauthorized users.

vi) It protects the network against passive and active attacks.

vii) It is also required to prevent data from getting misused.

viii) It is also required to recover the system from failures and data losses by applying various policies and procedures.

6. Define the term Protocol.

Ans :

A protocol is a set of rules and guidelines for communicating data between two entities in the network. These rules are clearly defined for each step and process during communication between two or more nodes. Networks have to follow these rules to successfully transmit data. Network protocols govern the end-to-end processes of timely, secure and managed data or network communication. In order for computers to exchange information in a network, there must be a preexisting agreement as to how the information will be structured and how each side will send and receive it.

Network protocols include mechanisms for devices to identify and make connections with each other, as well as formatting rules that specify how data is packaged into messages sent and received. Some protocols also support message acknowledgment and data compression designed for reliable and high performance network communication.

The protocol around which the Internet was designed includes a series of design principles.

7. Hyper text transfer protocol?

Ans :

HTTP is a communication protocol. It defines mechanism for communication between browser and the web server. It is also called request and response protocol because the communication between browser and server takes place in request and response pairs.

HTTP Request

HTTP request comprises of lines which contains:

- Request line
- Header Fields
- Message body

Key Points

- The first line i.e. the Request line specifies the request method i.e. Get or Post.
- The second line specifies the header which indicates the domain name of the server from where index.htm is retrieved.

HTTP Response

Like HTTP request, HTTP response also has certain structure. HTTP response contains:

- Status line
- Headers
- Message body

HTTP (Hypertext Transfer Protocol) is perhaps the most popular application protocol used in the Internet (or The WEB).

8. SMTP.

Ans :

SMTP is a simple ASCII protocol. After establishing the TCP connection to port 25, the sending machine, operating as the client, waits for the receiving machine, operating as the server, to respond.

The server starts by sending a line of text giving its identity and telling whether or not it is prepared to receive mail. If it is not, the client releases the connection and try again later. If the server is willing to accept e-mail, the client announces from whom the e-mail is coming and to whom it is going. If such a recipient exists at the destination, the server gives the client the go-ahead message. Then the client sends the message and the server acknowledges it. Checksums are generally not needed because TCP provides a reliable byte-stream.

When all the e-mails have been exchanged in both directions, the connection is released. The exchange of mail using TCP/IP is performed by a Message Transfer Agent (MTA). Users normally do not deal with MTA. The system administrator is responsible to set-up the local MTA.

9. Secure Socket Layer (SSL).

Ans :

Secure Socket Layer is a protocol developed by Netscape communication to ensure the security of data transmission over the internet. SSL has been universally accepted as a provider of secure data communication between web browser (client) and web server through HTTP, LADP or POP3 application layers. SSL runs on top of TCP and FTP layers to enable services for the application layer. These services help higher layer protocols such as HTTP, LDAP or IMAP to use SSL functionality. The purpose of SSL design is to use TCP as a communication layer to provide a reliable end-to-end secure and authenticated connection between two points over a network.

10. Define Encryption. Explain the techniques of Encryption

Ans :

Encryption is the process in which a sender converts the original information to another form and sends the resulting unintelligible message out over the network. The sender requires an encryption algorithm and a key to transform the plaintext (original message) into a cipher text (encrypted message), it's also known as enciphering.

Plaintext is the data that need to be protected during transmission. The cipher text is the scrambled text produced as an outcome of the encryption algorithm for which a specific key is used. The cipher text is not shielded. It flows on the transmission channel. The encryption algorithm is a cryptographic algorithm that inputs plain text and an encryption key and produces a cipher text.

The keys used for encryption and decryption could be same or different depending on the type of cryptosystems used. They are,

1. Symmetric key encryption
2. Asymmetric key encryption.

11. Define decryption

Ans :

Decryption is the process of taking encoded or encrypted text or other data and converting it back into text that you or the computer can read and understand. This term could be used to describe a method of un-encrypting the data manually or with un-encrypting the data using the proper codes or keys.

Data may be encrypted to make it difficult for someone to steal the information. Some companies also encrypt data for general protection of company data and trade secrets. If this data needs to be viewable, it may require decryption. If a decryption passcode or key is not available, special software may be needed to decrypt the data using algorithms to crack the decryption and make the data readable.

12. Define digital signature.

Ans :

A digital signature is basically a way to ensure the authenticity and integrity of an electronic document. The document can be an e-mail, spreadsheet, pdf or text file. Authenticity means that the receiver of the document knows who created the document. Integrity means the document has not been changed in any way since that person created it. If the document gets altered during the sending process, then the receiver will be able to know there has been an alteration.

Digital signatures rely on public key encryption or asymmetric encryption to ensure authentication. Encryption is the process of converting the readable form of data in to unreadable form to prevent unauthorised access. Authentication is the process of verifying that information is coming from a trusted source. These two processes work together for digital signatures.

Choose the Correct Answer

1. TCP is a _____ . [a]
   (a) Connection Oriented (b) Connection less
   (c) a & b (d) None
2. IP is . [d]
   (a) Connection Oriend (b) Connection less
   (c) Un-Reliable (d) b and c
3. URL stands for . [a]
   (a) Uniform Resource Locator (b) Unified Resource Locator
   (c) Unified Recognization Locator (d) None
4. SMTP is _____ Protocor. [d]
   (a) Application level (b) Connection - oriented
   (c) Text based (d) All
5. SSL stands for _____. [a]
   (a) Security Socket Layer (b) Socket Secured Layer
   (c) Security Signal Layer (d) None
6. _____ is a technique to provide message confidentiality. [b]
   (a) Authentication (b) Cryptography
   (c) Verification (d) All
7. _____ is the process of converting plain text into cypher text. [a]
   (a) Encryption (b) Decryption
   (c) Cryptography (d) All
8. Public key is used Encypt messages not Decnypt. [a]
   (a) Public key (b) Private key
   (c) Shared key (d) None
9. How many layers we have in application services of E-commerce? [a]
   (a) 3 (b) 4
   (c) 6 (d) 5
10. Client -server comes under [b]
   (a) 3-tier -architecture (b) 2-tier- Architecture
   (c) 4-tier-architecture (d) None

Fill in the blanks

1. TCP stands for _____ .
2. IP stands for _____.
3. UDP stands for _____.
4. FTP stands for _____.
5. HTTP stands for _____.
6. _____ are major objectives of SSL.
7. _____ is the Encnypted form of the text .
8. _____ is a technique used to Encypt data and genrate unpredictable hasly values.
9. The process of verifing user basic Requirements of user called _____.
10. PKI stands for _____.

ANSWERS

1. Transmission control protocal
2. Internet Protocal
3. User Datagram protocol
4. File Transfer protocol
5. Hyper text transfer protocol
6. Security and Integrity
7. Cipher text
8. Hashing
9. Authorization
10. Public key Infrastructure

One Mark Answers

Q1. Digital Signature.

Ans :

Which allows you to verify author, date and time of signatures, authenticate the message contents.

Q2. Private Key.

Ans :

It can be used to decenypt messages encryption with a matching public key.

Q3. Encryption.

Ans :

It is a security method in which information is enclosed in such a way that only authorized user can read it.

Q4. List the phases of mail - transfer.

Ans :

We have 3 phases.

1. Connection set - up
2. Mail - transfer
3. Connection termination

Q5. Firewall.

Ans :

It is a Network Device that isolates organization Internal network from larger out side network.

UNIT III

Consumer Oriented E-Commerce Applications :

Introduction - Mercantile Process Model: Consumers Perspective and Merchant's Perspective - Electronic Payment Systems: Legal Issues & Digital Currency - E-Cash & E-Cheque - Electronic Fund Transfer (EFT) - Advantages and Risks - Digital Token-Based E-Payment System - Smart Cards.

3.1 CONSUMER ORIENTED E-COMMERCE APPLICATIONS

3.1.1 Introduction

Q1. Give a brief introduction of consumer oriented E-Commerce applications.

Ans :

Consumer Oriented E-Commerce Applications

1. Personal Finance and Home Banking Management

The technology for paying bills, whether by computer or telephone is infinitely more sophisticated than any on the market a few years ago. The range of options has expanded to include PCs, interactive TV and even personal digital assistance (PDAs) and Smartphone. Customer's interest in home banking has resumed, fueled by growing comfort – or at least familiarity – with electronics, by greater demands on consumer time and by the expanding needs for information to manage the increasing complexity of house hold.

(a) Basic Services

It is related to personal finance i.e. checking savings account statement around the clock, banking with ATM's. bill payment, balancing cheque book status of payment or stock payment requested etc.

(b) Intermediate Services

It includes a broader array of financial management services which include non-banking activities as well as banking activities such as household banking, tax return preparations etc.

(c) Advanced Services

It includes stock and mutual funds brokerage or trading services such as currency trading and credit card or debit card management.

2. Homeshopping

One of the examples often sighted about e-commerce is home shopping which is widely used and had generated substantial revenue for many companies racing to develop on-line malls. The malls will enable a customer to enter an online store look at products, try on computerized clothes, and see a reflection in a digital mirror and purchase with overnight delivery against credit card billing. The exact operating method of these services has yet to be determined, but the retailers are well aware of the potential opened up by the ability to transmit huge amounts of digital information into home and to provide interactive control to the shopper.

(a) Television Based Shopping

TV shopping has evolved over years to provide a wide variety of goods ranging from clothing, small electronic house ware, and jewelry and computing devices.

(b) Catalog Based Shopping

The online catalog business consists of brochures, CD ROM catalogs and online interactive catalogs. Most online catalogs are some form of electronic brochure. Electronic brochures are multimedia replacement for direct mail, paper & brochures used in the business to business marketing. Basically electronic catalog contains highly interactive programs using still images, graphics, animation, sound, text & data. One of the disadvantages of this catalog is its prohibitive cost.

There are two ways in which catalog-based shopping can be done,

(i) Catalog based shopping through paper-based catalogs.

(ii) Catalog based shopping through online catalogs.

(i) Catalog Based Shopping through Paper-based Catalogs

Suppose a customer visits a TV showroom to buy a TV but fails to find the desired TV, as he/she is not able to explain the type of TV that is required to the shopkeeper. In such situation, the shopkeeper provides the customer with a catalog which has detailed explanation of various models of TV. This may lead to the possibility of find, the desired TV.

Benefits of Paper-based Catalogs

- This type of catalog is easy to develop and are less expensive.
- It doesn't require computer for accessing them.
- It is relatively flexible than online catalogs.

Drawbacks of Paper-based Catalogs

- It is not possible to perform any sort of change in these catalogs.
- It displays the product information only in the form of text or photograph and doesn't include any form of video.
- It limits the number of products to be displayed.

(ii) Catalog Based Shopping through Online Catalogs

The procedure for catalog-based shopping through on-line catalogs is almost similar to paper-based catalogs. Only difference is that these catalogs are provided online. The online catalog that is mostly used is CD-ROM catalogs. These catalog contains detailed information of the product provided by the website of that particular product which can be viewed just by inserting the CD.

Benefits of Online Catalogs

- It is possible to perform changes in online catalogs.
- It helps the customer to easily search for the desired product.
- It provides current and relevant product information.
- It displays the product information in the form of text, audio, video etc.
- It enables the customer to perform comparative shopping.
- It doesn't restrict on the number of products to be displayed.

Drawbacks of Online Catalogs

- It is costly to build.
- It becomes necessary for the customer to have the knowledge of computers as well as the Internet.

3. Home Entertainment

It is another application area of E-commerce, the most important services provided under these are movies on demand, interactive games etc. The online gaming industry in turn parallels the TV industry where the customer

is primarily interested in good quality programming & is not faithful to any one network.

In the entire home entertainment area, the key element is the notion of customer control under programming entertainment on demand as expected to give each viewer total control over what, when and where to watch.

In addition to game technology, we also witness the emerging services of entertainment support function such as on screen catalogues, TV guide that inform users what is on TV.

Other entertainment services are as follows,

(a) Pay per view service

(a) Game on demand service.

(a) Pay Per View Service

It is a special type of service provided by cable operators. In this service, in order to watch a particular programme on TV, a user has to pay for it.

(b) Game on Demand Service

With the help of this service, a user can order and play desired games, which may include sports games, car racing games, mind games or action games.

Other than ordering and watching movies, a user can also hear different kinds of music like Hindi, Gujrati, Spanish etc. by downloading it through Internet.

4. Micro Transaction of Information

To serve the information needs of the consumer, service providers whose product is information delivered over the I-way are creating an entirely new industry. Most sell any form of digital information and can be sent down the network of one sort or another such as data, picture, images, sounds, computer programs and services. A few sell products such as music books, clothing etc through on-line catalogues.

One significant change in the traditional business forced by is online information. Business is the creation of new transaction catalogues called small fee transactions for micro services.

There are two main categories to download a software,

(a) Shareware software

(b) Freeware software

(a) Shareware Software

There are some websites which charges the user for usage of a particular software. This category of software is called shareware software.

(b) Freeware Software

There are some websites which don't charge the user for usage of a particular software. This type of software is called freeware software.

The biggest advantage of this category of software is that it is cost free. The problem that might occur in shareware software category is the fraudulent use of your credit card. In freeware category, no such problem exists.

Following is the diagrammatic representation of micro transactions of information application.

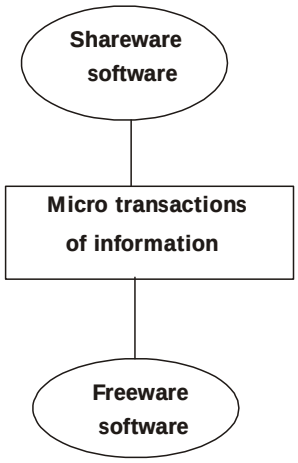


Fig: Microtransactions of Information

Q2. Discuss different types of electronic market places.

Ans :

(a) Private Company Electronic Market Place

A market place which consists of more number of suppliers and only one customer.

Example

Harley-Davidson supply net electronic market place.

(b) Consortia Sponsored Electronic Market Place

An electronic market place having more number of suppliers and less number of customers.

Example

Covisint electronic market place and exostar electronic market place.

(c) Independent Industry Electronic Market Place

A market place where there are equal number of suppliers and equal number of customers.

Example

Chem connect electronic market place.

(d) Customer Portals Electronic Market Place

This market place is just the opposite of consortia sponsored electronic market place. Instead of more number of suppliers and less number of customers, there are more number of customers and less number of suppliers.

Example

Grainger electronic market place.

(e) Private Stores on Supplier's Site Electronic Market Place

This market place is complete contrast to the private company electronic market place. There is only one supplier and more number of customers as compared to only one customer and more number of suppliers of private company electronic market place.

3.2 MERCANTILE PROCESS MODEL

Q3. Define Mercantile Process Model.

Ans :

Mercantile process model defines the interaction between consumer and merchants. This process model is used for online commerce. Mercantile model represent a standard business process which is necessary to buy and sell goods online. Both buyer and seller follow this model.

The setup of common mercantile process model is expected to increases the convenience and quality for online consumers with low price and control.

This model is very important from an interactive services and merchandising point of view.

There are following types of Mercantile Process Model:

1. Mercantile models from the consumer's perspectives.
2. Mercantile models from the merchant's perspectives.

3.2.1 Mercantile Process Model - Consumers Perspective

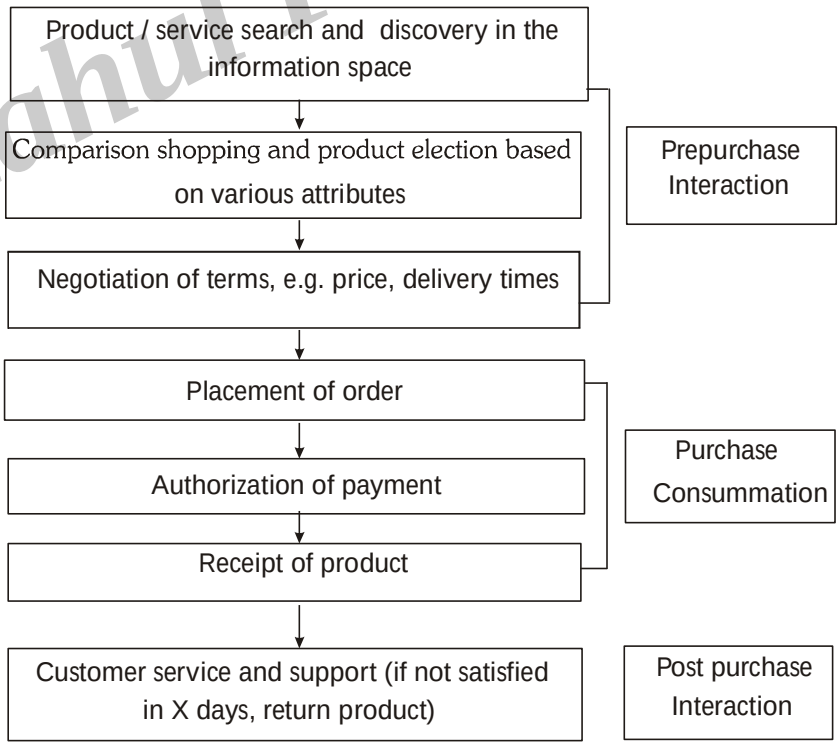
Q4. Explain in detail about Mercantile Model from consumer Perspective ?

Ans : **(Oct.-20)**

The on-line consumer expects quality, convenience, value, low price and control. To meet these expectations and understand the behavior of the online shopper, there is a need for a business process model that provides a standard product/services purchasing process from an interactive services and merchandising point of view.

Consumer mercantile activities can be grouped into three phases pre purchase preparation, purchase consummation and post purchase interaction.

1. The pre purchase preparation phase includes search and discovery for set of products in the large information space capable of meeting customer requirements and product selection from the smaller set of products based on attribute comparison.
2. The purchase consummation phase specifies the flow of information and documents associated with purchasing and negotiation with merchants for suitable terms, such as price, availability, and delivery dates; and electronic payment mechanisms that integrate payment into the purchasing process.
3. The post purchase interaction phase includes customer service and support to address customer complaints, product returns and product defects.



Consumer Mercantile Activities

1. Pre-Purchase Preparation

From the consumer point of view any major purchase can be assumed to involve some amount of pre purchase deliberation. Pre-purchase deliberation is defined as elapsed time between the consumer's first thinking about buying and actual purchase itself. Information search should constitute the major part of duration but comparison of alternatives and price negotiations would be included in continuously evolving information search and deliver process. To deliberate, consumers have to be watchful for the new or existing information which are essential for purchase decision process.

Information on consumer characteristics with reduced purchase deliberation time can be quite valuable when attempting to target, selective communications to desired audience properly. Thus not much attention have been paid to this important research area which may dictate success or failure of online shopping. Consumers can be categorized into three types:

i) Impulsive buyers

Impulsive buyers: these buyers purchase the product quickly.

ii) Patient buyers

Patient buyers: who purchase products after making some analysis or comparison.

iii) Analytical buyers

Who do substantial research before making the decision to purchase product or services.

2. Purchase Consumption

After identifying the product to be purchased by the buyer and the seller must interact in some way (e-mail, on-line) to carry out the mercantile transactions. The mercantile transaction is defined as the exchange of information between the buyer and seller followed by necessary payment depending upon the payment model mutually agreed on, i.e. backed by the third party such as the central bank, master card, visa card etc. A single mercantile model will not be sufficient to meet the needs of everyone. In very general terms a simple mercantile protocol would require the following transaction where the basic flow remains the same .

i) Through e-mail, online the buyer contacts the vendors to purchase a product or service. This might be done online through e-mail (or) through e-catalogue etc.

ii) Vendor states the price.

iii) Buyer and vendor may or may not engage in a transaction.

iv) If satisfied buyer authorizes payment to the vendor with an encrypted transaction containing the digital signature.

v) Vendor contacts the billing service of the buyer to verify the encrypted authorization for authentication.

vi) Billing service decrypts the authorization and checks the buyer account balance and puts a hole on the amount transfer.

vii) Billing service give the vendor green signal to deliver the product.

viii) On notification of adequate funds to cover financial transaction, vendor delivers the goods to buyer or in the case of information purchase provides a crypto key to unlock the file.

ix) On receiving the goods the buyer signs and delivers receipt. Vendors then tell billing service to complete the transaction.

3. Post Purchase Interaction

Post Purchase Interaction phase includes customer service and support to address customer complaints, product returns, and product defects.

Just because a purchase has been made, the process has not ended. After a purchase is made, it is to be expected that the customer must decide whether they are satisfied with the decision that was made or not. If a customer feels as though an incorrect decision was made, a return could take place. This is a critical stage in retaining customers. This can greatly affect the decision process for similar purchases from the same company in the future.

Q5. Discuss in detail the two forms of payment used in purchase consummation phase.

Ans :

Based on mode of payment used, interaction/ transaction between customer and vendor (also known as mercantile process) varies. There are two forms of payment used in purchase consummation phase. They are,

(i) Mercantile process transactions using digital cash (e-cash).

(ii) Mercantile process transactions using credit cards.

(i) Mercantile Process Transactions Using Digital Cash (E-cash)

E-cash stands for electronic cash. It is one of the forms of on-line payment. It is similar to paper currency that can be easily transmitted through some electronic means. It also has a risk of theft or loss, so requires security for its storage.

(ii) Mercantile Process Transactions using Credit Cards

Mercantile transactions using credit cards is based on two major processes,

- Authorization
- Settlement.

For authorization, two types of devices are required,

- Third party processors/devices.
- Point Of Sale (POS) devices

All the necessary information that is required for authorization of transaction process done through credit cards is obtained by third party processors. The same information is also stored on point of sale devices by using dial up/ telephone connection. With the help of this connection, information is transferred from third party processor to point of sale devices. So, both systems have the same information. But the actual authorization is done on POS devices. Here, credit card number used for transaction is compared with the actual credit card number of the customer. The actual credit card number information will be known from the bank of the customer. If both the numbers match, then the transaction is successful. Otherwise, this processus stopped immediately. Once, the authorization process is complete, the final process is done on a third party processor.

3.2.2 Mercantile Process Model - Merchants Perspective

Q6. Explain Mercantile Process Model from Merchant's Perspective.

Ans : **(Aug.-21)**

The order to delivery cycle from merchant perspective has been manufactured with an eye toward standardization and costs. This model is developed on the assumptions that an organization must create a set of operating standards for service and productivity, and then perform to those standards while minimizing costs of doing so. The strength of this philosophy lie in a company's ability to take the position of low cost provider, its stress on benchmarking service and its emphasis on responsiveness as well as continuous improvements.

To achieve better understanding, it is necessary to examine the order management cycle (OMC) that encapsulates the more traditional order to delivery cycle. The typical OMC includes eight distinct activities although overlapping may occur. The actual details of OMC vary from industry to industry and may differ for individual products and services. However, the OMC has the above steps:

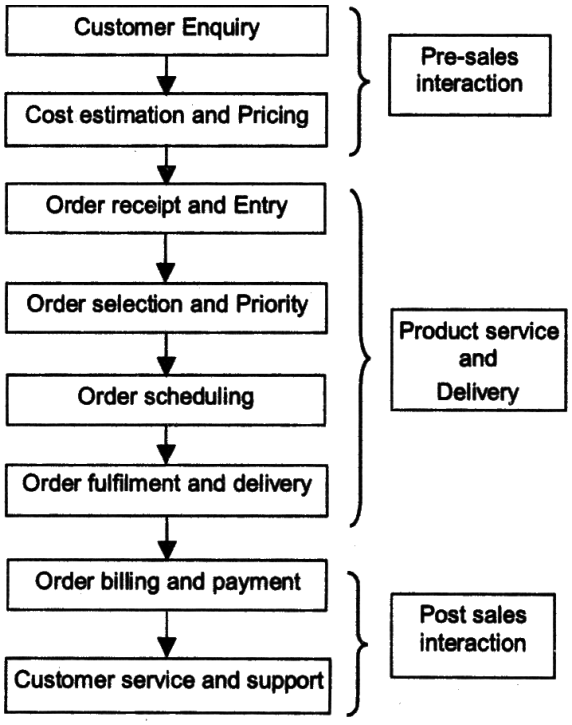


Fig.: Mercantile Process Model from Merchant Perspective

1. Customer Enquiry/Order Planning and Order Generation

The business process begins long before an actual order is place by the customer. Order planning shows how and why lack of cohesive operation can cripple a company. Those farthest from the customer may crucial decisions and open up debt between interdependent functions right from the start. Order planning leads to order generation. The sales and marketing functions worry about order generation, and the other functions stay out of the way.

2. Cost Estimation and Pricing

Pricing is the bridge between customer needs and company capabilities. Pricing at the individual order level depends on the value of customer that is generated by each order, evaluating the costs of filling each order and instituting a system that enables the company to price each order based on its value and costs.

3. Order Receipts and Entry

After an acceptable price quote the customer enters the order receipts and entry phase of OMC. Traditionally this was under the purview of departments variously title customer service, order entry, the inside sales desk, or customer liaison.

4. Order Selection and Prioritisation

Those orders are selected which fits the company's capabilities and offer healthy profits. These orders fall into the sweet spot region which represents a convergence of great customer demand and high customer satisfaction, which in turn translates into customer retention. In addition the company can make gains by the way they handle order prioritisation i.e. how they decide which order to execute faster.

5. Order Scheduling

During this phase the prioritised orders get slotted into an actual production or operational sequence. This task is difficult because the different functional departments - sales, marketing, operation or production may have conflicting goals, compensation system and organizational imperatives.

6. Order Fulfillment and Delivery

During this phase the actual provision of the product or service is made. While the details vary from industry to industry in almost every company this step has been increasing complex. Often, order fulfillment involves multiple function and locations; different parts of an order may be created in different manufacturing facilities and merged at yet another side, or order may be manufactured in one location, warehoused in the second, and installed in the third.

7. Order Billing and Account/Payable Management

Billing is handled by the finance staffs who view their job as getting the bill out efficiently and collecting quickly. It is basically designed to serve the need and interest of the company, not the customer. The bill may not

be in accurate, but is usually constructed in a way more convenient for the billing department than for the customer.

8. Post Sales Services

This phase plays an increasingly important role in all elements of a company's profit equation; customer value, price and costs. Depending on the specific of business, it can include such elements as physical installation of a product, repair and maintenance, customer training and disposal. Because of the information conveyed and intimacy involved post sales service can affect customer satisfaction and company profitability for years.

3.3 Electronic Payment Systems

Q7. Define electronic payment system. What are the characteristics of electronic payment system?

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

Electronic payment (or E-payment) is a subset of an e-commerce which includes electronic payment for buying and selling goods or services offered through the Internet. E- payment refers to paperless monetary transactions.

Traditionally, all payment transaction involved some form of paper in form of cash, check, an invoice or a credit card slip. With the advent of computers and electronic communications, a large number of alternative electronic payment systems have emerged. These include smart cards, debit cards, credit cards, electronic funds transfers (EFT) and internet banking. Today, many users make payments electronically rather than in person. Hundreds of electronic payment systems have been developed to provide secure Internet transactions.

Characteristics of Electronic Payment System

Characteristics of electronic payment system are looked from various points of view as technology, user, and market.

1. Applicability

Acceptance of the user where he/she can use the method to buy goods or services.

2. Easy to use

The system should not be complex particularly in Indian context a user from the remote area should be able to use the system.

3. Security

It is concerned with unforgeability of the value (money). Creation, modification and over spending of the value (money) should be protected. Integrity of the value as well as authorization for value should be spent by the concerned user only.

4. Reliability

Smooth running of the system.

5. Trust

Degree of the confidence that the money and the personal information is safe.

6. Scalability

System should be scalable by timely changes in the underlying infrastructure.

7. Convertibility

Money conversion may be possible from one method to another like loyalty point convertible to the money.

8. Interoperability

System should be operable in between multiple service providers.

9. Efficiency

Reasonable cost of the handling micro-payment.

Q8. Explain the advantages and dis-advantages of electronic payment system.

Ans :

Advantages of Electronic Payment System

1. Time Savings

Money transfer between virtual accounts usually takes a few minutes, while a wire transfer or a postal one may take several days. Also, you will not waste your time waiting in lines at a bank or post office.

2. Expenses Control

Even if someone is eager to bring his disbursements under control, it is necessary to be patient enough to write down all the petty expenses, which often takes a large part of the total amount of disbursements. The virtual account contains the history of all transactions indicating the store and the amount you spent. And you can check it anytime you want. This advantage of electronic payment system is pretty important in this case.

3. Reduced risk of loss and theft

You can not forget your virtual wallet somewhere and it can not be taken away by robbers. Although in cyberspace there are many scammers, in one of the previous articles we described in detail how to make your e-currency account secure

4. Low commissions

If you pay for internet service provider or a mobile account replenishment through the UPT (unattended payment terminal), you will encounter high fees. As for the electronic payment system: a fee of this kind of operations consists of 1% of the total amount, and this is a considerable advantage.

5. User-friendly

Usually every service is designed to reach the widest possible audience, so it has the intuitively understandable user interface. In addition, there is always the opportunity to submit a question to a support team, which often works 24/7. Anyway you can always get an answer using the forums on the subject.

6. Convenience

All the transfers can be performed at any time, anywhere. It's enough to have an access to the Internet.

Disadvantages of Electronic Payment System

1. Restrictions

Each payment system has its limits regarding the maximum amount in the account, the number of transactions per day and the amount of output.

2. The risk of being hacked

If you follow the security rules the threat is minimal, it can be compared to the risk of something like a robbery. The worse situation when the system of processing company has been broken, because it leads to the leak of personal data on cards and its owners. Even if the electronic payment system does not launch plastic cards, it can be involved in scandals regarding the Identity theft.

3. The problem of transferring money between different payment systems

Usually the majority of electronic payment systems do not cooperate with each other. In this case, you have to use the services of e-currency exchange, and it can be time-consuming if you still do not have a trusted service for this purpose. Our article on how to choose the best e-currency exchanger greatly facilitates the search process.

4. The lack of anonymity

The information about all the transactions, including the amount, time and recipient are stored in the database of the payment system. And it means the intelligence agency has an access to this information. You should decide whether it's bad or good.

5. The necessity of Internet access

If Internet connection fails, you can not get to your online account.

In general, the advantages of electronic payment system outweigh its disadvantages and they have bigger opportunities comparing with ones of traditional wire transfers.

Q9. Discuss the factors to be considered for designing EPS.

Ans :

Designing Electronic Payment System

The different factors that are to be considered while designing electronic payment systems are,

1. Privacy and confidentiality
2. Security and protection
3. Intuitive interfaces

4. Database integration
5. Network bankers
6. Cost assigning
7. Standards.

1. Privacy and Confidentiality

Privacy must be ensured and maintained by every electronic payment system. Every user must be assured that details of their transactions are kept confidential so that they can trust the payment systems.

2. Security and Protection

Different security techniques must be embedded within the system such as access control and authentication that verifies the identity of parties that are involved in the transaction.

3. Intuitive Interfaces

The electronic payment system should be developed using a convenient and easy to use interfaces.

4. Database Integration

It is very important to integrate different databases that store various accounts associated with a customer. This customer related information is kept up-to-date and free from any errors so that a customer can gain access to any database using home banking service.

5. Network Bankers

A broker is essentially required while designing a payment system. Broker is the one who is responsible for clearing conflicts and performing financial operations electronically.

6. Cost Assigning

How to price the services offered by electronic payment system is of major concern while designing payment system. For example, is it necessary to use any subsidies to motivate the customer for changing their form of payment since they consume more resources that waste a lot of money. Without subsidies it is impossible for any payment system to assign the cost to a service accurately.

7. Standards

With the help of standards, it is possible for different customers, operating on different networks by using a variety of payment systems to interoperate. Interoperability is assured by using standard protocols and message formats.

Q10. Define credit card. Explain different types of credit cards.

Ans : **(June-19)**

Payment using credit card is one of most common mode of electronic payment. Credit card is small plastic card with a unique number attached with an account. It has also a magnetic strip embedded in it which is used to read credit card via card readers. When a customer purchases a product via credit card, credit card issuer bank pays on behalf of the customer and customer has a certain time period after which he/she can pay the credit card bill. It is usually credit card monthly payment cycle. Following are the actors in the credit card system.

Types of Credit Cards

Credit cards can be classified into different types on the basis of the following factors,

1. Based on Geographical Location

Credit cards are classified into two types based on Geographical location:

(a) Domestic Card

The use of domestic credit cards is restricted to few particular geographical locations.

For Example, Indian domestic credit cards could be used only in India and not outside India.

(b) International Card

The international credit cards might be used in any part of the world, i.e., both domestic and also in foreign markets with few restrictions. Thus, it can be used in different countries.

2. Based on the Category of Users

Credit cards are classified into two different types, based on the category of users as follows,

(a) Individual Card

The individual credit card is issued in the name of an individual person for fulfilling his personal purchases and other financial requirements. Only a particular person can use it.

(b) Corporate Card

Corporate credit cards are those cards which are issued in the company's name. These cards might be used by the authorized employees of the company only and the bill is made in the company's name.

3. Based on Card Status

Credit cards are of three types, on the basis of the status of card:

(a) Standard Cards

The standard credit cards are issued to persons for only purchases and withdrawals with a credit limit ranging from ` 20,000 to ` 50,000.

(b) Gold Cards

The gold credit cards are issued to the rich people and the credit limit is more than that of the standard credit cards.

(c) Platinum Cards

Bank issues platinum credit cards to those gold card holders who have excellent credit repayment record and good credit worthiness. Banks provide higher credit limit to these card holders and other facilities also.

4. Based on Franchise

Based on franchise, credit cards are classified into three types as follows,

(a) Master Card

Master credit cards are those cards which are issued by banks or companies which have a tie up with the United State's Master Card Corporation. These cards are allowed for use in the master card network.

(b) VISA Card

VISA credit cards are issued to those banks/companies which have a tie-up with the United States VISA Card Corporation. These cards are allowed for use in the VISA card network.

5. Based on Credit Recovery

Credit cards based on credit recovery are of two types as follows,

(a) Revolving Cards

Revolving credit card allows the user to carry forward a part of the payment to the next month. Majority of the credit cards are revolving credit cards.

(b) Charge Card

Charge credit card is the opposite one of that of the revolving credit card. These cards do not allow to carry forward the payment. The user of this card needs to clear all his outstanding credit amount at the end of the billing period, every month.

3.3.1 Legal Issues of Electronic Payment System

Q11. Enumerate the legal issues related to Electronic Payment System?

Ans : **(Aug.-21)**

The instrumental growth in e-commerce activities has necessitated the evolution of electronic payment mechanisms. In addition to normal currencies, e-financial instruments /digital currencies such as cybercash and e-cash can be used for the purchase of current as well as capital assets over the Internet and for carrying on other commercial activities. Before regulating the use of such financial instruments, it would be essential to identify the issues that these instruments pose. Some of these issues are:

(a) Secure Credit Card Transactions

An e-commerce website that accepts online credit card payments must ensure that it has adequate security measures to safeguard confidential customer data that is provided on the site. In the event that credit card

numbers are leaked on the Internet, the website could be held liable for damages caused to the consumers.

(b) Recognition of Digital Currencies

To be effective, existing laws would need to recognize the payment of digital currencies, as enforceable consideration against obligations undertaken by the other parties. Further, the extent to which these digital currencies are "valid tender" would also need to be examined.

(c) Determining the Relevant Jurisdiction

This would mean determining the relevant law that parties will be governed by in respect of electronic transactions (whether by the contract, or in its absence, by general principles of law). This may create problems, especially when the laws in Country A, where the company is registered permit electronic payment contracts, whereas the laws in Country B, where the consumer is located, do not regulate electronic payment contracts.

(d) Risk of Regulatory Change

The regulatory environment for electronic payment is likely to change with technological innovations in modes of payment. Therefore, any form of legislation made in this regard should be technologically neutral. Pursuant to the IT Act the Reserve Bank of India ("RBI"), in consultation with the National Payment Council is in the process of giving final touches to the draft of the Payment Systems Regulations Act. This proposed legislation will bring in all electronic fund transfers in the country, such as money orders, settlements at payment gateways, stock and commodity exchanges and learing houses under the jurisdiction of the RBI.

(e) Transaction Risks

These include the liability for security failures in the system of transaction and the relevant standard of care for system security.

(f) Consumer-oriented Risks

These include risks concerning privacy, consumer protection, money laundering, tax avoidance, online fraud and crime.

(g) Disabling IT Act

The IT Act does not apply to negotiable instruments which is likely to create problems in the growth of electronic payment mechanisms.

(h) No Virtual Banks

The recently announced Internet Banking Guidelines in India, which stipulate that purely virtual banks on the Internet are not allowed, may be a hindrance in maximizing the potential of the Internet for electronic payments. However, existing banks are not prevented from setting up e-commerce operations for their customers.

3.3.2 Digital Currency

Q12. Define Digital Currency. Explain the uses of Digital Currency.

Ans :

Digital currency is a payment method which exists only in electronic form and is not tangible. Digital currency can be transferred between entities or users with the help of technology like computers, smartphones and the internet. Although it is similar to physical currencies, digital money allows borderless transfer of ownership as well as instantaneous transactions. The system enables payments to be sent between users without passing through a central authority, such as a bank or payment gateway.

Digital money has many advantages linked with it like easy and timely payments and smaller transaction costs. The acceptance of digital currency by the financial industry is less due to risk factors such as identification of payment beneficiary, volatility of currency, regulatory compliance, and transaction risks.

Using the Digital Currency

1. Once the tokens are purchased, the e-cash software on the customers PC stores digital money undersigned by a bank.

2. The users can spend the digital money at any shop accepting e-cash, without having to open an account there or having to transmit credit card numbers.

3. As soon as the customer wants to make a payment, the software collects the necessary amount from the stored tokens.

3.3.3 E-Cash

Q13. What is E cash (or) Digital Money ?

Ans :

E-cash is a new concept in online payment systems because it combines computerized Convenience with security and privacy that improve all paper cash. Its versatility opens up a host of new market and applications.

E-cash focuses on replacing cash as a principle payment system in consumer oriented e-payments. To displace cash the electronic payment systems need to have some qualities of cash that current credit and debit cards lack. Cash can be held and used by anyone even those who don't have an account in a bank and cash places no risk on the part of the acceptor that the medium of exchange may not begood.

Electronic cash is the debit POS system in euro operated by the German banking industry. It is a strictly PIN-based debit system where transactions are debited to the card holder's current account immediately after presentment of the transaction by the merchant to its bank. The corresponding card is typically issued to the card holder in combination with an account opening.

Since its introduction to the market in 1991, electronic cash can be used by almost all bank issued debit cards in Germany. The huge market coverage and the participating more than 90 million cards generate round about 2.3 billion transactions yearly.

The electronic cash-system is designed to contribute to the successive replacement of cash in the retail sector. One of its attractive assets from the merchant's perspective is the payment guarantee given by the issuing bank after the effectual authorization. Thanks to its efficiency, electronic cash is able to grow even incompetition with other POS-systems. For cardholders, electronic cash transactions are free of charge.

Originally the electronic cash-system was built on proprietary technical standards in order to leverage the existing domestic debit processing environment. However, with the advent of EMV and the implementation of the Single Euro Payment Area, the technical basis of electronic cash will be migrated to accommodate international standards. Thus, the limitation of the electronic cash-system in geographical coverage to Germany due to proprietary standards will disappear. Based on international harmonized technical standards the electronic cash-system can be used by issuers and acquires in the entire euro payment area.

Properties of E-cash

E-cash must have the following four properties.

- **Monetary value**

  E-cash must have monetary value. It must be backed by either cash bank authorized credit card or bank certified cashier cheque. When e-cash is created by one bank, is accepted by others reconsideration must occur without any problems.

- **Interoperability**

  E-cash must be interoperable i.e., exchangeable. It must be opera table in place of other e-cash, paper cash, goods and services, electronic benefit transfer etc.

- **Retrievability**

  E-cash must be storable and retrievable. Remote storage and retrieval would allow users to exchange e-cash from home or office or while traveling. The cash could be stored on a remote computers memory in smart cards or in other easily transported standard or special purpose devices.

- **Security**

  E-cash may not be easy to copy or tamper with while being exchange. This includes preventing or detecting duplication and double spending.

E-cash in action

E-cash is based on cryptography systems called digital signatures. This method involves a pair

of numeric keys. One for locking (encoding) and the other forunlocking (decoding). Messages encoded with one numeric key can only be decoded with other numeric key. The encoding key kept credit Cards. There are two types of credit cards on the market today Credit cards issued by credit card companies (e.g., Master Card, Visa) and major banks (e.g. Is Bankasi, Ziraat Bankasi, Yapi Kredi, etc.) Credit cards are issued based on the customer's income level, credit history, and total wealth. The customer uses these cards to buy goods and services or get cash from the participating financial institutions. The customer is supposed to pay his or her debts during the payment period; otherwise interest will accumulate.

Two limitations of credit cards are their unsuitability for very small or very large payments. It is not cost-justified to use a credit card for small payments. Also, due to security issues, these cards have a limit and cannot be used for excessively large transactions. Credit cards issued by department stores (e.g Boyner), oil companies (e.g. Shell) Businesses extremely benefit from these company cards and they are cheaper to operate. They are widely issued to and used by a broad range of customers. Businesses offer incentives to attract customers to open an account and get one of these cards.

Q14. What are the advantages and disadvantages of Electronic Cash ?

Ans :

Gone are the days when an individual had to carry around silver and gold coins. We now have the option of carrying paper money. Now, the amount of paper money thata person needs to carry around has also reduced considerably, thanks to electronic cash. But all is not what meets the eye Lets find out the advantages and disadvantages of electronic cash.

Advantages :

- **Anonymous**

  This kind of e-cash works just like cash. Once a specific amount is withdrawn from an account, it can be used (or misused) without leaving a visible trail.

- **Identified**

  We know this category popularly as PayPal or WebMoney. The usage and transfer of money in these systems is not entirely untraceable.

- **Online**

  Obviously, it means that one needs to correspond with a bank (via the internet). The bank, then, gets in touch with the third party.

- **Offline**

  One can directly conduct the transaction without any interference from the bank.

- **Smart Card**

  Smart cards are like credit cards with a computer chip in them that stores the holder's money-related information. They are used in digital cash applications.

Disadvantages :

- **Communication Overheads**

Security and anonymity cost become a bottleneck of the system. This can happen at times during real-time verifications.

- **Massive Databases**

  The bank will have to maintain a detailed and confidential database.

- **Synchronization**

  The bank needs to synchronize its server every time transaction is made. It would be insanely impractical to maintain.

3.3.4 E-Cheque

Q15. Define E-Cheque. State the features of E-Cheque.

Ans :

E-Cheque is a form of payment made via the internet. It is an electronic version or representation of a paper cheque and designed to perform the same function as a traditional paper cheque. The only difference between normal paper cheques and electronic cheques is that e-cheque is an online and virtual version. Since the check is in an electronic format, it can be processed in fewer

steps and has more security features than a standard paper check.

It is designed with message integrity, authentication and non-repudiation features. Security features provided by electronic checks include authentication, public key cryptography, digital signatures and encryption, among others. In addition to the cheques 'real' signature, the transfer must be digitally signed using the sender's private key to authenticate the transfer. Electronic checks are becoming increasingly popular because they are so fast, efficient and secure.

Features of E-cheque

- It work the same way as paper cheque.
- It is easy to set up.
- It saves time.
- It has more security features than a paper check.
- It has legal binding promise to pay.
- It is governed by the same laws that apply to paper checks.
- It includes very less human intervention.
- It better protect your business and customers.
- It has the benefit of automation and the reliance of the ACH Network.
- It helps banks to do paperless and efficient transactions.
- It includes the security features such as authentication, public key cryptography, digital signatures and encryption.
- The problem occurs when the merchant does not accept e-cheques.
- Processing is generally much cheaper than processing a paper check
- Business offering e-Cheques expands your customers' options and can increase sales.
- It reduces the potential for errors and fraud because fewer people handle them.
- It can be processed and accessed using specific equipments that ask for investments from financial institutions.
- It does not depend on real-time interactions or on third party authorizations.
- It can bounce or be returned, for stop payment instructions, insufficient funds or accounts being closed.

3.3.5 Electronic Fund Transfer (EFT)

Q16. Define Electronic Fund Transfer (EFT). Explain the different categories of Electronic Fund Transfer.

Ans : **(Oct.-20)**

An electronic fund transfer moves money from one account to another. The accounts can be at the same financial institution or two different financial institutions. The transaction is done electronically over a computerised network. Although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, and point-of-sale (POS) transactions, one of the most widely-used EFT programmes is Direct Deposit, in which payroll is deposited straight into an employee's bank account. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments. EFT can be segmented into three broad categories:

1. Banking and Financial Payments

(i) Large-scale or wholesale payments (e.g., bank-to-bank transfer)

(ii) Small-scale or retail payments (e.g., automated teller machines)

(iii) Home banking (e.g., bill payment)

2. Retailing Payments

(i) Credit Cards (e.g., VISA or Master Card)

(ii) Private label credit/debit cards (e.g., J.C. Penney Card)

(iii) Charge Cards (e.g., American Express).

3. On-line electronic commerce payments

(i) Token-based payment systems

(a) Electronic cash (e.g., Digi Cash)

(b) Electronic checks (e.g., Net Cheque)

(c) Smart cards or debit cards (e.g., Mondex Electronic Currency Card)

(ii) Credit card-based payments systems

(a) Encrypted Credit Cards (e.g., World Wide Web form-based encryption)

(b) Third-party authorization numbers (e.g., First Virtual)

(i) Large-scale (or) Wholesale Payments

Post demonetization, people prefer to transfer money using electronic fund transfer methods. The popularity of electronic payment options is sharply increasing as it allows users to transfer funds online using their mobiles and laptops, from the comfort of their homes and offices. Moreover, it eliminates geographical barriers and helps them transfer money in a hassle-free manner by simply using the EFSC Codes. For instance, if a consumer wants to transfer money to an SBI in Hyderabad, Vikrampuri Branch, from his account, he needs to provide IFSC Code of that particular area. But it can be confusing to decide the best method of transferring the money. The following are the few direct transfer methods, if factors like transfer limit, time, costs are considered.

(a) NEFT (National Electronic Funds Transfer)

National Electronic Funds Transfer or NEFT is the most commonly used online payment option to transfer money from one bank account to another. Usually, salary transfers by companies are done using NEFT.

(b) RTGS (Real Time Gross Settlement)

One can transfer money from one bank to another on a real-time basis using Real Time Gross Settlement or RTGS method There is no maximum transfer limit, but the minimum is ` 2 lakhs. The transactions are processed throughout the RTGS business hours. Usually, the amount is remitted within 30-minutes. To be able to transfer money through RTGS, it is required for the sender and the receiver bank branch to be RTGS enabled. The list of RTGS authorized banks is available on the RBI website. It costs a little more than NEFT. But still, it will not cost you more than ` 30 for transactions up to ` 5 lakhs. The fee varies from bank to bank.

(c) IMPS or Immediate Payment Service

Immediate Payment Service is an interbank electronic instant mobile money transfer service through mobile phones. IMPS service helps customers to access their bank account and transfer funds instantly. The beneficiary account is credited immediately when a fund transfer request is made through customer's mobile phone or Internet banking. This service is available 24x7, throughout the year including Sundays and any bank holiday.

(d) Unified Payments Interface (UPI)

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing and merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience. Each Bank provides its own UPI App for Android, Windows and IOS mobile platforms. No cost is involved in these transactions. The maximum transactional amount is one lakh per transaction and transfer limit is different to each bank.

(ii) Small-scale or Retail Payments

Retail payments usually involve transactions between two consumers, between consumers

and businesses, or between two businesses. Withdrawing money from ATM machines and cash dispensers are examples of this kind of payments. An automated teller machine (ATM) is an electronic telecommunications device that enables customers of financial institutions to perform financial transactions, such as cash withdrawals, deposits, transfer funds, or obtaining account information, at any time and without the need for direct interaction with bank staff. ATM machines are primarily used for withdrawing cash from a bank account. But one can also use many of them to check account balances, get cash advances from credit card accounts, make deposits and even to pay utility bills.

(iii) Home banking

The payments paid for personal finance, intermediate services include financial management and advanced services include trading, bill payment etc. in home-banking, are examples of this kind of payments. Online banking is the practice of making bank dealings through the Internet. It will give us an outstanding chance to bypass the time-consuming, paper-based aspects of usual banking in order to manage finances more competently. By switching to electronic bills, statements, and payments, customers can save lot of time, paper and fake transactions are intimated faster than traditional mailing. Electronic bill payment service through home banking allows a depositor to transfer money from his or her online account to a creditor or merchant, for example to a public utility or an outlet. Online trading is another facility added by many of the financial institutions (banks) to the home banking.

2. Retailing Payments

Financial institutions accept, collect, and process a variety of payment instruments and participate in clearing and settlement systems. Major portion of retailing payments are done through different types of cards and they are classified into three types namely

(i) Credit Cards

(ii) Private label credit/debit cards

(iii) Charge Cards

(i) Credit Cards

General-purpose cards have the logo of one of the bankcard companies on the front. These cards are associated with the consumer's or cardholder's revolving credit account at a financial institution or other business.

(ii) Private Label Credit/Debit Cards

Many companies, however, choose to issue their own credit cards, rather than accept any of the major labels. These are called "private label credit/debit cards". They are cards branded for a specific retailer, independent dealer or manufacturer. Retailers prefer to have their own card because it offers customers another way to shop with them, thus increasing sales. It strengthens the relationship between retailer and customer, increases sales and profitability, creates customer loyalty, builds brand awareness, and develops insight into customers' behaviour. The presence of a card containing the logo of a prominent company in the wallet of a customer has emotional impact and creates a kind of bond, as it were, with that company, precisely because of the exclusivity of such cards. Eg: Walmart, Shoppers Stop, Louis Philippe.

(iii) Charge Cards

A charge card is a plastic card issued by a financial institution that allows the use) to make purchases with funds borrowed from that financial institution. Cards that charge no interest but require the user to pay his/her balance in full upon receipt of the statement, usually on a monthly basis. This type of card does not allow cardholders to carry a balance from one month to the next as they could with a credit card. Charge cards require a credit application for approval. They are generally only approved for high quality borrowers with excellent or good credit. These cards may allow

unlimited spending, however, they must be paid in full each month which limits their use. Missed payments are reported to credit bureaus and can substantially affect a borrower's credit score.

The primary difference between charge cards and credit cards is credit cards have limits, meaning that there is a maximum amount the user can borrow. The issuer determines the limit based on the user's credit rating and credit history'. Charge cards have no limit. Charge cards are not the same as debit cards, which allow the user to withdraw funds directly from his or her own checking account to make purchases. Charge cards require the user to pay his or her balance in full, usually on a monthly basis. There is no paying the balance over time, as is the case with credit cards. Many charge cards also charge a yearly fee, late payment fees, cash-advance fees and foreign-currency conversion fees.

3. On-line Electronic Commerce Payments

The payments made on E-Commerce websites belong to this category. These payments are classified in to two types.

1. Token-based payment systems:
   - (i) Electronic cash
   - (ii) Electronic checks
   - (iii) Smart cards or debit cards
2. Credit card-based payments systems
   - (i) Encrypted Credit Cards
   - (ii) Third-party authorization numbers

1. Token-based payment systems

This type of payment system has many formats

(a) Electronic Cash

Electronic money (also known as e-cash, e-currency, digital money, digital cash etc.) refers to the money which is exchanged only electronically.

(b) Electronic cheques

A form of payment made through the Internet that is designed to perform the same func-tion as a conventional paper cheque. Because the cheque is in an electronic format, it can be processed in fewer steps and has more security features than a standard paper cheque. Security features provided by electronic checks include authentication, public key cryptology, digital signatures, encryption etc.

(c) Smart cards

It is a card with a microchip in it. Such cards are used as a method of identi-fication and authen-tication. A smart card resembles a credit card in size and shape, but inside it is completely different. The inside of a smart card usually contains an embedded microprocessor. The microprocessor on the smart card is used for security. The most common smart card applications are credit card, electronic cash, computer security systems, loyalty systems (like frequent flyer points and shopping points), banking, government identification etc.

2. Credit Card-based Payments Systems

Credit cards are issued based on the customer's credit history, income level, and total wealth. The credit limit ranges from a few hundred dollars to several thousands of dollars. The customer uses these cards to purchase goods and services or obtain cash from the participating financial institutions. The customer is supposed to pay his or her debts during the payment period; otherwise interest will occur. In view of security, credit card based payments are of two types. They are

(i) Encrypted Credit Cards

(ii) Third-party authorization numbers

(i) Encrypted Credit Cards

In the past, systems used the magnetic stripe on the back of a card or the CW (Card Verification Value) number when accepting purchases, but these systems became heavily corrupted with malware during the fraud crisis of 2014. Once the information is stolen, it can be stored into a new strip and used to make fraudulent purchases.

(ii) Third-party Authorization Cards

When a business at a point where it is stuck without it being able to process credit cards and to make it worse, the merchant account provider refuses providing with a merchant account, then the light in the dark is called third party credit card processing. Third party credit card processing enables a business to accept credit card payments through a third party merchant or a third party merchant affiliate programme. There are a lot of third party credit card processors available on the market today and understanding how third party credit card processing works may help businesses pick the right third party credit card processor.

The third party credit card processing process is much less complex than a merchant account credit card processing scheme:

1. A third party merchant account is setup and integrated into business.
2. The client, interested in product or service, fills in the relevant transaction and personal details at the checkout.
3. These details are sent through a secure gateway to the third party merchant processor.
4. These details, automatically processed, are then passed through a final gateway between the third party merchant processor, acting as a normal merchant, and the bank.
5. Transaction and commission fees are charged, and are subtracted from final payout, which is made once or twice a month, depending on the third party credit card processor.

3.3.5.1 Advantages and Risks of Electronic Fund Transfer

Q17. Explain the advantages and Risks involved in EFT .

Ans : **(Oct.-19)**

A) Advantages of EFT

1. Time Savings

Money transfer between virtual accounts usually takes a few minutes, while a wire transfer or a postal one may take several days. Also, you will not waste your time waiting in lines at a bank or post office.

2. Expenses Control

Even if someone is eager to bring his disbursements under control, it is necessary to be patient enough to write down all the petty expenses, which often takes a large part of the total amount of disburse-ments. The virtual account contains the history of all transactions indicating the store and the amount you spent. And you can check it anytime you want. This advantage of electronic payment system is pretty important in this case.

3. Reduced Risk of Loss and Theft

You can not forget your virtual wallet somewhere and it can not be taken away by robbers. Although in cyberspace there are many scammers, in one of the previous articles we described in detail how to make your e-currency account secure.

4. Low Commissions

If you pay for internet service provider or a mobile account replenishment through the UPT (unattended payment terminal), you will encounter high fees. As for the electronic payment system: a fee of this kind of operations consists of 1% of the total amount, and this is a considerable advantage.

5. User-friendly

Usually every service is designed to reach the widest possible audience, so it has the intuitively under-standable user interface. In addition, there is always the opportunity to submit a question to a support team, which often works 24/7. Anyway you can always get an answer using the forums on the subject.

6. Convenience

All the transfers can be performed at any time, anywhere. It's enough to have an access to the Internet.

B) Risks Involved in EFT

The risks that are associated with electronic payment system are,

1. Risks associated with fraud or mistakes
2. Risks associated with privacy
3. Risks associated with credit cards.

1. Risk Associated with Fraud (or) Mistakes

Every electronic payment system has the capability of recording data automatically and electronically. It is very easy and less expensive to store data in electronic devices. This automatic record gives the deflated description of the transactions without any external effort made by any other involved party.

When transactions are imperceptible and depend only on automatic records, then all the financial institutions follow a principle which states that "it is not necessary to delete any requirement of data". Characteristics of records that are stored automatically using electronic systems are,

(i) Persistent storage

(ii) Attainability and traceability

(iii) Database for electronic payment system

(iv) Capable of transferring data to financial institutes like banks.

One of the important purpose of maintaining automatic records is risk management that conflicts with the anonymity of currency. This conflict arises, because paper cash was introduced earlier before the development of electronic devices. Most of the customers or users always desire that there should be anonymity in their operation i.e., their transaction should be kept confidential because of the occurrence of many forged attempts such as tax evasion, smuggling. A query that is raised by anonymity is that, is it possible for an electronic payment system to exist without automatic record?

The problem of anonymity can be resolved by using regulation that provides security to customers. It is not possible for bankers or government to accept electronic payment system that is unremarkable in the absence of automatic record. With the help of statement of accounts, forgery and frauds can be solved easily only if regulation is applied correctly.

2. Risk Associated with Privacy

It is essential for all the electronic payment systems to maintain and ensure privacy. Whenever a purchase is made using smart card or credit card, the information is stored in the database that consists of various records. All these records in the payment system database are linked together to form a single folder that gives information about what or when the products were purchased, from where the purchase was made etc. However tracking these informations contradicts a law which states that privacy of customers should be ensured.

All customers must ensure that information about their transactions are confined to parties that are involved in the transaction process. Privacy should be provided by protecting the transaction from intruders present on the network and from persons that are not authorized to access the transaction. It should be protected from being deceived, cheated until the whole transaction processing is completed. This protection can be provided using trusted third party agents that can verify the identification of parties that are involved in transaction processing.

3. Risk Associated with Credit Cards

In order to handle credit card risk, digital online central bank have developed various procedures to reduce insolvencies. Every procedure has its own benefits and drawbacks,

(i) Either the bank settles its net position with guarantee, or

(ii) Bank settles its net position without guarantee.

(i) With Guarantee

This procedure eliminates the need of insolvency test because the bank presumes that risk associated with credit card is from different banks and not from buyers and sellers.

(ii) Without Guarantee

In this policy, it is necessary for digital banks to define the terms and conditions needed to extend the liquidity for settlement of their net position.

3.3.6 Digital Token - Based E-Payment System

Q18. Explain about Digital Token - Based E-Payment System.

Ans :

The digital token based payment system is a new form of electronic payment system which is based on electronic tokens rather than e-cheque or e-cash. The electronic tokens are generated by the bank or some financial institutions. Hence we can say that the electronic tokens are equivalent to the cash which are to be made by the bank.

Categories of Electronic Tokens

1. Real Time or Cash

This mode of electronic tokens transactions takes place via the exchange of electronic currency (e-cash).

2. Prepaid or Debit

In this electronic payment system the prepaid facilities are provided. It means that user pay in advance for transactions. This technology is used in smart card, electronic purses, debit card etc.

3. Postpaid or Credit

These types of electronic token based on the identity of customers which issue a card, their authentication and verification by a third party. In this system the server authenticates the customers and then verifies their identity through the bank. After all these processing, the transaction take place. Example is E-Cheques.

3.3.7 Smart Cards

Q19. Define Smart Cards. What are the advantages of Smart Cards.

Ans :

A Smart Card is a credit -card- sized hardware device with abuilt-in microprocessor and memory used for identification or financial transactions.

A card reader configured to accept data from that card can read the information stored on a smart card.

Smart cards find applications in a wide variety of fields including banking industry, computer security systems, wireless communications, loyalty systems, satellite TV access or even government identification. They are widely used as credit and debit cards to perform financial transactions without the use of paper currency. They assure protection of data stored on them and offer user authentication facilities.

A plastic card containing a computer chip enable the holder to purchase goods and services, enter restricted areas, access medical, financial, or other records, or perform other operations that require data stored on the chip.

A smart card is more secure than a magnetic stripe card. If you enter an incorrect password too many times, the card will be disabled temporarily. This small plastic card embedded with computing centre offers a much higher level of security and the possibility of digital data storage. Credit and debit cards using this technology store the holder's PIN as well as recent transactions.

To use a smart card, either to pull information from it or add data to it, you need a smart card reader, a small device into which you insert the smart card.

When inserted into a reader or brought in close contact with a reader, it transfers data to a central computer and receives responses.

The greatest disadvantage of using credit is that most of the information must be stored in online mainframe computer networks, from where it is verified and processed. Smart cards however, with an embedded microprocessor store information, since all the security required is embedded in the microprocessor. When a computer communicates with the card, the microprocessor enforces the access to retrieve data from the card's memory banks. The more advantages of smart card are discussed below:

Advantages of Smart Cards

- It is generally safe and secure.
- It provides safety and comfort in finance-related activities.
- It is convenient to carry and easy to use.
- It securely store personal information, credit and buying preference information that can be accessed with a mouse click instead of filling out forms.
- It performs payment of bills and other bank transactions easily and speedily.
- It has inbuilt security. Each card has a unique serial number of its own and is capable of performing encryption, thus reassuring secure transactions.
- It is tamper resistant.
- Apart from storing information, it is capable of processing.
- It can communicate with computing devices through a smart card reader.
- The information and applications on a card can be updated without having to issue new cards.

Q20. What are the uses of Smart Card.

Ans :

1. Pay Phones

By integrating smart card option in the pay phone, both the customers and the company will be beneficial because the customer does not have to worry about carrying the appropriate number of coins, remembering large access codes, pin codes etc. On the other hand, the company does not require coin recognizer, storage box for coins etc. Alsc the need for a company professional to collect the coins from various terminals is eliminated.

2. Mobile Communication

In GSM digital mobile phones, smart card serves as an identification device because it contains all the significant information about the users so that the user will be billed according to their usage irrespective of the phone terminal utilized.

3. Banking and Retail

The smart card can also be used in banking and retail sector i.e., a smart card can serve as a credit card, debit card or a stored value card. The smart card is integrated with a highly powerful microchip that authenticates the user (customer and merchant). Another microchip present in the smart card reader authenticates the bank. Thus, fraudulent usage is avoided. The smart card also supports other features like phone banking, automatic memory dialing and online services.

4. Health Care Sector

The smart card helps the hospital staff to obtain the history of the patient so that they could be treated by keeping their past medical conditions in mind. Smart card also helps in the identification of doctors and provides them with a secured multi-level access to the private information. It also helps in designing an insurance policy for the patients.

5. ID Verification and Access Control

Smart cards are also capable of storing the finger prints of the user, their pictures etc. This

information is used for revealing the identification of the card owner. A smart card reader enabled network can be easily accessed by the user after proper authentication.

Q21. Explian the functionality of smart cards.

Ans :

Smart Cards

Smart cards store massive volume of customer's information such as verification ID, health sector care, financial banking. Apart from this, it even stores electronic money which can be used for processing transactions. It stores more information when compared to traditional magnetic strips cards. It can be programmed to support distinct applications. Some smart cards has the feature of editing and updating even after issuing it to the customers. Smart cards can be used by customer's in their daily life.

Working of Smart Cards

1. The user inserts the smart card in the slot.
2. The card reader reads the information which is embedded on it.
3. The user enters the PIN.
4. The entered PIN security authorities checks based on the certifications issued.
5. The trusted CA verifies the certificates.

Thus, if the certificates are valid then the transaction is processed or else it is terminated. Once the transaction gets successful then the information is updated in the card.

Q22. Explain any few Smart Card Applications ?

Ans :

Following 5 areas are smart card applications listed below

- **Telecommunications**

The most prominent use of smart card technology is in the development of SIM card or Subscriber Identity Module. A SIM card provides unique identification to each subscriber and provides network access to each subscriber and manages its authentication.

A SIM Card

- **Domestic**

The most frequently used smart card in domestic field is the DTH smart card. This card provides authorized access to the information coming from the satellites. In simple words the card with which we can get access to the Direct to Home TV services is nothing but a smart card. The information is encrypted and decrypted within a smart card.

A basic DTH System with the Smart Card

- **Ecommerce and Retail**

Smart card can be used to store information like a person's account details, the transaction details and can be used in purchasing goods online by acting as a credit card. Some retailers can also use smart cards to store points for a particular customer and provide necessary incentives to repeated customers.

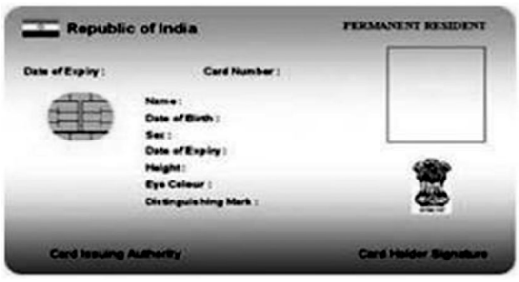
- **Banking Application**

The most prominent use of smart card in banking application is the replacement of the traditional magnetic stripe based credit or debit card. An example is the MasterCard and VISA.

VISA Smart Card

- **Government Applications**

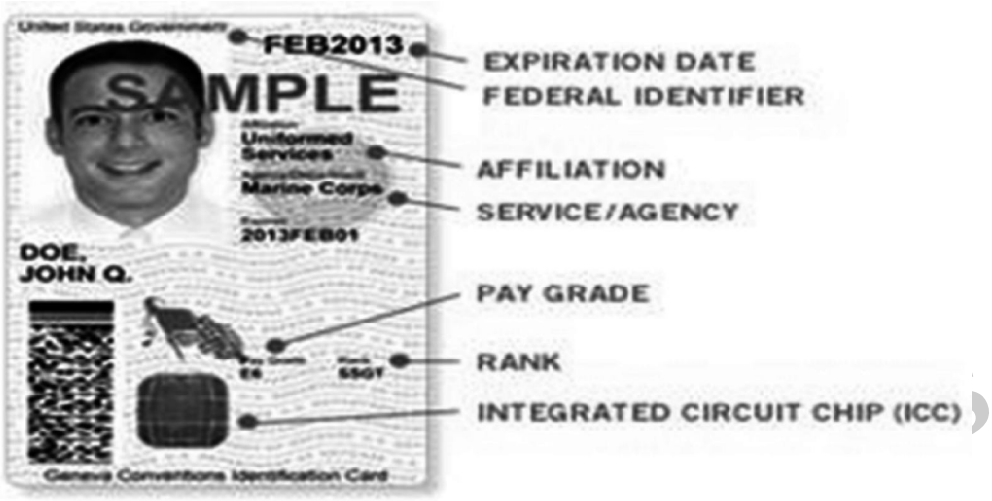
Smart cards are being used by Government to issue identity cards to individual, which contains all the details of the individual. An example is the recently started Adhar card scheme in India.



Adhar Card Model

➢ **Secured Physical access**

Smart cards can be used by Organizations or differed public areas to provide authorized access to the employees (members of the organization) or other persons to the secured areas. The smart card generally contains identity details of the individual which is scanned and checked.



A Sample ID Card for Organizations

Short Question and Answers

1. Define Mercantile Process Model.

Ans :

Mercantile process model defines the interaction between consumer and merchants. This process model is used for online commerce. Mercantile model represent a standard business process which is necessary to buy and sell goods online. Both buyer and seller follow this model.

The setup of common mercantile process model is expected to increases the convenience and quality for online consumers with low price and control.

This model is very important from an interactive services and merchandising point of view.

There are following types of Mercantile Process Model:

1. Mercantile models from the consumer's perspectives.
2. Mercantile models from the merchant's perspectives.

2. Define electronic payment system.

Ans :

Electronic payment (or E-payment) is a subset of an e-commerce which includes electronic payment for buying and selling goods or services offered through the Internet. E- payment refers to paperless monetary transactions.

Traditionally, all payment transaction involved some form of paper in form of cash, check, an invoice or a credit card slip. With the advent of computers and electronic communications, a large number of alternative electronic payment systems have emerged. These include smart cards, debit cards, credit cards, electronic funds transfers (EFT) and internet banking. Today, many users make payments electronically rather than in person. Hundreds of electronic payment systems have been developed to provide secure Internet transactions.

3. Advantages of Electronic Payment System.

Ans :

1. Time Savings

Money transfer between virtual accounts usually takes a few minutes, while a wire transfer or a postal one may take several days. Also, you will not waste your time waiting in lines at a bank or post office.

2. Expenses Control

Even if someone is eager to bring his disbursements under control, it is necessary to be patient enough to write down all the petty expenses, which often takes a large part of the total amount of disbursements. The virtual account contains the history of all transactions indicating the store and the amount you spent. And you can check it anytime you want. This advantage of electronic payment system is pretty important in this case.

3. Reduced risk of loss and theft

You can not forget your virtual wallet somewhere and it can not be taken away by robbers. Although in cyberspace there are many scammers, in one of the previous articles we described in detail how to make your e-currency account secure.

4. Define credit card.

Ans :

Payment using credit card is one of most common mode of electronic payment. Credit card is small plastic card with a unique number attached with an account. It has also a magnetic strip embedded in it which is used to read credit card via card readers. When a customer purchases a product via credit card, credit card issuer bank pays on behalf of the customer and customer has a certain time period after which he/she can pay the credit card bill. It is usually credit card monthly payment cycle. Following are the actors in the credit card system.

5. Define Digital Currency.

Ans :

Digital currency is a payment method which exists only in electronic form and is not tangible. Digital currency can be transferred between entities or users with the help of technology like computers, smartphones and the internet. Although it is similar to physical currencies, digital money allows borderless transfer of ownership as well as instantaneous transactions. The system enables payments to be sent between users without passing through a central authority, such as a bank or payment gateway.

Digital money has many advantages linked with it like easy and timely payments and smaller transaction costs. The acceptance of digital currency by the financial industry is less due to risk factors such as identification of payment beneficiary, volatility of currency, regulatory compliance, and transaction risks.

6. What is E-cash.

Ans :

E-cash is a new concept in online payment systems because it combines computerized Convenience with security and privacy that improve all paper cash. Its versatility opens up a host of new market and applications.

E-cash focuses on replacing cash as a principle payment system in consumer oriented e-payments. To displace cash the electronic payment systems need to have some qualities of cash that current credit and debit cards lack. Cash can be held and used by anyone even those who don't have an account in a bank and cash places no risk on the part of the acceptor that the medium of exchange may not begood.

Electronic cash is the debit POS system in euro operated by the German banking industry. It is a strictly PIN-based debit system where transactions are debited to the card holder's current account immediately after presentment of the transaction by the merchant to its bank. The corresponding card is typically issued to the card holder in combination with an account opening.

7. Properties of E-cash.

Ans :

E-cash must have the following four properties.

- **Monetary value**

  E-cash must have monetary value. It must be backed by either cash bank authorized credit card or bank certified cashier cheque. When e-cash is created by one bank, is accepted by others reconsideration must occur without any problems.

- **Interoperability**

  E-cash must be interoperable i.e., exchangeable. It must be opera table in place of other e-cash, paper cash, goods and services, electronic benefit transfer etc.

- **Retrievability**

  E-cash must be storable and retrievable. Remote storage and retrieval would allow users to exchange e-cash from home or office or while traveling. The cash could be stored on a remote computers memory in smart cards or in other easily transported standard or special purpose devices.

8. Disadvantages of Electronic Cash

Ans :

- **Communication Overheads**

  Security and anonymity cost become a bottleneck of the system. This can happen at times during real-time verifications.

- **Massive Databases**

  The bank will have to maintain a detailed and confidential database.

- **Synchronization**

  The bank needs to synchronize its server every time transaction is made. It would be insanely impractical to maintain.

9. Define E-Cheque.

Ans :

E-Cheque is a form of payment made via the internet. It is an electronic version or representation of a paper cheque and designed to perform the same function as a traditional paper cheque. The only difference between normal paper cheques and electronic cheques is that e-cheque is an online and virtual version. Since the check is in an electronic format, it can be processed in fewer steps and has more security features than a standard paper check.

It is designed with message integrity, authentication and non-repudiation features. Security features provided by electronic checks include authentication, public key cryptography, digital signatures and encryption, among others. In addition to the cheques 'real' signature, the transfer must be digitally signed using the sender's private key to authenticate the transfer. Electronic checks are becoming increasingly popular because they are so fast, efficient and secure.

10. Define Electronic Fund Transfer (EFT).

Ans :

An electronic fund transfer moves money from one account to another. The accounts can be at the same financial institution or two different financial institutions. The transaction is done electronically over a computerised network. Although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, and point-of-sale (POS) transactions, one of the most widely-used EFT programmes is Direct Deposit, in which payroll is deposited straight into an employee's bank account. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments. EFT can be segmented into three broad categories:

1. Banking and Financial Payments

(i) Large-scale or wholesale payments (e.g., bank-to-bank transfer)

(ii) Small-scale or retail payments (e.g., automated teller machines)

(iii) Home banking (e.g., bill payment)

2. Retailing Payments

(i) Credit Cards (e.g., VISA or Master Card)

(ii) Private label credit/debit cards (e.g., J.C. Penney Card)

(iii) Charge Cards (e.g., American Express).

11. Advantages of EFT.

Ans :

1. Time Savings

Money transfer between virtual accounts usually takes a few minutes, while a wire transfer or a postal one may take several days. Also, you will not waste your time waiting in lines at a bank or post office.

2. Expenses Control

Even if someone is eager to bring his disbursements under control, it is necessary to be patient enough to write down all the petty expenses, which often takes a large part of the total amount of disburse-ments. The virtual account contains the history of all transactions indicating the store and the amount you spent. And you can check it anytime you want. This advantage of electronic payment system is pretty important in this case.

3. Reduced Risk of Loss and Theft

You can not forget your virtual wallet somewhere and it can not be taken away by robbers. Although in cyberspace there are many scammers, in one of the previous articles we described in detail how to make your e-currency account secure.

12. Define Smart Cards.

Ans :

A Smart Card is a credit -card- sized hardware device with abuilt-in microprocessor and memory used for identification or financial transactions.

A card reader configured to accept data from that card can read the information stored on a smart card.

Smart cards find applications in a wide variety of fields including banking industry, computer security systems, wireless communications, loyalty systems, satellite TV access or even government identification. They are widely used as credit and debit cards to perform financial transactions without the use of paper currency. They assure protection of data stored on them and offer user authentication facilities.

A plastic card containing a computer chip enable the holder to purchase goods and services, enter restricted areas, access medical, financial, or other records, or perform other operations that require data stored on the chip.

13. Advantages of Smart Cards.

Ans :

- It is generally safe and secure.
- It provides safety and comfort in finance-related activities.
- It is convenient to carry and easy to use.
- It securely store personal information, credit and buying preference information that can be accessed with a mouse click instead of filling out forms.
- It performs payment of bills and other bank transactions easily and speedily.
- It has inbuilt security. Each card has a unique serial number of its own and is capable of performing encryption, thus reassuring secure transactions.
- It is tamper resistant.
- Apart from storing information, it is capable of processing.
- It can communicate with computing devices through a smart card reader.

Choose the Correct Answers

1. Order Management Cycle includes - Activities. [c]
   (a) 6 (b) 7
   (c) 8 (d) 5
2. EFT stands for ? [b]
   (a) Electronic fixed transfermation (b) Electronic File transfer
   (c) Electronic Fund transfer (d) None
3. Which is not an advantage of Electronic - Payment -System ? [d]
   (a) User -Friendly (b) Time saving
   (c) Convenience (d) Lack of anonymity
4. _____ is an another form of Digital currency. [a]
   (a) Cryptocurrency (b) Coupon currency
   (c) Virtual currency (d) None
5. Intrinsic tokens also known as _____. [d]
   (a) Bitcoins (b) Native tokens
   (c) Built - in - tokens (d) b and c
6. _____ is a device to which smart card is connected. [a]
   (a) Smart card reader (b) Smart card port
   (c) Smart card cable (d) None
7. What is an advantage of smart card? [d]
   (a) Secure transaction (b) Reusable
   (c) Reconfigarable (d) All
8. _____ is an interaction model between consumer and merchants for online- commerce [a]
   (a) E-commerce (b) Merchantile Process
   (c) Mercantile process (d) All
9. How many models we have in Mercantile process [a]
   (a) 2 (b) 3
   (c) 4 (d) 5
10. Placement of order comes under. [c]
    (a) Prepurchase interaction (b) Post purchase interaction
    (c) Purchase Consummsion (d) All

Fill in the blanks

1. EDI stands for _____.
2. _____ is an interaction model between consumer and Merchants for online commerce.
3. OMC stands for _____.
4. Paperless Monetary transactions called _____.
5. _____ card Embedded with microchip.
6. _____ refers to transaction of money from one account to another with out involvement of middleman.
7. _____ allows consumer to store multiple Credit cards, Debit card & Bank a/c numbers.
8. Electronic version of paper cheque is called _____.
9. EFT stands for _____.
10. ACH stands for _____.

ANSWERS

1. Electronic data Interchange
2. Mercantile process
3. Order Managment cycle
4. E- Payment
5. Smart
6. E- Money- transactions
7. E-wallet
8. E- Cheque
9. Electronic fund transfer
10. Automatic Clearing House Network

One Mark Answers

Q1. EFT

Ans :

Electronic Fund Transfer is a system of transfering money from one bank account directly to another any papermoney changing hands.

Q2. Crypto Currency

Ans :

It is an another form of digital currency which uses cryptography to secure and verify transations, manage and control the creation of new currency units.

Q3. List out any 4 advantages of E-Payments.

Ans :

1. Time saving
2. Reduced Risk
3. Low commissions
4. User - friendly

Q4. E-Wallet.

Ans :

E-Wallet is a prepaid account that allows the customer to store multiple credit cards, debit card and bank account numbers in a secure Environment.

Q5. Give some models of E-Payments.

Ans :

1. Smart card
2. Debit card
3. Smart card
4. E-Money

UNIT IV

ELECTRONIC DATA INTERCHANGE

Introduction - EDI Standards - Types of EDI - EDI Applications in Business – Legal- Security and Privacy issues if EDI - EDI and E-Commerce - EDI Software Implementation.

4.1 ELECTRONIC DATA INTERCHANGE

4.1.1 Introduction

Q1. Define electronic data interchange.

Ans :

Electronic Data Interchange (EDI) is the computer-to-computer exchange of business documents between companies in standard data format using networks, such as VANs or the Internet. It replaces the paper-based exchange of business documents. A standard format is used in EDI so that the computer will be able to read and understand the documents. It is widely used by big companies for e-commerce purposes. Business enjoy major benefits of EDI such as reduced cost, increased processing speed, information security, reduced errors and improved relationships with business partners.

As more and more companies get connected to the Internet, EDI is becoming increasingly important as an easy mechanism for companies to buy, sell, and trade information. EDI offers automated and efficient business therefore many businesses, government agencies and other organizations use EDI every day in the regular course of business.

EDI documents can flow directly out of a sender's computer system directly into a receiver's computer system without any human intervention and processing can begin immediately.

EDI can be defined in many different ways. Few possible definitions of EDI are,

1. Electronic Data Interchange (EDI) is a technique which follows a standardized procedure for electronically transmitting various kinds of information. For instance, commercial information, administrative information etc.

(or)

2. EDI can be referred to as a process used by various trading partners for transmitting information among themselves without any interference.

(or)

3. EDI can be defined as a medium of passing business information in a standardized format.

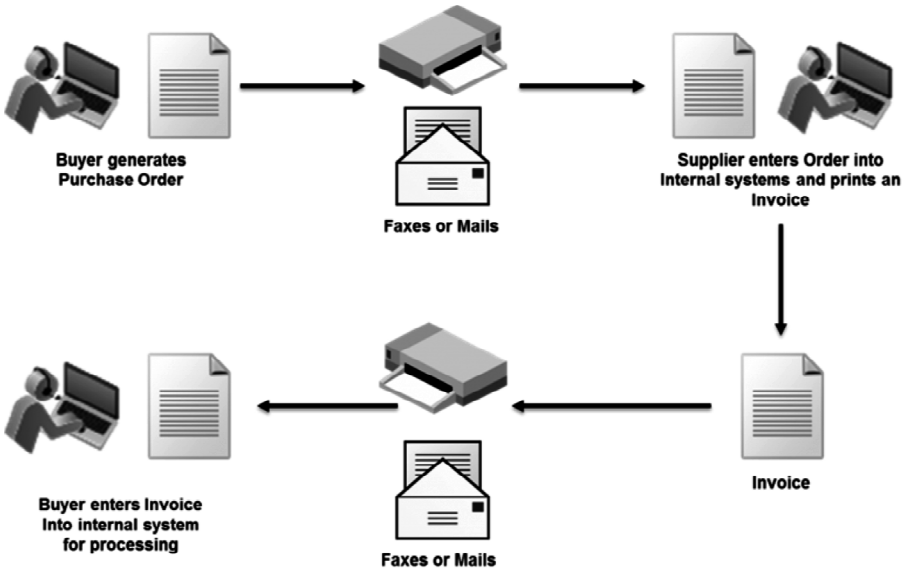
Electronic Data Interchange is a method using which relevant business information is exchanged from one computer to another computer in an electronic format. Other than companies, this method is also used by banks, government organizations etc.

Q2. Explain the significance of EDI.

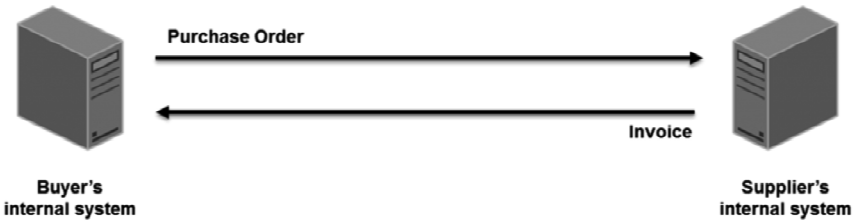
Ans :

- **Computer-to-computer**

EDI replaces postal mail, fax and email. While email is also an electronic approach, the documents exchanged via email must still be handled by people rather than computers. Having people involved slows down the processing of the documents and also introduces errors. Instead, EDI documents can flow straight through to the appropriate application on the receiver's computer (e.g., the Order Management System) and processing can begin immediately. A typical manual process looks like this, with lots of paper and people involvement:



The EDI process looks like this — no paper, no people involved:



- **Business Documents:** These are any of the documents that are typically exchanged between businesses. The most common documents exchanged via EDI are purchase orders, invoices and advance ship notices. But there are many, many others such as bill of lading, customs documents, inventory documents, shipping status documents and payment documents.
- **Standard Format**: Because EDI documents must be processed by computers rather than humans, a standard format must be used so that the computer will be able to read and understand the documents. A standard format describes what each piece of information is and in what format (e.g., integer, decimal, mmddyy). Without a standard format, each company would send documents using its company-specific format and, much as an English-speaking person probably doesn't understand Japanese, the receiver's computer system doesn't understand the company-specific format of the sender's format.
  - There are several EDI standards in use today, including ANSI, EDIFACT, TRADACOMS and ebXML. And, for each standard there are many different versions, e.g., ANSI 5010 or EDIFACT version D12, Release A. When two businesses decide to exchange EDI documents, they must agree on the specific EDI standard and version.
  - Businesses typically use an EDI translator – either as in-house software or via an EDI service provider – to translate the EDI format so the data can be used by their internal applications and thus enable straight through processing of documents.
- **Business partners:** The exchange of EDI documents is typically between two different companies, referred to as business partners or trading partners. For example, Company A may buy goods from Company B. Company A sends orders to Company B. Company A and Company B are business partners.

Q3. What are the advantages and limitations of EDI.

Ans : **(June-19)**

Advantages of EDI

Following are the advantages of having an EDI system.

- **Reduction in data entry errors :** Chances of errors are much less while using a computer for data entry.
- **Shorter processing life cycle :** Orders can be processed as soon as they are entered into the system. It reduces the processing time of the transfer documents.
- **Electronic form of data :** It is quite easy to transfer or share the data, as it is present in electronic format.
- **Reduction in paperwork :** As a lot of paper documents are replaced with electronic documents, there is a huge reduction in paperwork.
- **Cost Effective :** As time is saved and orders are processed very effectively, EDI proves to be highly cost effective.
- **Standard Means of communication :** EDI enforces standards on the content of data and its format which leads to clearer communication.

Limitations of an EDI

1. Different Standards

All EDI systems are not compatible. There are too many standards bodies developing standard documents formats for EDI. For example your company may be following the X12 standard format, while your trading partner follows the EDIFACT standard format. The EDI should set up standard frame for EDI and each user should have the standard interface as per the protocol.

2. Changing Standards

Each year, most standards bodies publish revisions to the standards. This poses a problem to EDI users. You may be using one version of the standard while your trading partners are still using older versions.

3. EDI is Too Expensive

EDI cost is too expensive for the small enterprises and medium enterprises to afford. Some companies are only doing business with others who use EDI. If a company wants to do business with these organizations, they have to implement an EDI program. This expense may be very costly for small companies. Moreover, the cost of EDI increases as the EDI is build with new special communication system.

4. High setup Cost

The initial setup of EDI involves lot of money and time. The preliminary expanses and time due to implementation, customization and training discourages some business to adopt EDI.

5. Security Issues

Another most important problem with EDI is secure EDI transaction over the internet. Security is the main concern for company not to do EDI on the internet.

6. Limit Your Trading Partners

Some large companies tend to stop doing business with companies who don't comply with EDI. For example Wal Mart is only doing business with other companies that use EDI. The result of this is a limited group of people you can do business with.

Q4. Explain prerequisities of EDI.

Ans :

When two companies or organizations agree for conducting business with each other, the both parties need to sign agreement or a contract which consists of the information regarding,

(i) Kind of business transaction to be done.

(ii) How the business transaction will be done.

(iii) Source of transmission for business transactions.

(iv) Standard that will be used for transactions.

Similarly, the same procedure is followed when carrying out business in e-commerce, wherein EDI technique is jsed for doing transactions. It is important to ensure that if the concerned parties

are willing for the business proposal, then it is necessary for these parties to agree for use of EDI. Only then EDI can be implemented otherwise, it cannot be tmplemented.

The benefit of using EDI process is that there will be no inference during transmission. This is because EDI system provides a standard by which information can be transferred.

Prerequisites of EDI

The prerequisites of EDI are the components that forms the basic kit necessary for EDI implementation. These components include,

1. Standards
2. Translation software
3. Bank
4. VAN services
5. Trading partners
6. Proprietary hardware and network.

1. Standards

Standards play a very important role in the success of EDI system. They make sure that the information is properly transmitted.

2. Translation Software

The translation software is responsible for,

(a) Sending messages among trading partners.

(b) Integrating data into current computer applications as well as from current complete application.

(c) Translating the data between EDI message standards.

3. Bank

It offers payment as well as remittance.

4. VAN Services

VAN is a service provider that allows communication possible among different business partners. These business partners exchange electronic data such as purchase orders and invoices.

5. Trading Partners

Trading partners are nothing but suppliers and customers of firm who are responsible for running the business.

6. Proprietary Hardware and Network

If the company is a sponsor or hub company, then it allows the use of EDI. Sponsors are the bigger companies such as Ford, GM and Toyota.

4.1.2 EDI Standards

Q5. Explain the standards of EDI ?

Ans :

EDI Standards

To exchange documents with trading partners, you must convert the data to and from EDI Standard formats. EDI standards are the requirements for the format and content of EDI business documents. EDI standards determine the correct order and location of the units of data in an EDI document. All EDI transactions are defined by EDI standards.

EDI standards developers design and publish EDI Standard formats for various kinds of documents, such as purchase orders or invoices, that you might exchange with your trading partners.

All EDI standards include the following components:

Element : The smallest component in an EDI Standard.

Segments : Groups of elements.

Transaction sets : Also called messages, transaction sets are groups of segments.

EDI Standard format is comparable to the language that you speak. For instance, an element of the EDI Standard can be compared to a word. A segment in the EDI Standard is comparable to a sentence. A transaction set in the EDI Standard is comparable to a paragraph or a document. In the EDI Standard, just as in the language that you speak, elements (or words) are combined to form a segment (or a sentence). Segments (or sentences) are combined to create a Transaction set (or paragraph or document).

Two commonly used EDI standards are:

- EDI for Administration, Commerce, and Transport (EDIFACT) - generic international.
- American National Standards Institute/ Accredited Standards Committee X12 (ANSI ASC X12) - generic.

Both ANSI ASC X12 and EDIFACT also contain subgroups, including:

- Automotive Industry Action Group (AIAG).
- Chemical Industry Data Exchange (CIDX).
- Electronics Industry Data Exchange (EIDX).
- Voluntary Interindustry Communications Standards (VICS).
- Textile/Apparel Manufacturing Communications (TAMCS).
- Sundries and Apparel Findings Linkage Council (SAFLINC).
- U.S. government.

Q6. Define ANSI X 12 standards.

Ans :

One of the standards that is used to describe how EDI based transactions should be done is X 12 standard. This standard was developed by American National Standards Institute (ANSI) along with Accredited Standards Committee (ASC) in 1979. Hence, this standard is also referred to as ANSI ASC X 12 standard.

Types of transactions defined by this standard are,

(a) Purchase order transactions

(b) Delivery order transactions

(c) Invoice transactions

(d) Shipping transactions.

This type of standard is mostly used by United States. The protocols used for ANSI X 12 defined transactions are,

(i) MIME based protocol

(ii) X.400 protocol

There are different types of X 12 standards. Some of them are as follows.

- X 12 finance standard
- X 12 transportation standard
- X 12 insurance standard.

4.2 TYPES OF EDI

Q7. Explain different types of EDI.

Ans : **(Aug.-21, June-19)**

There are many different types of EDI. Companies adopt EDI type to connect with their business partners, dependent on size, importance and frequency of their transactions.

1. Direct EDI

Direct EDI (also known as Point-to-point EDI) establishes a dedicated secure line between trading partners. This approach is used when organization need to communicate with its each trading partner individually. To communicate with each trading partner, organization needs to manage hundreds or thousands of separate connections.

This approach is widely used by large organizations that have business partners with whom they frequently exchange a high volume of EDI documents. The connection is directly provided through internet using the same communication method or protocol. If trading partners are using different communication methods or protocol, then this approach becomes complex.

The implementation of direct EDI needs to purchase a software package that enables organization to use all the agreed upon protocols, such as AS2, SFTP, FTPS. Then organization need to have the same consent with each of their trading partners on (a) use of communication methods (b) use of network protocols (c) protocol setting on exchange of EDI documents.

2. EDI VAN

A Value-added Network (VAN) is a simple, secure private network that acts as an intermediary between business partners sharing standards based

or proprietary data via shared Business Processes. A Value Added Network (EDI VAN) can be described as an organization whose purpose is to send or receive EDI documents between parties.

An EDI VAN is an electronic, commercial adaptation of the Postal Service. The EDI VAN provider offers an electronic "mailboxes" to each trading partners. The EDI VAN receives EDI messages from senders, sorts it for intended recipients, and delivers the mail to the recipient's mailbox.

The trading partner sends EDI messages either through a direct dial-up connection or through another Internet connection type. The sender receives an alerting service indicating that the message has been sent successfully. The electronic messages are then sorted to the receivers' mailboxes. The VAN notifies the recipient that they have a new message waiting.

An electronic mailbox at an EDI VAN can be used whether you only send EDI messages, receive them, or both simultaneously. The EDI VAN allows for 24x7 access to electronic mailbox. This workflow eliminates a number of problems associated with establishing direct communication links with all of your trading partners. In addition to secure mailbox services, EDI via VAN delivers Inspection and authentication of all EDI messages, Full audit trail and Ancillary services.

3. EDI via AS2

AS2 (Applicability statement 2) is one of the most popular methods for exchanging EDI data securely and reliably between two business partners over the internet without having a third-party involved (such as a VAN). It is an Internet standard created by an industry community called the Internet Engineering Task Force (IETF). Walmart has become famous for EDI via AS2.

The internet is one of the more common methods of exchanging EDI and other data because it is easy and relatively inexpensive. But the Internet can also present some challenges for security. AS2 is intended to address these challenges by providing a common set of conventions for security, verification, message integrity and privacy.

AS2 operates only over networks running the TCP/IP protocol, and the receiving computer must be connected to the Internet at the time the document is sent. It means that if you want to have an AS2 capability in-house, both you and your trading partner must use AS2 communicating over TCP/IP-based networks such as the Internet.

AS2 use public and private encryption keys to prevent data theft or hacking while verifying that the sender of that information is a trusted source.

Let's review the step-by-step process for sending EDI purchase orders via AS2.

1. The sender's system creates the purchase order in its proprietary format.
2. The sender's EDI software translates the format of document into a standard EDI format such as ANSI 4050.
3. AS2 software encrypts and digitally signs the purchase order file, and then transmits it via the Internet directly to business partner (supplier).
4. At receiver, the supplier's AS2 software receives the file, verifies source credentials, authenticates, and decrypts the file.
5. The supplier's AS2 software also sends an encrypted and signed message disposition notice (MDN) back to the sender, acknowledging the receipt of the file.

Benefits of EDI via AS2

- It reduces communication costs.
- It increases data security and protection.
- It offers real-time and event-driven transfer of EDI documents.
- It ensures a high data protection through encryption of data.
- It has low implementation costs due to easy installation and configuration of solution.
- It provides simple, convenient and quickly communication relationships with partners.

4. Web EDI

Web EDI (or Web-based EDI) use Internet communication technology to exchange EDI data between parties. It is often referred to as EDI INT, meaning EDI over the internet.

Today, the internet is the preferred method of communications by most businesses because it is reliable, instantaneous and cost effective. Hence, companies are turning to web based EDI more and more. The company can now communicate with their trading partners with a click of the mouse.

Internet-based EDI data sharing uses the same formatting and the same codes as traditional EDI, but instead of sending the information through a variety of other methods, the information is sent over the internet.

It is typically associated with two forms of EDI; the use of web-based systems to manage and exchange EDI and the use of the Web to send EDI data that was generated in-house.

It is more cost effective and easier to put in place than other methods of EDI communication. It is time saving because it reduces the time required to send, receive, and respond to transactions.

Web-based EDI (web EDI) allows a company to interact with its suppliers without implementing a complex EDI infrastructure. Web EDI services only require an Internet connection; thus, EDI has become accessible and affordable to even small- and medium-sized businesses. Hence it is one of the most popular methods for small and medium size suppliers.

Benefits of Web EDI

There are other numerous benefits to using Web-based EDI:

- The Internet is easily accessible.
- It has large-scale connectivity.
- No need to download or install software.
- It does not need special business network architecture.
- It is an excellent development tool for optimizing a wide range of business applications.
- It is time saving method.
- It allows companies to deal with a greater number of business partners that give competitive edge.
- It reduces communication costs.
- It can replace numerous internal EDI applications.
- Internet tools like browsers and search engines are easy to use and most users are very comfortable using them.
- It offers many functions that is not available with traditional EDI, including collaboration, more business procedures and search engines.
- It allows companies to focus on their core business, not EDI issues.

5. Mobile EDI

Mobile EDI is an emerging area for EDI that uses mobile communication technology to exchange EDI data between parties. However, EDI applications were not designed with the mobile user in mind.

In our increasingly mobile world, Hand held device usage in the supply chain is not a new thing, organisations and some companies are starting to launch applications to help 'mobilise' their supply chains.

The issue of user acceptance plays a more significant role in the success of mobile EDI. It need user acceptance to exist successfully in the market. The user accepts any technology on its experience with that technology. However, focusing on supply chain efficiencies, it is easier to see the benefits of a sales person being able to see the status of a delivery to a supplier while on the road or a business manager being able to review supplier performance while in a re-negotiation meeting.

Mobile EDI applications are in their beginning phase. The limitations of the mobile devices such as poor quality and size of the screen may hamper the development of mobile EDI. However, the advent of the iPhone, iPod or iPad and other tablet computers is altering what can be achieved with mobile computing devices. It is only a matter of time before you can download a supply chain or EDI-related app from a private or corporate app store.

It provides 24/7 information on all EDI activity between a company and its trading partners. Incoming electronic transactions for invoicing, shipping documents, purchase orders and other documents can be viewed as they arrive, directly on an smart phone or mobile device — iPhone,

iPod or iPad, blackberry, android, and other mobile devices with a internet connection. It offers managers up-to-date information when they are out of the office, on the road on the way to or back from the office and when they are away at meetings, weekends or vacations. It's only a matter of time, mobile device EDI will be commonplace in many industries.

4.3 EDI Applications in Business

Q8. Discuss about EDI applications in Business.

(OR)

Describe about various EDI applications in business.

Ans : **(Aug.-21, Oct.-20)**

EDI Applications in Business

Although EDI was developed to improve transportation and trade, it has spread everywhere. In short, EDI has grown from its original (and somewhat limited) use as expediter of the transfer of trade goods to facilitator of standard format data between any two computer systems.

An examination of EDI usage in various industries provides insight into the business problems that EDI is attempting to solve. We will present four very different scenarios in industries that use EDI extensively:

1. International (or) cross-border trade,
2. Financial EDI or electronic funds transfer (EFT),
3. Manufacturing and retail procurement.

Let us describe the EDI business applications briefly:

1. International (or) cross-border trade

EDI has always been very closely linked with international trade. Over the last few years, significant progress has been made toward the establishment of more open and dynamic trade relations. Recent years have brought the General Agreement on Tariffs and Trade (GATT); the Free Trade Agreement (NAFTA) among the United States, Canada, and Mexico; and the creation of the European Union. These developments have meant the lifting of long-standing trade restrictions. Many countries, and in particular developing countries, have made significant efforts to liberalize and adjust their trade policies. In this context, trade efficiency, which allows faster, simpler, broader and less costly transactions, is a necessity. It is a widely held view that trade efficiency can be accomplished only by using EDI as a primary global transactions medium.

2. Financial EDI (or) electronic fund stransfer(EFT)

Financial EDI comprises the electronic transmission of payments and remittance information between a payer, payee, and their respective banks. This section examines the ways business-to-business payments are made today and describes the various methods for making financial EDI payments.

Financial EDI allows businesses to replace the labor-intensive activities associated with issuing, mailing, and collecting checks through the banking system with automated initiation, transmission, and processing of payment instructions. Thus it eliminates the delays inherent in processing checks.

Financial EDI

Traditionally, wholesale or business-to-business payment is accomplished using checks, EFT, and automated clearinghouses (ACH) for domestic and international funds transfer.

ACH provides two basic services to industrial and financial corporate customers (including other banks):

(1) Fast transmission of information about their financial balances throughout the world, and

(2) The movement of money internationally at rapid speed for settlement of debit/credit balances. Banks have developed sophisticated cash management systems on the back of these services that essentially reduce the amount of money companies leave idly floating in low-earning accounts.

Thus, three principal types of noncash payment instruments currently used for business-to-business payments: checks, electronic funds transfers, and automated clearinghouse (ACH) transfers.

3. Manufacturing and retail procurement

Both manufacturing and retail procurement are already heavy users of EDI. In manufacturing, EDI is used to support just-in-time. In retailing, EDI is used to support quick response.

Just-in-Time and EDI: Companies using JIT and EDI no longer stock thousands of large parts in advance of their use. Instead, they calculate how many parts are needed each day based on the production schedule and electronically transmit orders and schedules to suppliers every day or its some cases every 30 minutes. Parts are delivered to the plant "just in time" for production activity.

Quick Response and EDI: Taking their cue from the efficiencies manufacturers have gained from just-in-time manufacturing techniques, retailers are redefining practices through the entire supply chain using quick response (QR) systems. For the customer, QR means better service and availability of a wider range of products. For the retailer and suppliers, QR may mean survival in a competitive marketplace. Much of the focus of QR is in reduction of lead times using event-driven EDI. Occurrences such as inventories falling below a specified level immediately trigger a chain of events including automatic ordering from one company's application directly into the other's application. In QR, EDI documents include purchase orders, shipping notices, invoices, inventory position, catalogs, and order status.

Q9. Describe about Internet based EDI.

Ans :

In Internet-based EDI, the data is transferred through Internet without using VAN network. This is possible only when both communicating business partners use same protocol for exchanging messages.

This service offers two types of methods through which messages are exchanged. They are,

(i) E-mail based messaging

(ii) FTP based messaging.

(i) E-mail Based Messaging

E-mail is the conventional method of exchanging message. Every e-mail message should encapsulate EDI interchange and encryption techniques for ensuring e-mail privacy. The following information is exchanged among business partners,

(a) E-mail address for EDI messages and personal communications.

(b) Agreement on various encryption and authentication techniques used including e-mail feedback in the form of acknowledgment.

(c) Public keys used in encryption techniques such as PEM or PGP (Pretty Good Privacy).

(d) Agreement on message format.

(ii) FTP Based Messaging

FTP-based messaging is another message exchange method provided by VAN-free Internet EDI service. In order to exchange EDI messages using FTP, the trading partner needs to create an agreement that will include,

(a) FTP login and password for each trading partner

(b) Rules for naming a file or directory

(c) Encryption techniques, public keys

(d) EDI headers that are encapsulated within an EDI message

(e) Agreement on format of the message.

Most of the organisations today are using Internet for carrying out EDI based transactions. The researchers of DOD (Department of Defence) states that a trading partner can make a choice of using either VAN or Internet as their communication medium if VAN and Internet interoperate with each other.

Q10. What is intra-organisational E-commerce? What are its features?

Ans :

Intra-Organisational E-commerce

Intra-organizational E-commerce refers to the activities that are performed within the organization so as to consistently deliver superior quality service to consumers. These activities include methods and technologies that support the internal business processes of the organization. The main focus of intra-organization commerce activities is to achieve the most efficient business process. The various activities of intra organizational commerce are,

(i) Work flow management

(ii) Supply chain management

(iii) Product and service customization.

(i) Work Flow Management

Work flow management is a process of coordinating the tasks of various individuals or departments within the enterprise. The departments usually work in isolation with each other. However, work flow management collaborates their individual work to get a complete product.

Effective intra-organization commerce can be obtained by,

(i) Removing the useless or unnecessary operational steps from the business process.

(ii) Replacing the internal paper work with computerized processes. By doing so, the processing time and speed of the business process is reduced.

(iii) Using electronic commerce methods in coordinating enterprise processes.

(iv) Using new technology to improve the automation process of work-flow.

(ii) Supply Chain Management

A supply chain refers to a network in which customers and suppliers are present. Management of supply chain is an important activity for any enterprise as it makes the business operation possible. In this competitive world, it is impossible for a single company to stand alone and work isolated from others. A successful business is not just a single company but a network of companies like suppliers, distributors, retailers, manufacturers and others. In order to effectively manage the supply chain, many companies are using technology to coordinate the supply chain. It requires online, real-time distributed information processing system that provides the overall information about the supply chain. The information processing system must have the ability to manage the information not only within a company but also across the industries and enterprises.

(iii) Product and Service Customization

Customization refers to build the product according to the specifications given by the consumer. Consumers always want their customized products to be of high quality, high reliability and of longer life spans. This activity is related with agile manufacturing wherein elimination of inventory and other useless activities are performed. This is done to achieve more flexibility in production scheduling a help quality product.

Q11. What are the features of supply chain management?

Ans :

The features of supply chain management are as follows,

1. It has the capability to act as a source of raw-materials as well as finished goods from any part of the world.
2. All management as well as global business strategies results from accurate execution.
3. As the real time information is processed online, the information associated with supply chain is transparent.
4. It has the capability of managing information within the organization or between the organizations.
5. It is capable of performing integration of all processes present in supply chain that consist of various users, standards, information systems etc.

6. It is capable of developing and implementing accounting models that are used as the tools for reducing cost and increasing performance.

4.4 LEGAL - SECURITY AND PRIVACY ISSUES IN EDI

Q12. Discuss the Legal - Security and Privacy Issues in EDI.

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

(a) Legal and Security Issues in EDI

Mostly, EDI transactions are carried out on a large scale. For example,

- Transactions between two countries
- Transactions between two corporations.

Therefore, it is necessary that transaction data is legalized and secured before transmission. Legalizing and securing process also plays an important role when any particular application is designed, especially an EDI based application. In order to use an EDI globally, it is mandatory that transactions through EDI should be legalized. Efforts have been made to legalize EDI based transactions. Generally, a law is used for making transactions legal in e-commerce. This law contains three types of communication standards which basically define the type of transactions that are legalized. These standards are based on special type of service called USPS (United States Postal Service).

The three communication standards are as follows,

(i) Instantaneous communication standard via USPS.

(ii) Delayed communication standard via USPS.

(iii) Delayed communication standard via Non-USPS.

(i) Instantaneous Communication Standard Via USPS

This is one of the standards based on United State Postal Service. This standard is used to make telephone based transactions legal.

(ii) Delayed Communication Standard via USPS

This is another standard based on USPS. It is mailing system transactions especially USPS mailing system.

(iii) Delayed Communication Standard via Non-USPS

Unlike previous two standards, this standard does not use features of USPS. This standard legalizes telegram based transaction.

(b) Privacy Issues in EDI

Privacy issues play an important role in most of the organizations. Since, they are the mean to collect consume: information easily using digital tool like digital signatures. In order to ensure the privacy of consumers, there is a requirement of timely resolution with government and business working together. This is made possible by developing a few particular standards that are part of uniform business code to carry out transaction over Internet.

Digital Signatures and EDI

Digital signatures are cryptographic process of making sure that the transactions between the sender and receiver is legal. Digital signatures guarantee that no alterations occur during transactions.

Transactions between Sender and Receiver using Digital Signatures

Before transmitting a message, the sender uses hashing technique to convert it into a special type of message called message digest. This message digest is then encrypted by using a private key which is known only to its owner (the sender). This encrypted private key is called digital signature. Now, the original message as well as the digital signature is sent to the receiver.

Receiver gets the original message as well as the digital signature. In order to check the authenticity of the sender or in other words, if receiver wants to know whether sender is authorized or not, the receiver decrypts the digital signature into a message digest by using its public key. Also, receiver with the help of hashing techniques converts the original message into another message digest. Hence, there will be two message digests. Finally,

the receiver cross checks both the message digests. If both the message digest matches, receiver will be assured that the sender is authorized. There is no question of alteration of such type in transaction process. If digital signature process is implemented for EDI transactions, then legalization of EDI is possible which intum ensures security and privacy of transactions.

4.5 EDI AND E-COMMERCE

Q13. Explain the importance of EDI in E-Commerce.

Ans : **(Oct.-19)**

Electronic data interchange (EDI) is well known for B2B e-commerce. EDI has been in use across many industries, including retail, banking, manufacturing, high-tech and services. B2B companies implement EDI as a system for their customers to place product orders. By automatically placing orders, EDI decreases processing costs and order handling time considerably. Moreover, the elimination of human intervention reduces data-entry errors, thereby improving accuracy.

EDI is a tool for electronic transactions. It facilitates electronic commerce and is particularly useful in integration of information inter-organizationally. By implementing EDI, companies can improve operational efficiency, enhance information quality, and achieve reductions in processing time of project critical information. In short, combining EDI and e-commerce will streamline sales for all your customers, while providing a significantly better buying experience for everyone.

The implementation of Traditional EDI is restricted to only predominantly large corporations, thus limiting EDI's reach to a broader base of small suppliers and customers. The evolution of internet based EDI played a critical role in extending EDI benefits to a wide spectrum of business.

Internet based EDI (or Web-based EDI) use Internet communication technology to exchange EDI data between parties. It is often referred to as EDI 1NT, meaning EDI over the internet. It is the most feasible alternative to traditional EDI for many reasons.

Internet-based EDI data sharing uses the same formatting and the same codes as traditional EDI, but instead of sending the information through a variety of other methods, the information is sent over the internet. Using internet instead of a VAN can cut communication costs by over 50 percent.

It is typically associated with two forms of EDI; the use of web-based systems to manage and exchange EDI and the use of the Web to send EDI data that was generated in-house.

It is more cost effective and easier to put in place than other methods of EDI communication. It is time saving because it reduces the time required to send, receive, and respond to transactions.

The figure below shows how the interned based EDI process.

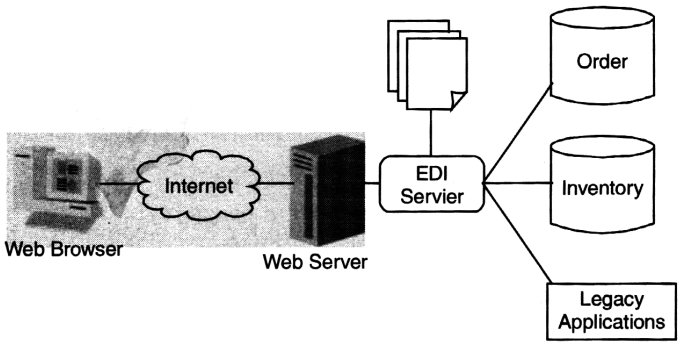


Fig. Internet based EDI

Following are the steps in Internal-EDI System.

- Your customer sends an EDI Purchase Order (PO) the way they do with all of their EDI suppliers.
- You receive an email alerting you a PO has arrived. Then you log into Internet-EDI using a web browser.
- You process your new PO for viewing and printing in a readable format. Internet- EDI then sends an EDI acknowledgment back to your customer confirming you received the PO.
- When goods are ready to ship and invoice, you select a PO and an invoice screen appears already populated with billing information from the PO.
- Your invoices are converted to EDI and delivered to your customer. You can also send ship notices and print packing labels.

Internet-based EDI (web EDI) allows a company to interact with its suppliers without implementing a complex EDI infrastructure. Internet-EDI services only require an Internet connection; thus, EDI has become accessible and affordable to even small- and medium-sized businesses. Hence it is one of the most popular methods for small and medium size suppliers.

For example, Bank of America built its Internet-EDI system with a prototyping approach. Wall mart also implemented Internet-EDI technology for trading partner relationship.

The major issue to be concerned in interned based EDI implementation is security. This method lack in data security and lack of consulting expertise in implementation phase.

Benefits of internet based EDI over Traditional EDI

There are numerous benefits of using Internet-based EDI over Traditional EDI:

- The Internet is easily accessible.
- It has large-scale connectivity.
- No need to download or install software.
- Internet tools such as browsers and search engines are very user friendly.
- Instead of VAN, using internet can cut communication costs by 50 percent
- It does not need special business network architecture.
- It is an excellent development tool for optimizing a wide range of business applications.
- It is time saving method.
- It allows companies to deal with a greater number of business partners that give competitive edge.
- It can replace numerous internal EDI applications.
- Internet tools like browsers and search engines are easy to use and most users are very comfortable using them.
- It offers many functions that is not available with traditional EDI, including collaboration, more business procedures and search engines.
- It allows companies to focus on their core business, not EDI issues.

Q14. Compare and contrast traditional EDI and Internet based EDI.

Ans :

Traditional EDI	Interned Based EDI
Requires Third party	No third party involved
Work best between two large organizations with high volume of transaction	It can be implemented by small or medium sized organizations
Strategic buyer-supplier relationship	Non-strategic buyer-supplier relationship
It links one buyer and one supplier	It links one buyer and many supplier relationship
High operating costs	Low operating costs
It requires each trading partner to install complex, proprietary software	It requires only a web browser and basic client software
Difficult to use	Easy to use
Requires In - house Translator software	No In - house Translator software
Ongoing license & upgrade costs	No license & upgrade costs
Require EDI developers	No EDI developers required
It is inflexible. For example adding new trading partner is not an easy task	It is flexible and easy to upgrade
High Communication cost	Low Communication cost
Expensive transport mechanism	Cheaper transport mechanism
Server costs & maintenance	No server costs
Formatted documents according to agreed upon structure	Internet e-main is used to transport EDI message
Long processing life cycle	Short processing life cycle
High security and capacity	Less security and capacity
Involves consulting expertise	Lack of consulting expertise

4.6 EDI Software Implementation

Q15. Outline the process of EDI Software Implementation.

Ans : **(Oct.-19)**

The Four layers of EDI software implementation are,

1. Business application layer
2. Internal format conversion layer
3. EDI translator layer
4. EDI communication layer.

Using these four layers, message is encapsulated in the form of packets and transmitted to the destination using VAN network. When receiver gets the packets, it performs decapsulation in order to retrieve actual message.

1. Business Application Layer

In this EDI layer, a document in a software application is created which is then transferred to EDI translator. The responsibility of EDI translator is to convert a message into the format as specified in EDI standard. If EDI translator and software application belong to different vendors, it becomes necessary to merge document preparation application with EDI translation software. If both the softwares belong to same vendor, then data transmission can be performed with high speed. EDI translator also helps in creation and wrapping of document into EDI package.

The document that is created has a unique mailbox ID that is used to identify target business partners.

2. Internal Format Conversion

In this layer, the document is converted to a specific format so that it can be used by translator.

3. Translator Layer

The main purpose of using translator is to define the association that exists between data elements present in software application and EDI standards. Translation is the core part of EDI process.

The task of translator is to ensure that data is translated according to the format as specified in EDI standards that business partners can use to understand the message. There is a chance of running a business without EDI translator, which could be a risk if business partners are unable to read the message that is transmitted.

Many companies themselves have developed their own custom EDI translators as,

(i) When compared to commercial translator, custom translator does not get any support or help when required or if any difficulty arises.

(ii) Custom translator is confined to transact with only one business partner i.e., is limited and performs the operation within the organization boundary.

(iii) It is extremely difficult to update custom translator.

4. Communication Layer

Communication can be a module of translation software or it can be a separate application.

The different types of access methods through which communication is possible are as follows,

(a) Direct-dial systems

(b) Limited VAN services

(c) Full VAN services.

(a) Direct-dial Systems

Using these systems, business partners can communicate with each other through modem. The benefit of such systems is that they are more simple to use.

(b) Limited VAN Services

The technical services offered by limited VANs are as follows,

(i) Converting one network protocol to another

(ii) Detecting and correcting errors

(iii) Routing EDI message envelope to several business partners including buyers and sellers

(iv) Delivering the received envelope to appropriate mailbox of the intended business partner.

(c) Full VAN Services

The important features of third party VANs include electronic mailbox and also offer features like providing securir through access control and tracking the document.

Gateways are used in order to have inter connectivity between dissimilar third party networks.

There are various reasons why a company is using EDI VAN service provider,

(i) Route EDI message to correct destination

(ii) Perform data translation between different message formats

(iii) Set up an audit trail for enabling an organization for validating the message.

Short Question and Answers

1. Define electronic data interchange.

Ans :

Electronic Data Interchange (EDI) is the computer-to-computer exchange of business documents between companies in standard data format using networks, such as VANs or the Internet. It replaces the paper-based exchange of business documents. A standard format is used in EDI so that the computer will be able to read and understand the documents. It is widely used by big companies for e-commerce purposes. Business enjoy major benefits of EDI such as reduced cost, increased processing speed, information security, reduced errors and improved relationships with business partners.

As more and more companies get connected to the Internet, EDI is becoming increasingly important as an easy mechanism for companies to buy, sell, and trade information. EDI offers automated and efficient business therefore many businesses, government agencies and other organizations use EDI every day in the regular course of business.

2. Advantages of EDI.

Ans :

Following are the advantages of having an EDI system.

- **Reduction in data entry errors :** Chances of errors are much less while using a computer for data entry.
- **Shorter processing life cycle :** Orders can be processed as soon as they are entered into the system. It reduces the processing time of the transfer documents.
- **Electronic form of data :** It is quite easy to transfer or share the data, as it is present in electronic format.
- **Reduction in paperwork :** As a lot of paper documents are replaced with electronic documents, there is a huge reduction in paperwork.
- **Cost Effective :** As time is saved and orders are processed very effectively, EDI proves to be highly cost effective.
- **Standard Means of communication :** EDI enforces standards on the content of data and its format which leads to clearer communication.

3. Limitations of EDI

Ans :

i) Different Standards

All EDI systems are not compatible. There are too many standards bodies developing standard documents formats for EDI. For example your company may be following the X12 standard format, while your trading partner follows the EDIFACT standard format. The EDI should set up standard frame for EDI and each user should have the standard interface as per the protocol.

ii) Changing Standards

Each year, most standards bodies publish revisions to the standards. This poses a problem to EDI users. You may be using one version of the standard while your trading partners are still using older versions.

iii) EDI is Too Expensive

EDI cost is too expensive for the small enterprises and medium enterprises to afford. Some companies are only doing business with others who use EDI. If a company wants to do business with these organizations, they have to implement an EDI program. This expense may be very costly for small companies. Moreover, the cost of EDI increases as the EDI is build with new special communication system.

iv) High setup Cost

The initial setup of EDI involves lot of money and time. The preliminary expanses and time due to implementation, customization and training discourages some business to adopt EDI.

4. Prerequisites of EDI

Ans :

The prerequisites of EDI are the components that forms the basic kit necessary for EDI implementation. These components include,

i) Standards

ii) Translation software

iii) Bank

iv) VAN services

v) Trading partners

vi) Proprietary hardware and network.

5. Financial EDI

Ans :

Traditionally, wholesale or business-to-business payment is accomplished using checks, EFT, and automated clearinghouses (ACH) for domestic and international funds transfer.

ACH provides two basic services to industrial and financial corporate customers (including other banks):

(1) Fast transmission of information about their financial balances throughout the world, and

(2) The movement of money internationally at rapid speed for settlement of debit/credit balances. Banks have deve-loped sophisticated cash management systems on the back of these services that essentially reduce the amount of money companies leave idly floating in low-earning accounts.

Thus, three principal types of noncash payment instruments currently used for business-to-business payments: checks, electronic funds transfers, and automated clearinghouse (ACH) transfers.

6. Supply Chain Management

Ans :

A supply chain refers to a network in which customers and suppliers are present. Management of supply chain is an important activity for any enterprise as it makes the business operation possible. In this competitive world, it is impossible for a single company to stand alone and work isolated from others. A successful business is not just a single company but a network of companies like suppliers, distributors, retailers, manufacturers and others. In order to effectively manage the supply chain, many companies are using technology to coordinate the supply chain. It requires online, real-time distributed information processing system that provides the overall information about the supply chain. The information processing system must have the ability to manage the information not only within a company but also across the industries and enterprises.

7. Benefits of internet based EDI over Traditional EDI

Ans :

There are numerous benefits of using Internet-based EDI over Traditional EDI:

- The Internet is easily accessible.
- It has large-scale connectivity.
- No need to download or install software.
- Internet tools such as browsers and search engines are very user friendly.
- Instead of VAN, using internet can cut communication costs by 50 percent
- It does not need special business network architecture.
- It is an excellent development tool for optimizing a wide range of business applications.
- It is time saving method.
- It allows companies to deal with a greater number of business partners that give competitive edge.
- It can replace numerous internal EDI applications.
- Internet tools like browsers and search engines are easy to use and most users are very comfortable using them.
- It offers many functions that is not available with traditional EDI, including collaboration, more business procedures and search engines.
- It allows companies to focus on their core business, not EDI issues.

8. What are the features of supply chain management?

Ans :

The features of supply chain management are as follows,

1. It has the capability to act as a source of raw-materials as well as finished goods from any part of the world.
2. All management as well as global business strategies results from accurate execution.
3. As the real time information is processed online, the information associated with supply chain is transparent.
4. It has the capability of managing information within the organization or between the organizations.
5. It is capable of performing integration of all processes present in supply chain that consist of various users, standards, information systems etc.
6. It is capable of developing and implementing accounting models that are used as the tools for reducing cost and increasing performance.

Choose the Correct Answer

1. Find which is an advantage of an EDI [d]
   (a) Shorter processing life cycle (b) Cost effective
   (c) Reduction in paper work (d) All
2. Find the limitation of EDI [d]
   (a) Securily (b) Speed
   (c) Accuracy (d) Expansive
3. Financial EDI is also termed as [b]
   (a) E-Banking (b) EFT
   (c) M-Banking (d) Digital cash
4. DSPS stands for ? [a]
   (a) Delayed with postal services (b) Delayed with non postal services
   (c) a & b (d) None
5. A full EDI system includes-levels of security [b]
   (a) 2 (b) 3
   (c) 4 (d) 5
6. Which protocol used at transport layer ? [b]
   (a) HTTP (b) TCP / UDP
   (c) IP (d) SMIP
7. VPN stands for [b]
   (a) Virtual public network (b) Virtual private network
   (c) Void public network (d) Void private network
8. _____ is another power form of enoryption used today [b]
   (a) Private key cryptography (b) Public key cryptography
   (c) Mixed key cryptography (d) None
9. How many security issues associated with EDI [a]
   (a) 4 (b) 3
   (c) 5 (d) 6
10. _____ protocol used at network layer [c]
   (a) HTTP (b) TCP
   (c) IP (d) FTP

Fill in the blanks

1. _____ is an importent document used in EDI.
2. In EDI buyer's computers sends purchase order to _____ computer.
3. In EDI seller's computers sends _____ to buyyer computer.
4. EDI _____ friendly.
5. EDI stands for _____ .
6. VICS stands for _____ .
7. VAN stands for _____ .
8. _____ EDI has limited adoption.
9. _____ EDI for insurance claims processing.
10. _____ comes under transport layer.

ANSWERS

1. Invoices
2. Seller's
3. Invoice
4. Environmental
5. Electronic data interchange
6. Voluntary industry communication standards
7. Value added network
8. Mobile
9. Health Care
10. UDP/TCP

One Mark Answers

Q1. VPN

Ans :

Any institution would wants its own private network for communication to ensure security.

Q2. Private-Key-Cryptography

Ans :

It is a common approach used in encyption. It involves the use of a shared key for both encryption by the sender decryption by recipient.

Q3. Give any 4 benefits of EDI

Ans :

1. Cost saving
2. Speed
3. Accuracy
4. Efficiency
5. Security

Q4. VAN

Ans :

Values added nerwork are private network where electronic business documents are exchanged between partners.

Q5. Financial EDI

Ans :

Financial EDI comprises the electronic transmission payments and remittance information between a payer, payee, and their respective banks.

UNIT V

E-Marketing Techniques

Introduction - New Age of Information - Based Marketing - Influence on Marketing - Search Engines & Directory Services - Charting the On-Line Marketing Process - Chain Letters - Applications of 5P's (Product, Price, Place, Promotion, People) E-Advertisement - Virtual Reality & Consumer Experience - Role of Digital Marketing.

5.1 E-MARKETING

5.1.1 Introduction

Q1. Define E-Marketing.

Ans :

Meaning

E-marketing is referred to those strategies and techniques which utilized online ways to reach target customers. There are millions of Internet users that daily access different websites using a variety of tools like computers, laptops, tablet and smart or android phone devices, and the number of internet users are increasing very rapidly. So every business seems to be jumping on the internet marketing bandwagon. The internet is most powerful tool that can put any business on solid footing with market leaders companies.

E marketing also known as online or internet advertising which uses the internet technology to promote online message to customer. E-marketing examples are email or social media advertising, web banners and mobile advertising.

5.1.2 E-Marketing Techniques

Q2. Explain in detail about E-Marketing Techniques.

Ans : **(June-19)**

Internet Marketing Techniques

There are two types of Internet marketing techniques,

(a) Passive

Passive technique refers to the methods in which users retrieves i.e., "pull" information from the website. The user actively participates and retrieves the required information.

(b) Aggressive

Aggressive technique refers to the methods in which website actively searches potential user's and tries to communicate with them. In this method "Push" technology is used by the websites without considering whether the customer are really interested or not.

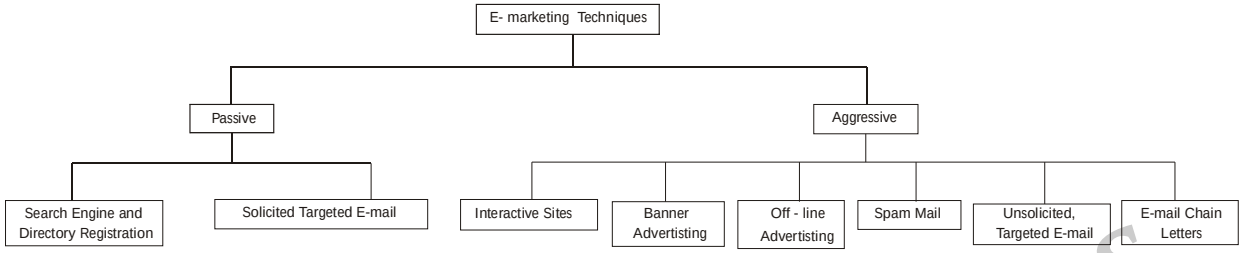


Fig: E-marketing Structure

The different Internet marketing techniques are,

1. Search Engine and Directory Registration

A search engine can be defined as a software system designed to search information on Internet. Unlike directories the search engines are considered to be the most popular method in finding sites. The search engines operates by taking user-defined words and boolean expression in search bar. The generated search results are represented in a line of strings which are a list of closely matched websites and are often called as Search Engine Results Pages (SERPs).

- The generate result content may be the combination of web pages, images and various types of files. So, when the user types certain string in search bar and clicks enter, the search engine periodically "crawls" through the Internet searching for new page: and updates the existing databases.
- The speed with which the engine performs addition and searches the number of location have major impact on the total number of sites indexed as well as on the revenue to the site. That is the more number of clicks to a site by user, the higher income to the site owner. In addition to this, the search engines maintain real-time information by using an algorithm on web-crawler.
- The designing of a webpage must be done in such a way that, it should increase the site's "Hit rates" and "Ranking' Both hit rates and ranking is very important because the designing of website list on Internet entirely depends on it.
- The hit rate can be defined as total number of matches obtained from user entered text and website given results. On the other hand, based on the hit-rates ranking is assigned to the websites. That is, that website with maximum hit rate is ranked firs: Subsequently, the following sites will be those sites that matches less with the user-typed text and the user's probability of visiting will also be less. However, different search engines operates differently and yields slightly different results.

2. Solicited Targeted E-mail

E-mail marketing is the most popular type of communicating channel. It offers quite reasonable charges for its services and supports HTML messages which comprises of colorful text with images of the products. It also provides links to the users through which they can order the product. There is a technique which has been adopted in order to attract visitors to the website. The aim is not only to gain their attention but to involve both the customer and website promoter. This type of techniques helps in promoting the products which are available on the Internet. It helps in promoting its own product as well as redirects them to the other sites of other products. These type of techniques attains benefits to the business by helping them in unloading the products which are not in use from the warehouse. So, the mutual agreement of businesses for offering services to the customers retain their interest thereby, forcing them to sign up for the services. Now signing up requires customers to furnish their details on the websites. If the websites requires more amount of information to be furnished then they can expect less number of visitors therefore websites should try to retrieve only the information that is necessary.

The above techniques can be considered as a "pull" technique because the user has requested the information but it can also be considered as a "soft push" technique because the website has gained user's interest by attracting them with the services offered by firm.

3. Interactive Sites

There are few websites which are trying to retain customers attention in an interactive manner. It is done only to create awareness about the benefits offered by them. This is to enable the user to makes a choices whether to buy the product or not. For instance, there is a website of an attorney who provides answer to the users for their queries on any kind of legal services. The site helps the visitors to clearly understand their situation and make them think whether they really need an attorney or not. Thus, the attorney is attracting its website visitors indirectly.

4. Banner Advertising

Online banner advertising is an effective technique but at the same time it is highly expensive. Companies pay some amount of money to the Internet marketing firms for providing them flash advertising banners which link to its business note. These links are usually provided on the pages of other websites. One of the advantage is, firms can easily keep a track of the visitors who visited the site by clicking on the link.

5. Off-line Advertising

Some of the off-line advertising methods used for promoting a website are television, print and radio. These techniques require more money when compared to the other methods. One of the example of this technique is victoria secret website promoting live fashion show. It promoted it's event not only on national and local television but also invested in the highest paid advertising event called the super bowl. Apart from this, it also gave its advertisement in some of the popular newspaper such as USA today, Barron's, the Wall Street Journal, the New York Times. Due to all these, the show got its success and massive number of people turned on to watch the show.

6. Spam Mail

Spam mail is a forceful means of attracting customers. The term spam mail refers to the unwanted and unrequested on-line email called 'junk mail' which is repeatedly sent to multiple recipients at a time. Here, the word spam means 'postage due marketing", which indicates thousands or millions of messages residing on the host Systems of recipients. These messages reside until they are deleted. This mail can be an advertisement from an organization that tries to sell something to the recipient. Usually spam mails are send to those who have never visited the site. Sending of spam mail requires e-mail addresses. Spammers usually collects the e-mail addresses from the social websites, chat rooms

etc. They also employ an e-mail appending techniques that makes use of known information about the Internet users and searches the e-mail addresses of such users based on the available information.

7. Unsolicited, Targeted E-mail

In this method, the customer receives e-mails related to sales/promotion of items even if they do not request for it. This method would be inefficient if too many e-mails are sent due to which the customer gets annoyed and may block the service. However, the method proves to be efficient if the e-mails are not sent in bulk. This can be done with the help of cookies. Cookies track the response of customers to those e-mails advertisements. Based on that, the e-mails are sent which grab the customers attention instead of annoying them.

8. E-mail Chain Letters

It is an aggressive advertising technique which is designed to attract the attention of the users. It is a low-cost technique which can be used by firms for promoting their products or services. For instance, whenever a user registers by visiting a site and forwards its link to others, then the referring individual gets extra benefits for every person who visited the site by clicking on the link.

Q3. What are the differences between Traditional and Online Marketing.

Ans :

Traditional Marketing	Online Marketing
It is difficult to measure. You cannot know how many people read your advertise and how many took favorable action upon viewing it.	It is measurable. You can know the number of people who viewed the online advertise, and the number of ones who purchased the product.
It is not cost-effective.	It is more cost-effective.
It is not so good for brand building.	It is fast and efficient for brand building.
In some way, it interrupts regular activities of users such as television advertises interrupt the program you are watching, billboards divert focus of the driver, etc.	It is not interrupting. The user can attend online advertises as per his/her convenience and preferences.
It may leave users' queries unanswered as printing or narrating complete information about the product or service may not be always feasible.	It can provide maximum information about the product or service, offers, and transactions.

5.1.3 Search Engines, Directory Services & Chain Letters

Q4. Define the terms :

(a) Search Engines

(b) Directory Services

(c) Chain Letters

Ans :

(a) Search Engines

A search engine can be defined as a software system designed to search information on Internet. Unlike directories the search engines are considered to be the most popular method in finding sites. The search engines operates by taking user-defined words and boolean expression in search bar. The generated search results are represented in a line of strings which are a list of closely matched

websites and are often called as Search Engine Results Pages (SERPs).

- The generated result content may be the combination of web pages, images and various types of files. So, when the user types certain string in search bar and clicks enter, the search engine periodically "crawls" through the Internet searching for new page: and updates the existing databases.
- The speed with which the engine performs updation and searches the number of location have major impact on the total number of sites indexed as well as on the revenue to the site. That is the more number of clicks to a site by user, the higher income to the site owner. In addition to this, the search engines maintains real-time information by using an algorithm on web-crawler.
- The designing of a webpage must be done in such a way that, it should increase the site's "Hit rates" and "Ranking' Both hit rates and ranking is very important because the designing of website list on Internet entirely depends on it.
- The hit rate can be defined as total number of matches obtained from user entered text and website given results. On the other hand, based on the hit-rates ranking is assigned to the websites. That is, that website with maximum hit rate is ranked firs: Subsequently, the following sites will be those sites that matches less with the user-typed text and the user's probability of visiting will also be less. However, different search engines operates differently and yields slightly different results.

(b) Directory Services

Directories are new online advertising mechanism that helps in representing business functionalities. These functionalities are represented in the index format that list and supplies links to the websites. The listing of the websites can be done either alphabetically or category wise. The indexes which are listed category wise displays the indexes in a sequential order. So, when the users click on one category, they are then navigated to the respective page. However, the role of the directory service is critical and it is important that the categories are listed in accordance

These days, there are many directory services that registers the websites free of cost. Some of these include info seek, Internet mall, the yellow pages and yahoo.

(c) Chain Letters

E-mail Chain Letters is an aggressive advertising technique which is designed to attract the attention of the users. It is a low-cost technique which can be used by firms for promoting their products or services. For instance, whenever a user registers by visiting a site and forwards its link to others, then the referring individual gets extra benefits for every person who visited the site by clicking on the link.

Q5. Explain different types of Search Engines.

Ans :

1. Crawler Based Search Engines

All crawler based search engines use a crawler or bot or spider for crawling and indexing new content to the search database. There are four basic steps, every crawler based search engines follow before displaying any sites in the search results.

a) Crawling

b) Indexing

c) Calculating Relevancy

d) Retrieving the Result

a) Crawling

Search engines crawl the whole web to fetch the web pages available. A piece of software called crawler or bot or spider, performs the crawling of the entire web. The crawling frequency depends on the search engine and it

may take few days between crawls. This is the reason sometimes you can see your old or deleted page content is showing in the search results. The search results will show the new updated content, once the search engines crawl your site again.

b) Indexing

Indexing is next step after crawling which is a process of identifying the words and expressions that best describe the page. The identified words are referred as keywords and the page is assigned to the identified key words. Sometimes when the crawler does not understand the meaning of your page, your site may rank lower on the search results. Here you need to optimize your pages for search engine crawlers to make sure the content is easily understandable. Once the crawlers pickup correct keywords your page will be assigned to those keywords and rank high on search results.

c) Calculating Relevancy

Search engine compares the search string in the search request with the indexed pages from the database. Since it is likely that more than one page contains the search string, search engine starts calculating the relevancy of each of the pages in its index with the search string.

There are various algorithms to calculate relevancy. Each of these algorithms has different relative weights for common factors like keyword density, links, or meta tags. That is why different search engines give different search results pages for the same search string. It is a known fact that all major search engines periodically change their algorithms. If you want to keep your site at the top, you also need to adapt your pages to the latest changes. This is one reason to devote permanent efforts to SEO, if you like to be at the top.

d) Retrieving Results

The last step in search engines' activity is retrieving the results. Basically, it is simply displaying them in the browser in an order. Search engines sort the endless pages of search results in the order of most relevant to the least relevant sites.

Examples of Crawler Based Search Engines

Most of the popular search engines are crawler based search engines and use the above technology to display search results. Example of crawler based search engines:

- Google
- Bing
- Yahoo!
- Baidu
- Yandex

Besides these popular search engines there are many other crawler based search engines available like Duck DuckGo, AOL and Ask.

2. Human Powered Directories

Human powered directories also referred as open directory system depends on human based activities for listings. Below is how the indexing in human powered directories work:

- Site owner submits a short description of the site to the directory along with category it is to be listed.

- Submitted site is then manually reviewed and added in the appropriate category or rejected for listing.
- Keywords entered in a search box will be matched with the description of the sites. This means the changes made to the content of a web pages are not taken into consideration as it is only the description that matters.
- A good site with good content is more likely to be reviewed for free compared to a site with poor content.

Yahoo! Directory and DMOZ were perfect examples of human powered directories. Unfortunately, automated search engines like Google, wiped out all those human powered directory style search engines out of the web.

3. Hybrid Search Engines

Hybrid Search Engines use both crawler based and manual indexing for listing the sites in search results. Most of the crawler based search engines like Google basically uses crawlers as a primary mechanism and human powered directories as secondary mechanism. For example, Google may take the description of a webpage from human powered directories and show in the search results. As human powered directories are disappearing, hybrid types are becoming more and more crawler based search engines.

But still there are manual filtering of search result happens to remove the copied and spammy sites. When a site is being identified for spammy activities, the website owner needs to take corrective action and resubmit the site to search engines. The experts do manual review of the submitted site before including it again in the search results. In this manner though the crawlers control the processes, the control is manual to monitor and show the search results naturally.

4. Other Types of Search Engines

Besides the above three major types, search engines can be classified into many other categories depending upon the usage. Below are some of the examples:

- Search engines have different types of bots for exclusively displaying images, videos, news, products and local listings. For example, Google News page can be used to search only news from different newspapers.
- Some of the search engines like Dogpile collects meta information of the pages from other search engines and directories to display in the search results. This type of search engines are called metasearch engines.
- Semantic search engines like Swoogle provide accurate search results on specific area by understanding the contextual meaning of the search queries.

Q6. Explain the Architecture of Search Engine?

Ans : **(Oct.-19)**

Search Engine refers to a huge database of internet resources such as web pages, newsgroups, programs, images etc. It helps to locate information on World Wide Web.

User can search for any information by passing query in form of keywords or phrase. It then searches for relevant information in its database and return to the user.

Search Engine Components

Generally there are three basic components of a search engine as listed below:

1. Web Crawler
2. Database
3. Search Interfaces

Web crawler

It is also known as **spider** or **bots.** It is a software component that traverses the web to gather information.

Database

All the information on the web is stored in database. It consists of huge web resources.

Search Interfaces

This component is an interface between user and the database. It helps the user to search through the database.

Search Engine Working

Web crawler, database and the search interface are the major component of a search engine that actually makes search engine to work. Search engines make use of Boolean expression AND, OR, NOT to restrict and widen the results of a search. Following are the steps that are performed by the search engine:

- The search engine looks for the keyword in the index for predefined database instead of going directly to the web to search for the keyword.

- It then uses software to search for the information in the database. This software component is known as web crawler.
- Once web crawler finds the pages, the search engine then shows the relevant web pages as a result. These retrieved web pages generally include title of page, size of text portion, first several sentences etc.

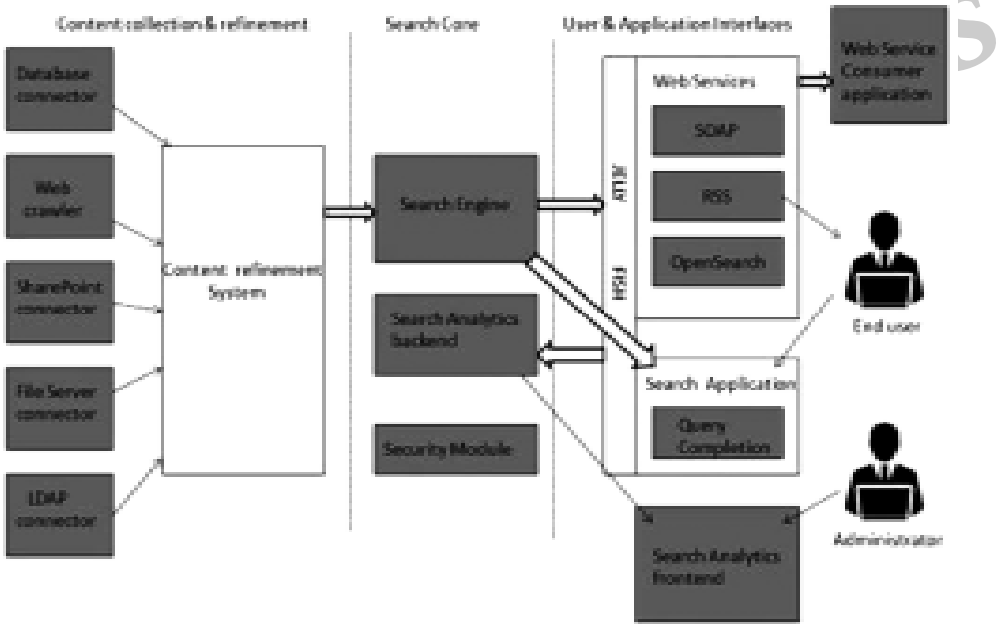
These search criteria may vary from one search engine to the other. The retrieved information is ranked according to various factors such as frequency of keywords, relevancy of information, links etc.

- User can click on any of the search results to open it.

Architecture

The search engine architecture comprises of the three basic layers listed below:

- Content collection and refinement.
- Search core
- User and application interfaces



Search Engine Processing

Indexing Process

Indexing process comprises of the following three tasks:

- Text acquisition
- Text transformation
- Index creation

Text acquisition

It identifies and stores documents for indexing.

Text Transformation

It transforms document into index terms or features.

Index Creation

It takes index terms created by text transformations and create data structures to support fast searching.

Query Process

Query process comprises of the following three tasks:

- User interaction
- Ranking
- Evaluation

User interaction

It supporst creation and refinement of user query and displays the results.

Ranking

It uses query and indexes to create ranked list of documents.

Evaluation

It monitors and measures the effectiveness and efficiency. It is done offline.

Examples

Following are the several search engines available today:

Search Engine	Description
Google	It was originally called **BackRub.** It is the most popular search engine globally.
Bing	It was launched in 2009 by **Microsoft.** It is the latest web-based search engine that also delivers Yahoo's results.
Ask	It was launched in 1996 and was originally known as **Ask Jeeves.** It includes support for match, dictionary, and conversation question.
AltaVista	It was launched by **Digital Equipment Corporation** in 1995. Since 2003, it is powered by Yahoo technology.
AOL.Search	It is powered by Google.
LYCOS	It is top 5 internet portal and 13th largest online property according to Media Matrix.
Alexa	It is subsidiary of Amazon and used for providing website traffic

5.2 New Age of Information - Based Marketing

Q7. Explain how the new age of offers advantage to digital marketing.

Ans :

Digital marketing is a new age marketing method to promote brands and products through electronic media. The Internet is the channel very closely associated with digital marketing while mobile messaging, mobile apps, pod-casts, radio channels also play key roles in this new age marketing. Digital marketing in e-commerce has changed the role of small business, retailers, manufacturers, and media companies.

The new age of information-based marketing differentiate interactive marketing into four areas:

(i) Retailers Vs Manufacturers

In e-commerce, the new age of information offer many advantages to both retailers and manufacturers. They can establish brand loyalty, market presence, marketing research; improve customer satisfaction, new markets and business partners etc.

They signify to do:

- **Market research and customer prospecting**

  In today's time, companies have to be clever as well as efficient in order to have good impression on the customers. For instance, companies instead of using traditional methods for gathering information about different needs of the customer, must make use of internet services. In this way, the cost of collecting information can be reduced. Also, the companies can provide better service to customers through internet.

- **Market presence method**

  Companies advertise their products in mostly two ways,

1. Through "in your face" advertising, the companies advertises their products in such a manner that they don't consider the profit or loss of selling the product. If customers are interested, they can buy the product. Otherwise, they don't buy the product.
2. By using value added corporate advertising method. In contrast to the above method, here the companies keep in mind the needs of customers when marketing their products. Consider an example, where you want to purchase a car online. The company on its website will display all the possible facilities that the customer wants in a car. Company also allows customers to post their suggestions regarding the car. In this way, company can improve its standard of performance.

In order to establish the market presence, it is important for the companies to know how they should promote their products. Some companies promote their products by offering discounts on them.

- **Product or services building method**

  Companies can also attract their customers by using a special method called product bundling method. Product bundling can be defined as a strategy in which company sells a product in combination with another product at a reasonable cost. For example, selling of particular software or hardware along with the computer etc.

  Bundling method can be categorized into three types. They are,

1. Only Component Method

In this method each product is sold individually.

2. Only Bundles Method

Only bundles method is just the opposite of the above method. In this type of method, product is not sold separately, but is combined or bundled with another product and then sold.

3. Mixed Method

This is the combination of only component and only bundles methods. Here, the product is sold separately as well as by combining with other products.

The feasibility of the above three methods depends on the following factors,

(i) Cost of using each method.

(ii) Profit incurred with each method

- **Information-based products pricing and priority method**

  However, the power of manufacturers is gradually shifting towards retailers. The retailer has now upper hand, they

have a position to measure customer response and to get broad range of information from market. The retailer can record each sale in a central database by scanning bar code on product. Through centralized buying, the retailer can ensure volume purchasing at low price, efficient inventory check and distribution chains.

(ii) Target and micromarketing

Target marketing is when a company or business directs its advertising to a certain type of consumer. It targets for a specific group of people defined by age, sex, socioeconomic status, race, or educational level. It is the process of identifying customers and promoting products and services via mediums that are likely to reach those potential customers. Companies engage and influence target communities using digital marketing.

Micromarketing is the narrowest approach of targeting. It is most effective technique for small business users to sustain, build and grow their own brand. It targets the potential customer at the very basic and personal level. In micro marketing, all advertising efforts are strongly focused on a small group of highly targeted consumers. Micro marketing is growing to become the most powerful tool businesses of all sizes can use to capture customers matched to their products and eventually turn these customers into loyal and repeat clients to the business.

Electronic commerce technology has put target and micromarketing within the research of small business. It gives information to the micro marketers not only about its own business but also consumer's information. Consumer target is two-way flow of communication between seller and buyer. Direct mail and telemarketing are two Fast growing ways to micro market. Technology is an essential tool in micromarketing.

There are two main types of micromarketing:

- Direct-relationship micromarketing is aimed at stimulating sales at retail establishments through direct contacts with consumers.
- Direct-order micromarketing is focused on selling products directly to consumers in their homes or businesses.

(iii) Small business (vs) large business

The key distinction between small and large business remains access to national and international marketing for advertising purposes. Earlier, small business rarely grows beyond local markets. The high costs of advertising have served to ensure that large companies held market domination. Small companies cannot afford such high cost of advertisement.

But with the advent of e-commerce, going global is even easier for small companies than it has been in the past. Now, small business can market their product overseas from their living room. The Internet and new technologies have allowed companies to easily expand to overseas markets. It also provides a tremendous database for the company to use to build their customer base.

E-commerce is a low risk business strategy for companies to use for developing an international customer base. The combination of global marketing with an Internet distribution method allows many companies to try their hand at reaching growing target markets overseas.

iv) Regulatory and legal implications of cyberspace marketing

Today, exorbitant advertising cost represents the barrier to reaching the customer effectively. Internet and other networks plays good role in advertising. The major difference between the internet and other l-way advertising media are ownership and membership

fees. Due to the empowering effect of internet-facilitated advertising however, the balance of power between large and small companies may change in future.

5.3 E-Commerce Influence on Marketing

Q8. Explain the impact of E-Commerce on Marketing.

Ans : **(Aug.-21)**

1. E-Commerce on Product

There is a great impact of e-commerce on the 'product' part of marketing mix. It has transformed many physical products/goods to digital goods. Audio music, videos, movies and even digital books are some of the examples of transformed goods.

E-commerce has brought a drastic change in many economies with the effects that turned as the marketing aspects of the products. They are,

(i) A vailability of new technology-based or technology enhanced products.

(ii) Availability of e-commerce results in change in the presentation, distribution and assortment of existing products.

(iii) Availability of new opportunities for the participation in Business-to-Business (B2B) commerce have come to the lime light.

The common attributes which a customer compares whether it may a product sold online or product sold from department stores is value, brand and product design.

2. E-Commerce on Physical Distribution

E-Cornmerce has a great impact on retailing, physical distribution and supply chain management. Internet has brought a wide change in the area of physical distribution with Just In Time (JIT) system, EDI and RFID. Supply Chain Management (SCM) is one of the major influences of the internet's open standards for information flow. The efficient flow of information sharing is acquired through some strategies which are leveraged by leading organizations. They include material planning, inventory planning, enhanced participation of partners, extending the research and the distribution channels on the internet.

Thus, internet reduces the interaction costs too on the market place among the manufacturers, wholesalers, distributors, dealers, retailers and customers.

3. E-Commeirce on Price

E-Commerce avails a great impact on the price by providing the case of comparing prices at different websites.

For example

E-campus come forward with an offer that it provides cheaper textbooks compared to bookstores.

The price of a product in the market consists of the elements such as production costs, coordination costs, profits and also the search cost.

Another mode of impact by the e-commerce on the price is the development of internet auctions. It enables the internet users to auction a wide variety of goods. The best example for online website offering internet auction is 'ebay'.

However, e-commerce involves selling of goods directly to the customer without the involvement of retailers and distributors to reduce the intermediary barriers. It provides products to the customers directly at low costs compared to the offline shopping.

5.4 Charting the On-Line Marketing Process

Q9. Outline the process of online marketing.

Ans :

A marketing strategy is essential to any organization conducting business over the Internet. A planned, organized online marketing campaign can generate traffic and sales faster than other marketing efforts. Early online marketing efforts were oriented toward technology. In recent years,

online marketing is shifted from the product focus to customer focus. The ability to sell online has become a critical part of most business's strategies. A good marketing plan for any business over web should cover:

1. Identify your target customer

It all starts with knowing who is your target audience and what they need or want. The aim of marketing is to know and understand the customer so well the product or service fits him and sells itself.

This is an important step in creating a strategy for marketing. Various factors are to be considered for determining the target audience such as demographic factors, psychographic factors, behavioral patterns, etc. The marketing plan is created after considering these factors. For e.g. cosmetic and beauty products are aimed at the women audience. The advertising strategy is derived accordingly.

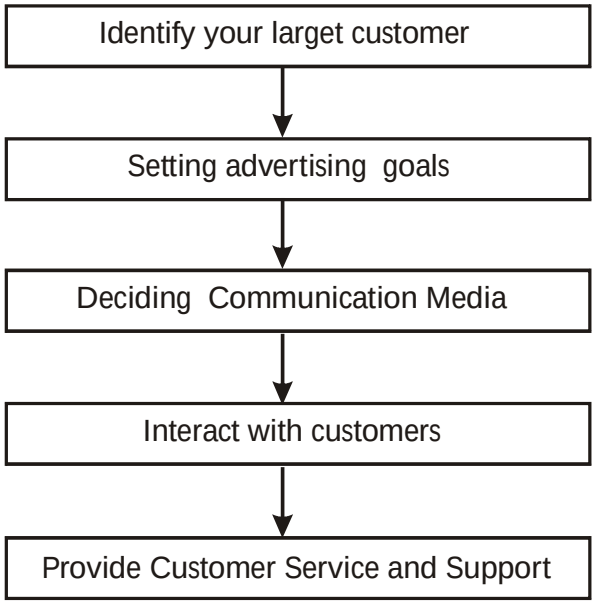
In addition to basic information like their location and demographics, you can get a better understanding of the types of sites they visit to learn about local businesses, what content they are interested in seeing, and more. Defining the target audience for your marketing can help you tailor content like social media posts, paid advertisements, photos and videos, as well as help you determine which marketing methods may be most beneficial to your business.

2. Setting advertising goals

Understanding of your audience's helps you to setting goals and focus on them. Set advertising media goals that satisfy your audience's unmet needs and capitalize on your organization's strengths and the opportunities available to it.

Once you have determined your advertising goals, select the target audience for your message. Advertisement that tries to reach "everyone" rarely succeeds. Successful advertising is written with a specific customer in mind. Try to picture the customer you must reach in order to achieve your advertising goals.

Your online goals should be coherent with your global business strategy. A few examples could be generating clients for your new product, increasing the repetition rate and recommendations of your already existent customers, increasing the number of times your product is positively mentioned, or the growth of traffic toy our online store.



3. Deciding Communication Media

The objective of marketing is to reach potential customers through the channels where they spend time reading, searching, shopping, or socializing online. The marketing plan is put to action using various channels of communication. It is important to choose the right media or a media mix for advertising. This depends on the product or service that is being marketed. The choice of the medium is made after considering the target audience and market research.

Online marketing is a set of powerful tools and methodologies used for promoting products and services through the internet. Online marketing includes a wider range of marketing elements than traditional business marketing due to the extra channels and marketing mechanisms available on the internet. The methods and techniques used for online marketing include email, social media, display advertising, search engine optimization, and more.

4. Interact with customers

One of the key advantages of online marketing for businesses is that it enables you to interact with your customers. It helps you understand and improve the way customers interact with your business at every stage of the sales. Interaction can be used to evaluate the results of marketing strategies and tailor them in real time to a changing environment.

Interactive marketing relies on customers expressing their preferences so that marketers can produce more relevant marketing messages. Unlike the outbound marketing of the past, interactive marketing creates a two way dialogue between a business and its customers. Advertising becomes a dynamic process that follows customers rather than leading them. Any time a customer is invited to provide feedback, express their personal preferences, or offer up demographic information, they are providing information that marketers can use to guide their advertising efforts. The methods and techniques used for interactive marketing include e-mail, sponsorships, blogging, social networking, widgets etc.

The more customers talk about a company in online forums, social networking sites, emails, and videos, the more their hopes and ideas for that company enter into the company's consciousness. Businesses can use this information to develop the products their customers are most excited to buy, increasing a customer's sense of respect and potential sales.

Companies tries to keep track of the advertising media in order to analyze whether their money which is being spend its leading to success or growing their business scale. But analyzing and keeping track of the different number of advertising media is very difficult. Especially to determine the advertising media which has caused the consumer to buy the service or products is a challenging task.

There are two types of channels.

(i) One Way Channels

In this channel, a message is sent to the customer without providing a direct technique through which a customer can contact the business person. Some of the examples are roadside bulletin boards, television, magazines, radio, newspaper direct mail.

(ii) Two Way Channels

In this channel, a message is sent to the customer and a technique is provided using which the customer communicates with the business person. Some of the examples are direct mail via phone responses, informercials via phone responses and inquiries, electronic mail with hypertext links to interactive websites, telemarketing.

Two way channels does not always provide two communication. For instance, there are some website which provide complete information about their product or services without enabling the user to communicate in return. On the other hand, when ever a firm takes all the benefits which are offered by two way channels then a customer receives a personalized message through which it gets attracted towards the services. Apart from this, there are three other advertising channels which has acted as a powerful tools for advertising. The techniques are consumer personal experience, word of mouth and news stories. The impact of these techniques are either positive or negative from the customer. Positive message outcome can be beneficial to company's reputation and success which can strengthen its position in the market. On the other hand, negative message outcome can lead to company's failure and decline in business sale.

5. Provide Customer Service and Support

Better customer service enables online marketing more effective. Customer service is the act of taking care of the customer's needs by providing and delivering professional, helpful, high quality service and assistance before, during, and after the customer's requirements are met. Coming up with a system that enables your marketing team to participate in customer service-related inquiries via social media or any other media can make for a better customer experience. You can encourage those happy customers to provide online reviews. Brand loyalty through customer service needs to be cultivated among online customers so that they can come back for repeat purchases.

5.5 Applications of 5P's (Product, Price, Place, Promotion, People)

Q10. Explain about 5P's and its application in detail.

Ans : **(Aug.-21, Oct.-20, June-19)**

The 5 Ps of E-Commerce are

1. Product
2. Pricing
3. Place
4. Promotion
5. Personalization

1. Product

A product is a good service that a business offers to its customers. Without some sort of viable product to offer, a business cannot survive. The product component frequently mentioned in the marketing literature is placed in the production section of the consumer oriented value chain. Traditional physical goods generally have a physical, tangible presence and include items such as automobiles, grocery items and printed newspapers. Traditional service products generally involve the performance of a task for the customer.

2. Pricing

The pricing of a good refers to the process involved in determining the amount to charge for a specific physical good or service. Pricing models are typically used to determine a firm's price. The firm's strategy typically dictates the type of pricing model chosen such as a high volume, low price strategy. Physical goods are frequently discounted if a large enough quantity is ordered. Frequent purchase systems are also being used to strengthen customer loyalty and encourage repeat buying. Because of the development of search engines, customers are easily able to compare prices of many goods offered by sale on the Internet.

3. Place (Distribution)

Place is frequently referred to as outbound logistics or distribution. The distribution task entails moving the product from producer to the customer. The product may travel directly from producer to customer or it may be channeled to wholesalers, warehouses and retailers.

4. Promotion

The sales and marketing function is a separate entity in the customer oriented value chain, and the activities performed in this category fall under the traditional marketing method called promotion. The successful promotion of a product requires a positive message to be received by potential customers. This message may be communicated in many ways.

(i) Paid advertising channels

(ii) News stories and press releases

(iii) Word of mouth

(iv) Consumers' personal experiences

The first technique, paid advertising channels, is a common method used by companies. Generally, a firm will have an advertising budget, and the funds are allocated amongst many advertising media, such as newspapers, television, magazines, radio etc. Using the Internet to create an awareness of products is relatively low cost and increasingly effective medium. In addition to the paid advertising mediums, three additional, very powerful advertising mechanisms are available news stories, word of mouth and consumers' personal experiences. The message sent out by these mechanisms can be positive or negative. Negative messages can be loss to a company success, while positive messages can help to strengthen a company's reputation and sales base.

5. Personalization

The Internet is the leading marketing platform, shifting the mass marketing to personalized marketing. Databases, cookies, and telecommunications technology make it very easy and cost efficient to make the products as personalized services. Personalization on the Internet refers to the ability of customers to receive personalized information (sales advertisements, coupons or document codes) or visit with a home page customized for them. Personalization crosses the boundaries of two of the marketing Ps, product and promotion, because it has the potential to impact and enhance both.

5.6 E-ADVERTISEMENT

Q11. What is meant by E-Advertisement ?

Ans :

Online advertising is a marketing strategy that involves the use of the Internet as a medium to obtain website traffic and target and deliver marketing messages to the right customers. Online advertising is geared toward defining markets through unique and useful applications.

Since the early 1990s there has been an exponential increase in the growth of online advertising, which has evolved into a standard for small and large organizations.

Online advertising is also known as Internet advertising or Digital Advertising.

A major advantage of online advertising is the quick promotion of product information without geographical boundary limits. A major challenge is the evolving field of interactive advertising, which poses new challenges for online advertisers.

Online advertisements are purchased through one of the following common vehicles:

- **Cost per Thousand (CPM)**

  Advertisers pay when their messages are exposed to specific audiences.

- **Cost per Click (CPC)**

  Advertisers pay every time a user clicks on their ads.

- **Cost per Action (CPA)**

  Advertisers only pay when a specific action (generally a purchase) is performed.

Examples of online advertising include banner ads, search engine results pages, social networking ads, email spam, online classified ads, pop-ups, contextual ads and spyware.

Q12. What are the basic ways of E-advertisement ?

Ans :

Following are the ways of E-Advertisements

1. Websites and Blogs

If you want to make the best of online advertising then you need to have a website or blog. Most online advertising is geared to direct people to your website, a central hub if you will. A large percentage of internet users use the internet as their preferred choice to find information about goods and services. Your website or blog is a permanent shop window that is available 24 hours a day 7 days a week.

2. Social Media Websites

Social Media websites such as Facebook and YouTube are constantly seeking to increase their advertising revenues. Both provide full details of their advertising possibilities on their websites;

- **Facebook**

  Facebook allows you to select your audience by location, age and interests and to test out simple image and text based ads. It suggests that companies advertising on Facebook

  - Advertise their own web page
  - Create demand for their products by creating relevant adverts
  - Publicize an event such as a product launch or anniversary.

  Payment is either made by "pay per click" or by "impression" (visitors see the ad whether they click it or not). You can set a daily budget that can be adjusted up or down at any time.

- **YouTube**

  YouTube offers a host of resources such as "how to" Guides and advertisers playbooks that will show you exactly how to set up and run your first successful marketing campaign with it.

  Twitter also recently announced that it allows users to place self serve ads.

3. Banners and Display Advertising

Display Banners, or Banner ads, were the first major method used for online advertising. By 2009, they had dropped to less than 23% of online advertising spend as pay per click or keyword advertising became the predominant force.

Display banners still have merit and are good for special offers or for reinforcing a brand. Banner ads are small adverts that normally come in various rectangle forms. They appear on websites and serve as a link directly to the advertiser's website: when you click on a banner your browser instantly redirects you to that site.

The popularity of banner ads is partly due to fact that they are simple to produce and publish. They are also highly measurable. Depending on the ad and the producer or service, advertisers can calculate the cost per sale – this is the amount of advertising money that is spent to make one sale.

4. Pay Per click (PPC) or Keyword Advertising

Search engines and many websites (including social networks sites such as Facebook and YouTube), carry small adverts with embedded URL's. When someone clicks on these adverts, the company that put them there is charged. This is considered by many to be the **best online advertising** method by far and has been growing at a remarkable rate. Unlike traditional advertising pay per click is user activated. Users like it, because it costs them nothing and they only use it if there is something that attracts them.

The advantage of pay per click for advertisers is that they only pay for the actual click through to their site. With other methods of advertising, both offline and online, you have no particular idea of how much it will cost you to attract each visitor. A user that clicks through into your site is likely to be

interested in what you have to say, because these users are actively looking for information or researching what you have to say, your product service or offering.

The largest Pay per Click advertiser by a long way is Google and they have a large library of information available to walk small business owners through the process of starting a successful PPC campaign.

5. Search Engine Optimization (SEO)

With the huge increase of companies operating online and selling on the internet there has been a dramatic increase in the competition between companies to get visitors to their websites. When carrying out research most people will only look at the first page of search results and quite often only the first two or three.

Making sure your site gets high up in the search results is important to the success of your website. There are ways to improve your search engine rankings, and search engine optimization is the method of doing this.

Q13. Discuss advantages and disadvantages of E-advertisements?

Ans :

Advantages of E - advertisement

- **Extensive coverage**

  Network connection with computers worldwide, it is a global network of large and small throughout the world in accordance with a variety of unified communications protocol consisting of information transmission network. Thus, over the Internet release wide range of advertising information, regardless of time and geographical constraints. From the advertising point of view, as an advertising medium , the wider the scope of dissemination of information, human contact, the more advertising effect will be. From the advertisers market, the consumer markets throughout every corner of the world, even a small business are likely to become an international company overnight.

- **Large-capacity information**

  Capacity to provide information on the most Internet companies is unrestricted. Businesses or advertising agencies can provide the equivalent of thousands of pages of advertising information and instructions, without having to worry every minute of the second increase on the expensive traditional media advertising costs . The network behind small banner ads, companies can put their company and its products and services, including product performance, price, model, morphology, etc. It seems necessary to explain all audiences, including detailed information made into a web page on their website. We can say that under certain circumstances the cost (for storing banner ads on other sites and pay for), companies can increase without limit advertising information, which in the traditional media cannot be imagined.

- **Strong interaction with sensory**

  Online advertising carrier is basically a multimedia, hypertext format, as long as the audience interested in a certain kind of product, you can tap the mouse further to know more, much more detailed and vivid information so that consumers can personally "experience" Products, services and brand. As virtual reality and other new technologies to online advertising, immerse experience for customers such as goods or services, and to book online, trading and settlement , will greatly enhance the effectiveness of online advertising.

- **Real-time and long-lasting unity**

  Internet media has the right to change the function of information, companies can make changes at any time according to need advertising information, 24 hour warehouse industry can adjust product prices, product information, you can instantly get the latest product information dissemination to consumers and online media can also be long-term preservation advertising information. Enterprise established for the product website, you can remain, waiting for consumer inquiries, enabling real-time and persistence unity.

- **Accurate delivery goals**

  The accuracy of online advertising include two aspects: one is corporate advertising target market for the accuracy of the network is actually one of a group composed of members of these organizations tend to have common hobbies and interests, potentially forming a thin market of the target customer base, companies can be specific to a corresponding product advertising consumer site up, clear target market, thereby leading to targeted audiences and the information will be Gang-related advertising messages with their professional and more attention to such information; hand reflected in the accuracy of your audience, the Internet is the need to pay, when consumers browse the site, select the advertising information will only really interested in, so to reach the high accuracy of the information online advertising audience side.

- **Non-compulsory transfer information**

  As we all know, newspaper ads , magazine ads , TV ads , radio ads , outdoor advertising and is a compulsive medium, all you have to do everything possible to attract visual and auditory, forced indoctrination into your brain. The online advertising belongs on-demand advertising, newspaper classified ads with nature not need to completely view, which can be freely inquiries will focus on looking for information presented to you, thus saving time and avoiding ineffective passive attention.

Disadvantages of E - Advertisement

Internet advertising has obvious advantages over traditional advertising, and also unavoidably brings its disadvantages, mainly in the following aspects:

- **Visitors to their online advertising "filtered"**

  Some visitors simply do not want to see, let alone have report responses. This situation is similar to other media, only a handful of consumers will buy your product, but that was it! Key is to be able to Canton. This part of the report information is passed to the consumer, the biggest difficulty lies in selecting the right online advertising target market, otherwise it is difficult to bring about the final ad buying behavior.

- **Network technology to filter the ads**

  On the one hand for the advertising network itself provides more space, opportunities, tools, and the origin of Internet culture itself is obnoxious commercialism, so there have been some network software and tools will plant a report as a network of cultural dregs filter out. In doing online advertising company, be sure to verify that the target market has a tendency to extreme aversion to commercial advertising, whether the use of these filters online advertising tool.

- **Lack of skills and marketing skills**

  Internet advertising is the guiding ideology of the "information marketing" rather than the "impression inducement," but the expression and transmission of information still need presentation skills to attract consumers. Therefore, only the aspects of the product and the information listed here is definitely not form a successful online advertising. Traditional advertising to generate an irresistible impression and attractive presentation skills and marketing skills in online advertising is still needed, even more demanding. How to marketers to consumers in rich information resources at the same time, but also have a strong attraction for them is a huge challenge.

- **Online advertising marketing personnel requirements are higher than other media**

  Compared to online advertising can almost be seen as a microcosm of the entire marketing, which involves how to attract customers to interact with customers, etc., which is the traditional advertising to customers impressed goals have to go very far. In short online advertising requires marketer's integrated use of traditional

advertising performance practices, providing information on the use of soft methods of marketing and network marketing techniques.

Q14. Explain various E-advertising techniques.

Ans :

Online Advertising Mechanisms/ E-advertising Techniques

Online advertising is a marketing strategy that make use of Internet to fetch website traffic and target, deliver marketing related information (in the form of messages) to the right customers. This strategy provides quick promotion of product information irrespective of geographical boundaries.

The different online advertising mechanisms include,

1. Directories
2. Search engines
3. Banners
4. Sponsorships
5. Portals
6. Online coupons.

1. Directories

Directories are new online advertising, mechanism that helps in representing business functionalities. These functionalities are represented in the index format that list and supplies links to the websites. The listing of the websites can be done either alphabetically or category wise. The indexes which are listed category wise displays the indexes in a sequential order. So, when the users click on one category, they are then navigated to the respective page. However, the role of the directory service is critical and it is important that the categories are listed in accordance to the user's expectations. This is necessary because if any category is missing or listed somewhere else, the user may think that the intended content is not present on that site. Apart from this, they exist many directory services that depict the organization businesses in multiple categories.

These days, there are many directory services that registers the websites free of cost. Some of these include info seek, Internet mall, the yellow pages and yahoo.

2. Search Engines

A search engines can be defined as a software system designed to search information on Internet. Unlike, directories, the search engines are considered to be the most popular method in finding sites. The search engines operates by taking user-defined words and boolean expression in search bar. The generated search results are represented in a line of strings, which are a list of closely matched websites and are often called as Search Engine Results Pages (SERPs). The generated result content may be the combination of web pages, images and various types of files. So, when the user types certain string in search bar and clicks enter, the search engine periodically "crawls" through the Internet searching for new pages and updates the existing databases. The speed with which the engine performs updation and searches the number of location have major impact on the total number of sites indexed as well as on the revenue to the site. That is the more number of clicks to a site by user, the higher income to the site owner. In addition to this, the search engines maintains real-time information by using an algorithm on web-crawler.

The designing of a webpage must be done in such a way that, it should increase the site's "Hit rates" and "Ranking". Both hit rates and ranking is very important because the designing of website list on Internet entirely depends on it. The hit rate can be defined as total number of matches obtained from user entered text and website given results. On the other hand, based on the hit-rates ranking is assigned to the websites. That is, that website with maximum hit rate is ranked first. Subsequently, the following sites will be those sites that matches less with the user-typed text and the user's probability of visiting will also be less. However, different search engines operates differently and yields slightly different

results Generally the ranking is done based on the following tags of Hyper Text Markup Language (HTML).

(i) Keyword Tag

It identifies keywords for search engines that uses the information,

(ii) Description Tag

It is the body of the text generated by search engine in order to describe the contents of the websites

(iii) Title Tag

It is the title of the website lists which is typically generated by search engines.

Furthermore, keywords, meta tags and frequency of words plays a critical role in search engines This is essential because, a repeated word throughout the page can increase the rating for searches using that word Although, thus, form of searching is most prevalent but it has been known that few website designers has made an incorrect use of it. This enabled search engine designers to make it as an abuse act. And such abuses are referred to as "search engine spamming". This sort of spamming is done using any of the following methods,

(i) In the first method, the word is consecutively repeated at prescribed intervals in the keyword section.

(ii) In the second method, the word is repeated using the same color text as background all over the page Such words on the web page becomes invisible to the user but will be visible to search engine. This results in degrading the ranking of the site and may also results in dropping the sites from the indexes.

Depending upon certain criteria the search engines performs ranking. The criteria includes,

(a) Location of Words on Websites

The ranking is done based on the location of the words on the website. The listing of words is done in order of importance. That is the words which are highly important are placed closer to the top of the page. This way of initially locating important words prior to table increases the ranks of the sites.

(b) Popularity of Links

Popularity of links represents how popular the links are? If the links popularity is high then its ranks will also be high. Also, an ideal site is that site if its links are created from other sites. Such strategies can be improved by employing reciprocal linking agreements with other sites.

(c) Reviewing Sites

The search engines performs the task of site reviewing and after reviewing it they rank the reviewed site prior to non-reviewed sites. Therefore, sites are relevant, if they are attention gaining.

(d) Case Sensitive

The search engines can be case sensitive. So, in such cases if the words are repeated with many variations, then the search engines pulls that sites and displays in the list.

3. Banners

Banners are the most popular form of online advertising method which is used to attract visitors. A banner typically can be defined as a rectangular shape box, about 60 pixels high and 360 pixels wide Generally banner advertisements contain texts, graphics or some times only graphics. They are meant to appear on screens of each engines, web browser software and web-sites so as to capture the attention of WWW users. These advertisements are referred to as "click-through" advertisements. They contain hypertext links corresponding to the site about which the banner is advertising.

The click-through advertising strategy is a unique kind of advertising wherein, it directly navigates the potential user to its intended transaction location. In contrast to other advertisements the click through is fastest as it enables the customer to just click the banner, perform necessary purchases and complete the purchase order instantly. The price of the banner advertisement is based on two features namely,

(i) Cost Per thousand Impressions (CPM)

(ii) Click Through Rate (CTR).

(i) **Cost Per Thousands Impressions (CPM)**

It can be defined as each time the act of viewing that page which displays the banner. Sometimes, it happens that the user doesn't wish to include graphics on the site, so he filters them out. By doing this, the banner wont be visible to the WWW user but it exist on the web page and is still considered as an impression.

(ii) Click Through Rate (CTR)

It is one of the most important feature in advertising rates. The role of the CTR is to count the number of users that visited the site.

Subsequently, also the firms keep monitoring their sites in order to track whether the visitors are interested on navigating through multiple pages on site, or whether they make any purchase from the site. Such an act is known as fulfillment. This term is used to keep track of those product or services that sold out as a result of making advertisements. To ease this task many software tracking devices were introduced, but they turned out to be imperfect and imprecise due to the following reasons,

- Sharing of computers by multiple users.
- Use of network servers and ISPs as gateways. This makes even more complex for keeping track of each individual user.
- Users disabling their cookie feature of their browsers
- Availability of intelligent agents or 'bots' and web crawlers in order to make advancements in WWW and updating indexes.

Apart from this, the advertising of banner can also be done by subscribing to a network such as double click. These firms role is to track visitors, visiting the sites within the network. It accomplishes this track by making use of cookies in the browser. Now, based on the generated reports on users, it targets specific types of banner advertisements.

4. Sponsorships

The sponsorships are one of the popular on-line advertising method. It is an ideal mechanism for generating brand recognition. They are similar to banners but there are two features that distinguishes it from banners.

- With sponsorships, the firm's banner can stay on the site for longer period of time may be a prespecified time slots or certain number of days.
- The sponsorships sends a assurance message specifying that sponsors has full trust in the company behind the website.

Besides this, firms that are interested in sponsoring the websites require minimum number of CPMs or click through or may also pay a flat rate.

5. Portals

Portals can be defined as a site that are designed to provide information to the WWW user. Apparently, they servers as "port of entry" onto the web and are meant to sell advertising space on their sites. The portal

offers customized pages, customized news items, stock quotes, search indexes and engines.

6. Online Coupons

The online coupons is one of the popular method of online advertisement. Many firms employs this type of advertising.

It is basically a token or ticket which is offered online to the customers. They can be re-claimed online, or can be printed for using in stores or can be mailed via postal mail. Beside this, they can be distributed through those sites that are specifically meant to distribute such coupons.

5.6.1 Virtual Reality & Consumer Experience

Q15. Explain briefly about Virtual Reality & Consumer Experience.

Ans :

Virtual Reality (VR) is an artificial environment that is created by using immersive multimedia on computer-simulated software VR is developed to create completely immersive environments and presented to the user in such a way that make users feel like they've truly entered simulated environments. Businesses are already embracing the technology.

In order to succeed in today's highly competitive markets, companies are taking advantages of technology to increase sales and profits. Thus Virtual Reality is becoming one of the potential technologies in the e-commerce world. It is the need of companies to improve customer experience. The idea of VR in e-commerce is used to deliver an amazing digital customer experience that will ultimately result in the increase of customer loyalty. As the consumers are using smartphones, tablets and computers for VR has become a powerful tool for omni-channel digital marketing strategy. Virtual Reality has a strong advantage where engaging with the consumer and delivering great customer experiences are concerned

- Companies are exploring the opportunity of using virtual reality as it connects brands and customers into a new level of experience in a 3D personal perspective where the company can involve their clients into an innovative storytelling and content development.
- VR can immerse consumers providing them with new experiences of a product or service. Designed to provide a sensory experience, it captures the attention and imagination of a consumer quite unlike any other technology and marketers with vision are making the most of its uniqueness.
- VR creates an opportunity for businesses to engage customers emotionally with their products. Virtual Reality presentations create an impact that lasts even after the experience has ended. VR show an ideal 360-degree perspective of any environment regardless of industry or application. As virtual reality becomes easier and more accessible, companies of all types are taking advantage of this technological breakthrough.
- VR creates a 360 degree perspective which gives consumers the ability to test-drive products. It creates trust between the product and consumers because the consumer generally trust the product that is adequately visual, technically proficient, and personalized presentations described by the salesperson rather than their words.
- VR provides opportunity to customers to see and describe what they want and customize. Companies incorporate VR to give their customers a better user experience while shopping digitally.
- Online retailers are already embracing the technology as consumer access to a VR shopping experience with 3D renderings for hundreds of products, and will eventually allow retailers to create their own VR stores.
- VR has become as central to the shopping experience as smart-phones are today, picking up on and exploiting consumers' appetite for ever-evolving and exciting experiences.

5.7 Role of Digital Marketing

Q16. Define digital marketing. What are the objectives of digital marketing?

Ans : **(Oct.-19)**

In simple terms, digital marketing is the promotion of products or brands via one or more forms of electronic media. Digital marketing is often referred to as online marketing, internet marketing or web marketing.

"Digital marketing" is the process of building and maintaining customer relationships through online activities to facilitate the exchange of ideas, products, and services that satisfy the goals of both parties.

Definition of Digital Marketing

Digital marketing can be defined as the process of promoting of brands using digital distribution channels comprising internet, mobile and other interactive channels. The basic advantage in this form of advertising lies in its low cost model.

Objectives of Digital marketing

One way to make sure you are found on the web is with an optimized digital marketing strategy. Most digital marketing strategies and campaigns have following 5 objectives.

- Reaching the right audience
- To engage with your audience
- To motivate your audience to take action
- Efficient spending on your campaign
- Return on investment (ROI)

Q17. Explain the need of Digital Marketing.

Ans : **(Oct.-20)**

1. Cost

Digital marketing is very cost efficient compared to traditional marketing channels like TV and print media. In fact, the cost of digital marketing campaigns will be a fraction of traditional marketing channels like print and tv.

2. Tracking

In digital marketing tracking the results is easy compared to traditional marketing channels. There are many analytics solutions which offer us a detailed report of the campaigns and these are real time reports tracked hourly and daily basis which assists you to revise your campaigns and strategies if outcome is not up to your expectation.

3. Target Audience

Targeting audience for your brands, products and services is very beneficial in digital media channels, like ads are a show based on age, profession, likes and dislikes region, sex and many other categories. Also ads are shown to people who have requirements like say a bookstore ad is shown to a person who is planning to buy books and searching for them on search engines. Digital marketing campaigns are inbound which increases the chances of conversions.

4. Interactive

Most of the traditional marketing channels are static and one-time production, where as digital marketing is an interactive channel where customers can engage with the brands, data can be shared effectively and using advance digital marketing techniques we can even influence them to get converted into potential clients.

5. Digital Revolution

One of the most important factors is rise of digital media platforms like search engines, social media sites, online portals, blogs etc in past few years, and the rate at which digital media is over taking a traditional medium. You might be aware that many print magazines and news papers media user base has decreased and in fact few of them are even out of business today. If you get into digital marketing first before your competitors you will have first mover advance and you will get ads at a very reasonable rate.

Q18. Explain the Classification of digital marketing. What are the Major Factors Affecting the Digital Marketing?

Ans :

Digital Marketing can be classified into Pull and Push marketing.

1. Pull

Pull digital marketing technologies involve the user having to seek out and directly grab (or pull) the content via web searches. Web site/ blogs and streaming media (audio and video) are good examples of this. In each of these examples, users have a specific link (URL) to view the content.

2. Push

Push digital marketing technologies involve both the marketer (creator of the message) as well as the recipients (the user). Email, SMS,RSS are examples of push digital marketing. In each of these examples, the marketer has to send (push) the messages to the users (subscribers) in order for the message to be received.

Major Factors Affecting the Digital Marketing

a) India's literacy rate is at 74.04%. Kerala is the most literate state in India, with 93.91% literacy. Six Indian states account for about 70% of all illiterates in India: Uttar Pradesh, Bihar, Madhya Pradesh, Rajasthan, Andhra Pradesh and West Bengal. Thus increasing literacy positively effecting the digital marketing growth in India .

b) Expensive technology

The mobile and internet rates are very competitive and now it is in reach of a common man also.

c) Cost of advertising

The cost of advertising is very low. One can have its own website in just Rs. 5000 in India. One can promote his product on Google with Google Adsense with just Rs.1000 a month.

d) Inherited limitation of Technology

In India the youth is very adaptable towards technology but still large population is not so friendly with the electronic gadgets.

e) Unavailability of Infrastructure facilities in India

The internet connectivity is still not available in Indian rural areas.

f) Believe in Traditional business practices

The small businessman having running its business in a small area and quite focused on that area only then he prefers Traditional ways of Promotion as it he finds it is more visible to the people around.

g) Lack of Online Business Experience

Lack of awareness about the digital marketing is also a major limitations in the growth of the digital market.

Q19. What are the components of digital marketing ?

Ans :

Digital Marketing is an effectual way of promoting services and products through electronic gadgets like Smartphones, desktops and tablets. Organizations can outspread themselves to reach the targeted audience with Digital marketing. Companies can choose numerous ways to get in touch with people.

Digital Marketing can help companies to analyze and run various marketing strategies and campaigns that are gaining outcome. It is one of the cost-effective ways to optimize ROI of organizations. As an organization, you can interact with your targeted customers without any intervention, anytime, anywhere to provide complete information regarding your products, brands and services. With Digital Marketing, businesses can build their brand value and people trust-flow in the market.

Components of Digital Marketing

Digital Marketing consists of multiple elements. Organizations utilize these components to

achieve high productivity. The basic and crucial elements of Digital Marketing are discussed below:

1. Search Engine Optimization

SEO is the list of activities that are carried out to boost the volume of traffic on a website through search engines like Google, Yahoo, Bing, MSN etc. Search Engine Optimization assures that a particular website can be found, for the keywords or phrases that users are searching in the search engine and that are relevant to their products and services, they offer.

2. Search Engine Marketing

Search Engine Marketing consists of paid methods that help in increasing visibility of a business or a brand. Paid approach indicates various methods like PPC (pay-per-click), in which search engines imposes cost to a company whenever their website is clicked by user.

3. Social Media Marketing

Nowadays, social media is a good way to reach to the audience. Using social media networks like Facebook, Twitter, Google Plus, LinkedIn etc, companies can acquire one fourth of the internet users and can share their offerings with them. Acquiring is not enough; Customer engagement is also very important to gain customer loyalty. So, engaging them with different offers can get more business for organizations.

4. E-mail Marketing

E-mail Marketing is an eminent way of targeting audience. Organizations can send newsletters, commercials and various offers related to their business, to their targeted audience as well as their old and existing customers.

5. Affiliate Marketing

In this method, organizations pay one or multiple affiliates for each lead or conversion, depending on the model they prefer. Affiliate marketing basically involves two or more companies in which one is paying other for the lead generation or any conversation. This can be considered as CPA (Cost Per Action), that the affiliates get for each conversation.

6. Mobile Marketing

Mobile marketing involves the process of promoting the products and services of an organization via mobile phones in the form of SMS, MMS, OR codes and VVR. It is a great approach because it can increase brand awareness easily.

7. Web Analytics

Web Analytics is an approach for tracking the user activity and traffic on a website. Using this approach, companies can easily track their consumer behavior, their interests, their geographical locations, number of new as well as the returning visits on their website. ROI of other marketing strategies can be determined with the web analytics technique.

Q20. What is the need and scope of digital marketing ?

Ans :

Need of Digital Marketing

Today, the Internet is a boon that provides endless opportunities for your small, medium or large business. Currently, more than half of the global population uses the Internet. Experts say that in coming years above 80% of the world population will be online. Therefore, digital marketing has become an integral part of marketing. In this blog post, we will help you understand the importance of digital marketing for your business.

1. Cost Effective

Digital marketing is one of the most cost-effective mediums of marketing. Traditional marketing methods such as print, broadcast, etc. require a lot of money and provide limited output. On the other hand, Digital Marketing is cheap; it suits all types and sizes of business.

2. Reach Mobile Consumers

Mobile users are growing day by day. Currently, a large portion of adult population in UK uses smartphones. With digital marketing, you can easily target your mobile

audience, and convert into your customers. Reaching mobile consumers is the key for business growth.

3. Content Connects Customers

Digital Marketing allows you to use content to get connected with customers. The advantage of content is that it allows you to speak more and express more. Hence it an effective medium to convey a clear message and attract huge website traffic for the purpose of increasing sales.

4. Get High ROI

Return On Investment (ROI) is an important factor in any marketing strategy. Traditional marketing methods have low return on investment and don't suit all types and sizes of business. Where as, Digital marketing is the best method to expand customer base and gain high return on investment.

5. Different Types of Digital Marketing

There are different types of digital marketing available such as Search Engine Optimization (SEO), Pay Per Click Advertising (PPC), Social Media Marketing (SMM), Content Marketing, Affiliate Marketing, etc. You can choose any type of marketing depending on your business type, business size and business goals.

6. Tap Social Media

Social media is on the rise. Right from teenagers to old aged people, everyone is on social media. You can improve the efficiency of your campaign by precisely targeting your potential customers based on their age, location and interests. Moreover, it is an effective method to improve brand visibility and brand awareness.

7. Build Credibility

Trust plays a vital role in converting a potential customer into customer. Digital Marketing strategies will help you to place your brand on first page of Search Engine Results Page (SERP). Being in the first page of Google not only establishes trust, but also increases website traffic. As the result of which, you get new customers effortlessly.

8. Easy to Measure Outcomes

Results of traditional marketing strategies are difficult to measure. Without knowing detailed outcome, it is difficult to gauge the success of a campaign. This is not the case with digital marketing. Every single digital marketing tactic you use is measurable. You can do an in-depth analysis of present results and fine tune to achieve another landmark.

Scope of Digital Marketing

1. New to digital era

Earlier people used to spend a lot of time on newspaper, television and radio to get the latest updates about what is happening around the world. But nowadays the internet has completely changed the lifestyle of the human beings for each and everything we are depending on internet. Slowly, we are shifting from traditional to digital media.

2. Easy to learn and implement

Yes..! what you have read is right. The digital marketing course is easy to learn and implement. First, a person should have patience and passion to learn and ability to think out of the box. But, initially no one can do wonders; as you gain experience you will be an asset to the organization based on your skills.

3. Flexible

As the complete tasks are done using internet one can work from anywhere. But, most of the companies won't provide access to it because as digital marketing is in the booming stage. One has to have good laptop and internet connection to do the work. As we see most of the tasks are done in a digital way. For example: to pay electricity bill; to book train or flight tickets; to order food; to book a cab; to book movie tickets; everything is done through online. So by this, we can say that we are entering into a digital world.

4. Fast Reach

Earlier the only way to get latest news or updates which are happening around the world are radio, newspaper and television.

Today's scenario is completely different when something is posted on social media it is going viral because most of the people got used to it.

5. Job opportunities

As we observe the demand for digital marketing is increasing and at the same time even the job opportunities also increasing. To promote any software product or a service these days even software companies are hiring a separate team for digital marketing. This shows that how much impact it is going to show in the market and to sustain from the competition.

6. ROI

In olden days most of the companies used to spend a huge amount on traditional marketing i.e newspapers or TV ads. But when digital marketing came into play the companies are investing less amount on marketing and at the same time, the return is more when compared to traditional marketing. So, even top brands are switching from traditional to digital.

7. Results are measured

In every platform (SEO, SEM, SMO, SMM and Email Marketing) of digital marketing the results are measured without waiting for a long time. With the help of a variety of tools the campaigns can be measured i.e from were the lead or conversions happened.

So, by considering the above eight parameters we can say that there is a lot of scope for digital marketing all over the world.

Q21. What are the benefits/advantages of digital marketing ?

Ans :

Advantages of digital marketing

1. Multi-channel

By using multiple channels, digital marketing offers many opportunities (complementary to traditional marketing) and allows users / companies to act at all levels of the purchasing process.

2. Cost-efficiency

Digital marketing is less costly than "traditional marketing indeed" Even stalwart traditional marketers know that they cannot compete the Internet's potential to reach thousands with just a single post". Printing and shipment costs are not taken into account in digital, this is the advantage of CPC (you pay only when click).

3. Immediate and borderless

Information, communication and advertising are instant and have no borders. This is the most efficient way to reach any customer anywhere and anytime; the best and unique way to create traffic;

4. Targeted

With digital marketing, it is very easy to target very precisely who you would like to reach; many criteria (demography, geography, function…) can be used to refine this reach. But do not to turn into a spammer;

5. Inbound Marketing

By creating and sharing content specifically designed to appeal to your customers, inbound marketing attracts and retains qualified prospects to your business. This approach is very efficient and can help you reach customers at any stage of the B2B purchasing process.

6. Data Collection and Analysis

With digital marketing, B2B companies can collect a lot of data (pages visited, products downloaded, basket average, time spent on which page, what keywords, what queries) about their customers. They can track all their actions online – provided the right trackers are in place. The collection and analysis of these data represent a major asset for the sale forces and the marketing teams; especially in the perspective of very targeted marketing addressed to specific segments, and the improvement of customer experience and satisfaction.

Benefits of Digital marketing over Traditional Marketing

1. Enlarged engagement with stakeholders

A well- sought and publicized website would aid potential clients, prospects and followers in viewing your website, looking at other available products and services, buying them, rating them as well as providing feedback. All of this, while enhancing the prospects of the business. A good website, is the equivalent of a online visiting card, with much more print space.

2. Instantaneous publicity

Digital marketing allows businesses to instantaneously publicize online within a matter of few minutes as compared to the time- consuming traditional methods such as distributing sales flyers. Usage of social media may be the most effective for sharing breaking news and enabling your messages to be communicated on a larger scale and quicker, through mere 'share options'.

3. Concurrent results and High measurability of efforts

It helps to track the traffic coming to the website, almost simultaneously, measuring important facets such as the conversions, demographics of the audience, their locations, peak trading times and much more, all offered by Google analytics.

4. Reduced costs

High advertising costs for both visual and print media can be replaced for more effective and marginal costs by using digital marketing by establishing successful online marketing strategies.

5. Brand development

Targeting the needs of the target audience becomes easier by maintaining a website which contains quality worthy content. This gives a boost to the value generation and leads to the generation of newer opportunities. The same can be achieved via email marketing and/or social media channels.

6. Leveled field for competing

Strong digital marketing strategy allows diverse businesses to compete with each other on similar lines irrespective of the size. A website with good repute, which entitles its customers to a smooth customer journey, is unparalleled. Also, in most cases , a small company can use the very same tools and techniques as a big company to play out in the same market.

7. Simple to measure

Google Analytics makes it easier to measure specific goals. It provides more in- depth reports of the data while making large chunks of consumer data comprehendible to all businesses. Google analytics has integrated with AdWords and launched real time analytics, all making the process even more manageable and aiding in value creation.

8. Non intrusive communication

Email marketing is a non – intrusive way of communicating commercial or fund raising messages to an audience, usually potential customers while giving them an option of opting out of the regular email alerts as per relevance, opposing the traditional marketing gimmicks such as calls and messages at inconvenient times.

9. Greater exposure

Digital marketing opens up doors to an international platform for businesses because even a single marketing campaign can be viewed worldwide. Costs of launching a campaign against traditional methods, is considerable. However, one should view it as a long- term investment and can also optimize the key word search content.

10. Scope for refinement of strategy

Whilst gathering and analyzing chunks of consumer data, strategies can be upgraded accordingly. This method allows businesses to refurbish their strategies at any point to maximize efficacy at the fraction of cost of traditional marketing.

Short Question and Answers

1. Define E-Marketing.

Ans :

Meaning

E-marketing is referred to those strategies and techniques which utilized online ways to reach target customers. There are millions of Internet users that daily access different websites using a variety of tools like computers, laptops, tablet and smart or android phone devices, and the number of internet users are increasing very rapidly. So every business seems to be jumping on the internet marketing bandwagon. The internet is most powerful tool that can put any business on solid footing with market leaders companies.

2. Search Engines.

Ans :

A search engine can be defined as a software system designed to search information on Internet. Unlike directories the search engines are considered to be the most popular method in finding sites. The search engines operates by taking user-defined words and boolean expression in search bar. The generated search results are represented in a line of strings which are a list of closely matched websites and are often called as Search Engine Results Pages (SERPs).

- The generated result content may be the combination of web pages, images and various types of files. So, when the user types certain string in search bar and clicks enter, the search engine periodically "crawls" through the Internet searching for new page: and updates the existing databases.
- The speed with which the engine performs updation and searches the number of location have major impact on the total number of sites indexed as well as on the revenue to the site. That is the more number of clicks to a site by user, the higher income to the site owner. In addition to this, the search engines maintains real-time information by using an algorithm on web-crawler.
- The designing of a webpage must be done in such a way that, it should increase the site's "Hit rates" and "Ranking' Both hit rates and ranking is very important because the designing of website list on Internet entirely depends on it.

3. Directory Services.

Ans :

Directories are new online advertising mechanism that helps in representing business functionalities. These functionalities are represented in the index format that list and supplies links to the websites. The listing of the websites can be done either alphabetically or category wise. The indexes which are listed category wise displays the indexes in a sequential order. So, when the users click on one category, they are then navigated to the respective page. However, the role of the directory service is critical and it is important that the categories are listed in accordance

These days, there are many directory services that registers the websites free of cost. Some of these include info seek, Internet mall, the yellow pages and yahoo.

4. Chain Letters.

Ans :

E-mail Chain Letters is an aggressive advertising technique which is designed to attract the attention of the users. It is a low-cost technique which can be used by firms for promoting their products or services. For instance, whenever a user registers by visiting a site and forwards its link to others, then the referring individual gets extra benefits for every person who visited the site by clicking on the link.

5. E-Advertisement.

Ans :

Online advertising is a marketing strategy that involves the use of the Internet as a medium to obtain website traffic and target and deliver

marketing messages to the right customers. Online advertising is geared toward defining markets through unique and useful applications.

Since the early 1990s there has been an exponential increase in the growth of online advertising, which has evolved into a standard for small and large organizations.

Online advertising is also known as Internet advertising or Digital Advertising.

A major advantage of online advertising is the quick promotion of product information without geographical boundary limits. A major challenge is the evolving field of interactive advertising, which poses new challenges for online advertisers.

6. Advantages of E - advertisement.

Ans :

- **Extensive coverage**

  Network connection with computers worldwide, it is a global network of large and small throughout the world in accordance with a variety of unified communications protocol consisting of information transmission network. Thus, over the Internet release wide range of advertising information, regardless of time and geographical constraints. From the advertising point of view, as an advertising medium , the wider the scope of dissemination of information, human contact, the more advertising effect will be. From the advertisers market, the consumer markets throughout every corner of the world, even a small business are likely to become an international company overnight.

- **Large-capacity information**

  Capacity to provide information on the most Internet companies is unrestricted. Businesses or advertising agencies can provide the equivalent of thousands of pages of advertising information and instructions, without having to worry every minute of the second increase on the expensive traditional media advertising costs . The network behind small banner ads, companies can put their company and its products and services, including product performance, price, model, morphology, etc. It seems necessary to explain all audiences, including detailed information made into a web page on their website. We can say that under certain circumstances the cost (for storing banner ads on other sites and pay for), companies can increase without limit advertising information, which in the traditional media cannot be imagined.

7. Banners.

Ans :

Banners are the most popular form of online advertising method which is used to attract visitors. A banner typically can be defined as a rectangular shape box, about 60 pixels high and 360 pixels wide Generally banner advertisements contain texts, graphics or some times only graphics. They are meant to appear on screens of each engines, web browser software and web-sites so as to capture the attention of WWW users. These advertisements are referred to as “click-through” advertisements. They contain hypertext links corresponding to the site about which the banner is advertising.

The click-through advertising strategy is a unique kind of advertising wherein, it directly navigates the potential user to its intended transaction location. In contrast to other advertisements the click through is fastest as it enables the customer to just click the banner, perform necessary purchases and complete the purchase order instantly. The price of the banner advertisement is based on two features namely,

(i) Cost Per thousand Impressions (CPM)

(ii) Click Through Rate (CTR).

8. Sponsorships

Ans :

The sponsorships are one of the popular on-line advertising method. It is an ideal mechanism for generating brand recognition. They are similar to banners but there are two features that distinguishes it from banners.

- With sponsorships, the firm's banner can stay on the site for longer period of time may be a prespecified time slots or certain number of days.
- The sponsorships sends a assurance message specifying that sponsors has full trust in the company behind the website.
- Besides this, firms that are interested in sponsoring the websites require minimum number of CPMs or click through or may also pay a flat rate.

9. Define digital marketing.

Ans :

In simple terms, digital marketing is the promotion of products or brands via one or more forms of electronic media. Digital marketing is often referred to as online marketing, internet marketing or web marketing.

"Digital marketing" is the process of building and maintaining customer relationships through online activities to facilitate the exchange of ideas, products, and services that satisfy the goals of both parties.

Definition of Digital Marketing

Digital marketing can be defined as the process of promoting of brands using digital distribution channels comprising internet, mobile and other interactive channels. The basic advantage in this form of advertising lies in its low cost model.

10. Need of Digital Marketing.

Ans :

1. Cost

Digital marketing is very cost efficient compared to traditional marketing channels like TV and print media. In fact, the cost of digital marketing campaigns will be a fraction of traditional marketing channels like print and tv.

2. Tracking

In digital marketing tracking the results is easy compared to traditional marketing channels. There are many analytics solutions which offer us a detailed report of the campaigns and these are real time reports tracked hourly and daily basis which assists you to revise your campaigns and strategies if outcome is not up to your expectation.

3. Target Audience

Targeting audience for your brands, products and services is very beneficial in digital media channels, like ads are a show based on age, profession, likes and dislikes region, sex and many other categories. Also ads are shown to people who have requirements like say a bookstore ad is shown to a person who is planning to buy books and searching for them on search engines. Digital marketing campaigns are inbound which increases the chances of conversions.

Choose the Correct Answers

1. How many approches we have for marketing. [a]
   (a) 2 (b) 3
   (c) 4 (d) 5
2. _____ marketing is not cost-effective. [a]
   (a) Traditional (b) Online
   (c) Offline (d) All
3. Google plus is an example of _____ marketing ? [d]
   (a) Online (b) Email
   (c) Blogs (d) Social media
4. _____ is an internet marketing by way of web logs. [a]
   (a) Blog (b) SEM
   (c) Viral (d) Social media
5. _____ and _____ influences on marketing [d]
   (a) Price, compitation (b) HR, film culture
   (c) Technology, economy (d) All
6. Which is an search engine components [d]
   (a) Web crawler (b) Data base
   (c) Interface (d) All
7. Chain letters are forworded by _____ ? [b]
   (a) Direct message (b) E-mails
   (c) Youtube (d) None
8. _____ P's are key marketing elements [b]
   (a) 4 (b) 5
   (c) 6 (d) 7
9. CPC stands for [b]
   (a) Cost per thousand (b) Cost per click
   (c) Cost per action (d) All
10. SEO stands for [b]
    (a) Search engine optimizer (b) Search engine optimization
    (c) a & b (d) None

Fill in the blanks

1. _____ is advertising & marketing the products of business over internet.
2. _____ is type of E-Marketing.
3. _____ is an disadvantage of E-Marketing.
4. Internet marketing is also referred as _____ .
5. _____ marketing creates brand awarness by using social networks.
6. Web crawler is also know as _____ .
7. _____ uses query and indexes to create ranked list of documents.
8. The purpose of search engine is to _____ request information from the huge data base
9. _____ is an example for search engine.
10. PPC stands for _____ .

ANSWERS

1. Online - Marketing
2. Blogging
3. Spam
4. Web - Marketing
5. Virtual
6. Spider
7. Ranking
8. Extract
9. Google
10. Pay-per-click

One Mark Answers

Q1. List 5 P's of marketing.

Ans :

1. Product
2. Price
3. Promotion
4. Place
5. People

Q2. E-advertisement.

Ans :

Online advertising is a marketing strategy that involves the use of internet as mediaum to obtain website traffic, target and delivering marketing message to the right consumer.

Q3. Marketing.

Ans :

Marketing is the activity, set of institutions and process for creating, communicating, delivering and exchanging offres that have value for consumers, clients, partners & society at large.

Q4. List types of marketing.

Ans :

1. Article marketing
2. Afficiate marketing
3. Video marketing
4. Email-marketing
5. Blogging

Q5. Virtual marketing.

Ans :

It is a marketing technique that creates brand awarness by using social networks.

Lab Programs

1. Create a web page to display the following output: (use textboxes, submit button).

Name: [ ]

Address: [ ]

[Submit]

Ans :

```
<html>
<head>
<title> using text boxes and submit botton
</title></head>
<body>
<center>
Name: <input type="text" name="t1"> <br><br><br>
Address: <input type="text" name="t2"><br><br><br>
<input type="submit" name="sub" Value="submit">
</center>
</body>
</html>
```

OUT PUT

Name: [ ]

Address: [ ]

[Submit]

---

2. Create a web page to display the time table of your class using tables.

Ans :

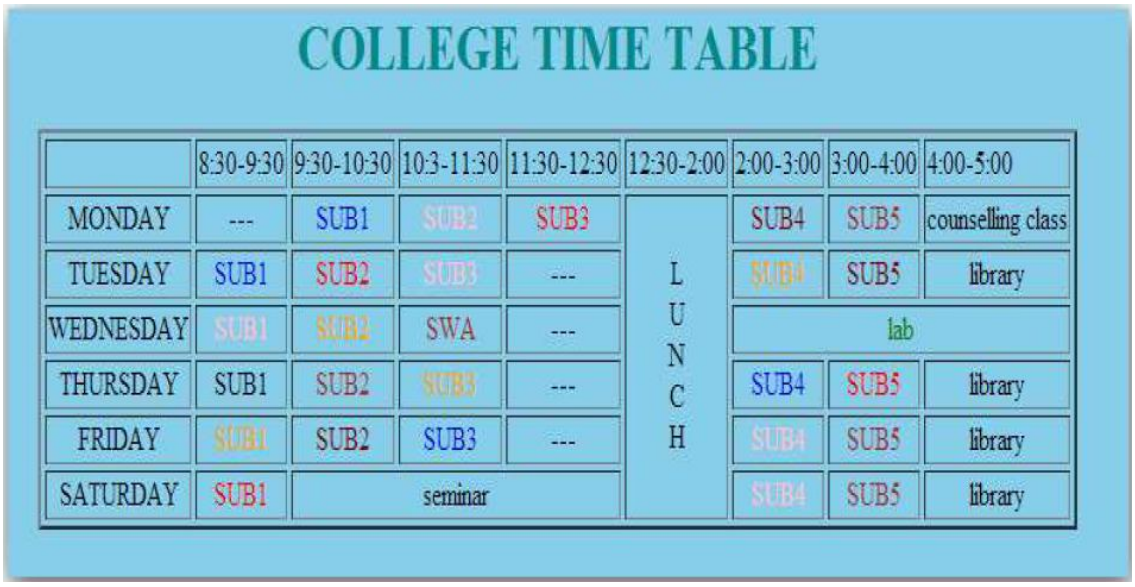
```
<html>
<head>
    <title>time table</title>
```

```
</head>
    <body bgcolor=”skyblue”>
    <H1><FONT COLOR=”DARKCYAN”><CENTER>COLLEGE TIME
    TABLE</FONT></H1>
<html>
<head>
    <title>time table</title>
</head>
    <body bgcolor=”skyblue”>
    <H1><FONT COLOR=”DARKCYAN”><CENTER>COLLEGE TIME TABLE</FONT></H1>
<table border=”2" cellspacing=”3" align=”center”>
<tr>
<td align=”center”>
    <td>8:30-9:30
    <td>9:30-10:30
    <td>10:3-11:30
    <td>11:30-12:30
    <td>12:30-2:00
    <td>2:00-3:00
    <td>3:00-4:00
    <td>4:00-5:00
</tr>
<tr>
    <td align=”center”>MONDAY
    <td align=”center”>—<td align=”center”><font color=”blue”>SUB1<br>
    <td align=”center”><font color=”pink”>SUB2<br>
    <td align=”center”><font color=”red”>SUB3<br>
    <td rowspan=”6"align=”center”>L<br>U<br>N<br>C<br>H
    <td align=”center”><font color=”maroon”>SUB4<br>
    <td align=”center”><font color=”brown”>SUB5<br>
    <td align=”center”>counselling class
</tr>
<tr>
```

```
<td align=”center”>TUESDAY
    <td align=”center”><font color=”blue”>SUB1<br>
    <td align=”center”><font color=”red”>SUB2<br>
    <td align=”center”><font color=”pink”>SUB3<br>
    <td align=”center”>–
    <td align=”center”><font color=”orange”>SUB4<BR>
    <td align=”center”><font color=”maroon”>SUB5<br>
    <td align=”center”>library
</tr>
<tr>
    <td align=”center”>WEDNESDAY
    <td align=”center”><font color=”pink”>SUB1<br>
    <td align=”center”><font color=”orange”>SUB2<BR>
    <td align=”center”><font color=”brown”>SWA<br>
    <td align=”center”>–
    <td colspan=”3" align=”center”><font color=”green”> lab
</tr>
<tr>
    <td align=”center”>THURSDAY
    <td align=”center”>SUB1<br>
    <td align=”center”><font color=”brown”>SUB2<br>
    <td align=”center”><font color=”orange”>SUB3<BR>
    <td align=”center”>–
    <td align=”center”><font color=”blue”>SUB4<br>
    <td align=”center”><font color=”red”>SUB5<br>
    <td align=”center”>library
</tr>
<tr>
    <td align=”center”>FRIDAY
    <td align=”center”><font color=”orange”>SUB1<BR>
    <td align=”center”><font color=”maroon”>SUB2<br>
    <td align=”center”><font color=”blue”>SUB3<br>
    <td align=”center”>–
    <td align=”center”><font color=”pink”>SUB4<br>
    <td align=”center”><font color=”brown”>SUB5<br>
    <td align=”center”>library
```

```
</tr>
<tr>
    <td align="center">SATURDAY
    <td align="center"><font color="red">SUB1<br>
    <td colspan="3" align="center">seminar
    <td align="center"><font color="pink">SUB4<br>
    <td align="center"><font color="brown">SUB5<br>
    <td align="center">library
</tr>
</body>
</html>
```

OUTPUT



COLLEGE TIME TABLE

	8:30-9:30	9:30-10:30	10:3-11:30	11:30-12:30	12:30-2:00	2:00-3:00	3:00-4:00	4:00-5:00
MONDAY	---	SUB1	SUB2	SUB3	LUNCH	SUB4	SUB5	counselling class
TUESDAY	SUB1	SUB2	SUB3	---		SUB4	SUB5	library
WEDNESDAY	SUB1	SUB2	SWA	---		lab		
THURSDAY	SUB1	SUB2	SUB3	---		SUB4	SUB5	library
FRIDAY	SUB1	SUB2	SUB3	---		SUB4	SUB5	library
SATURDAY	SUB1	seminar				SUB4	SUB5	library

3. Create a web page which accepts user input as shown below.

Name:

Address:

State:

City:

Pincode:

Place your order

Ans :

```
<html>
<head> <title> first program </title></head>
<body>
<center>
    <br><br><br>
    Name:       
<input type="text" length=10> <br><br>
    Address:    
<input type="text" length=10> <br><br>
    State:         
<input type="text" length=10> <br><br>
    city:           
<input type="text" length=10> <br><br>
    pincode:   
<input type="text" length=10> <br><br>
             <input type="submit"
    name="s1" value="place your order">
</center>
</body></html>
```

OUT PUT

Name: [ ]

Address: [ ]

State: [ ]

city: [ ]

Pincode: [ ]

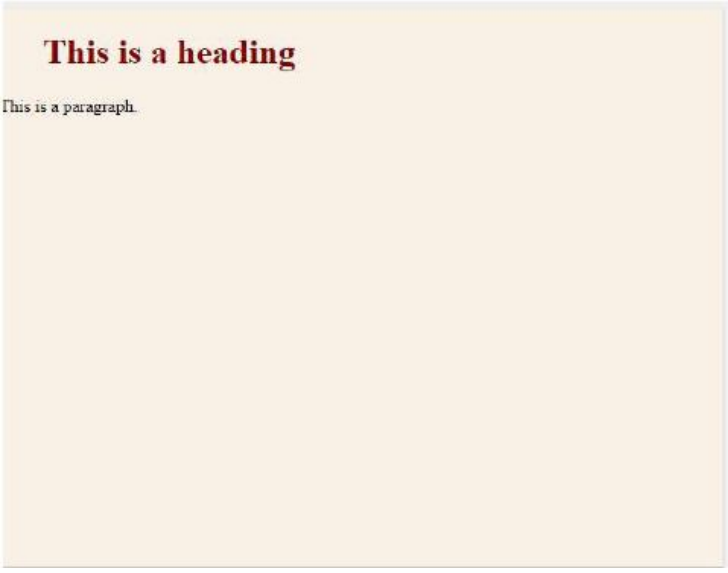
[Place your order]

4. Create a web page to modify the default properties of h1 tag using internal style sheet.

Ans :

```
<html>
<head>
<style>
body {
    background-color: linen;
}
h1
{
    color: maroon;
    margin-left: 40px;
}
    </style>
    </head>
    <body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
</body>
</html>
```

OUT PUT



5. Create a web page to display an ordered list of courses offered in your college.

Ans :

```
<html>
<head><title> ordered list </title></head>
<body>
<ol>
<li> B.Com(general) </li>
<li> B.Com(computers)</li>
<li> B.Com(computer Applications)</li>
<li> B.Com(hons)</li>
<li> B.Com(tax)</li>
<li> BBA</li>
</ol>
</body></html>
```

OUT PUT

1. B.Com(general)
2. B.Com(computers)
3. B.Com(computer Applications)
4. B.Com(hons)
5. B.Com(tax)
6. BBA

6. Create a web page to display a table with 2 rows and 2 columns. Also insert images in the cells of the table.

Ans :

```
<html>
<head>
    <title> friend names</title></head>
    <body>
    <table border=10>
<tr>
    <td> <img src="C:\Users\hp\Desktop\New folder (2)\th (1).jpg"> </td>
    <td> <img src="C:\Users\hp\Desktop\New folder (2)\th (2).jpg"></td>
</tr>
<tr>
```

```
<td> <img src="C:\Users\hp\Desktop\New folder (2)\th (3).jpg"></td>
<td> <img src="C:\Users\hp\Desktop\New folder (2)\th (4).jpg"s></td>
</tr>
</table>
</body>
</html>
```

OUT PUT

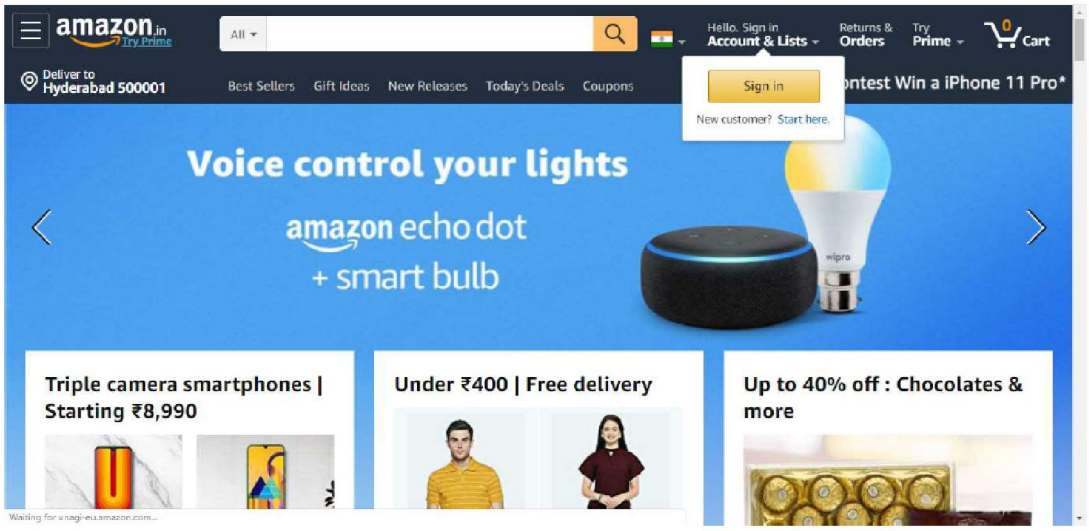
7. Create a web page to display a hyperlink which when clicked directs you to Amazon website.

Ans :

```
<html>
<head>
    <title> anchor tag
</title>
</head>
<body>
    <a href="https://www.amazon.in/"> amazon web site </a>
</body>
</html>
```

OUT PUT

amazon web site

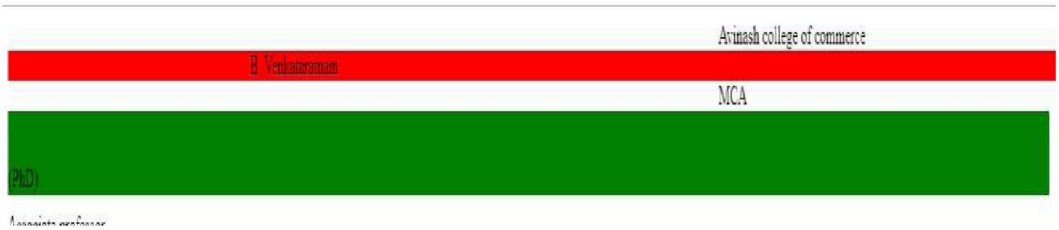


8. Create a web page to demonstrate various marquee effects over a given text.

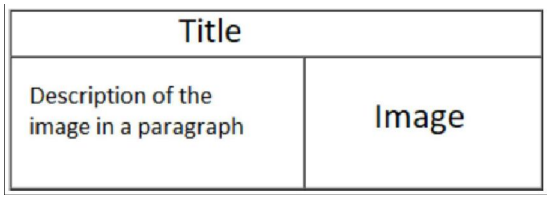
Ans :

```
<html>
<head>
    <title>HTML marquee Tag</title>
</head>
<body>
    <marquee>Avinash college of commerce</marquee>
    <marquee width="5000" bgcolor= "red" direction = "right">B.
Venkataratnam</marquee>
    <marquee direction = "left">MCA</marquee>
    <marquee height="50" bgcolor="green" direction = "up">(PhD)</marquee>
    <marquee direction = "down">Associate professor</marquee>
</body>
</html>
```

OUT PUT



9. Create a web page to display the following output: (take your own data into consideration).



Ans :

```
<html>
<body>
    <table border=2>
<tr>
    <td colspan="2" align="center"> title </td>
</tr>
<tr>
    <td> <p>this is an image <br> description</p> </td>
    <td> <img src="C:\Users\hp\Pictures\Camera Roll\WIN_20180623_12_03_59_Pro.jpg"
height=20, width=50> </img> </td>
</tr>
</table>
</body>
</html>
```

OUT PUT

10. Create a web page to display the following output: (a+b)2=a2+2ab+b2 H2SO4.

Ans :

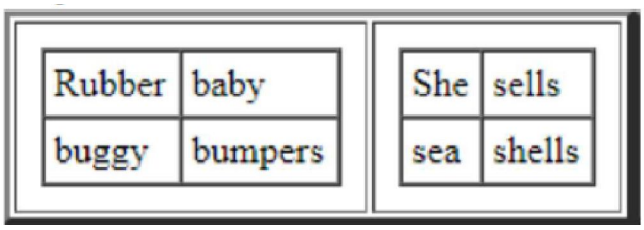
```
<html>
<head>
    <title> sub & sup </title> </head>
<body>
    (a+b) <sup> 2</sup> = a <sup> 2</sup> + 2ab+ b <sup> 2</sup>
```

```
<br>
h <sub> 2 </sub> so<sub> 4 </sub>
</body>
</html>
```

OUT PUT

$(a+b)^2 = a^2 + 2ab + b^2$ h_2SO_4

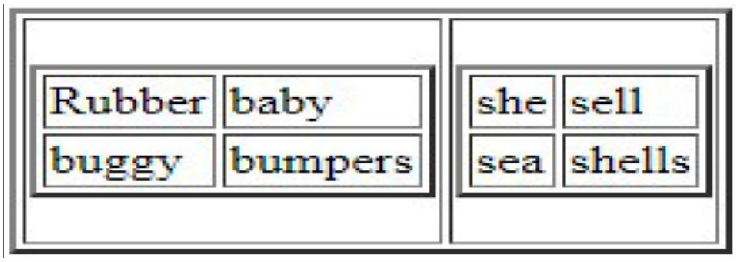
11. Create a web page to demonstrate the usage of nested tables as shown in the diagram below:



Ans :

```
<html>
    <head><title> nested tables</title></head>
    <body>
    <table border=2, height="100", width="200">
<tr>
    <td> <table border=2>
<tr>
    <td> Rubber</td>
    <td> baby </td>
</tr>
<tr>
    <td> buggy </td>
    <td> bumpers</td>
    </tr></table></td>
    <td> <table border=2>
<tr>
    <td> she </td>
    <td> sell</td></tr>
    <tr> <td> sea </td> <td> shells</td></tr></table></td>
</tr></table>
</body>
</html>
```

OUT PUT



Q12. Create a web page which acts as a home page where your college name is properly aligned with the logo of your college followed by address and contact details at the center of the page.

Ans :

```
<html>
<body>
    <img src="C:\Users\hp\Desktop\New folder (2)\Untitled.jpg">
    <DIV STYLE="POSITION:ABSOLUTE; LEFT:320; TOP:10;">
    <h1 height=50> AVINSAH COLLEGE OF COMMERCE </H1></div>
<center>
    <b>Address </b><br><br>
L.B Nagar : <br>
ACC Towers<br>
Plot No.59, Siri Nagar Colony,<br>
LB Nagar, Hyderabad<br>
(Adjacent to Ranga Reddy Court)<br><br><br>
<b> Contact </b><br><br>
For Student Queries:<br>
+91 99 49 22 22 44<br>
For Admissions:<br>
9949 22 22 44
</center>
</bdoy>
</html>
```

OUPUT

Address

VC'S OFFICE
Primary Address 1:
Administrative Building
Osmania University Campus
Hyderabad-500007,
Telangana State,
India.

Contact
vc@osmania.ac.in
+91-40-27682364, 27682221
+91-40-27098704, 27098003

13. Create a web page to demonstrate definition lists by taking various applications of ecommerce as an example.

Ans :

```
<html>
    <head> <title> definition list</title></head>
<body>
<dl>
<dt> b2b</dt>
    <dd> business to business</dd>
    <dt> B2C</dt>
    <dd> business to customer </dd>
    <dt> C2B</dt>
<dd> Customer to Business </dd>
<dt> C2C </dt>
<dd> Customer to Customer</dd>
</dl>
</body>
</html>
```

OUPUT

b2b
    business to business
B2C
    business to customer
C2B
    Customer to Business
C2C
    Customer to Customer

14. Create a web page to display a bulleted list of subjects available in the current semester.

Ans :

```
<html>
<head>
<title>
    bulleted list
</title>
</head>
<body>
    <h1> subjects in current semester</h1>
<ul>
<li>
    E-Commerce
</li>
<li>
    RDBMS
</li>
<li>
    Commerce Lab
</li>
<li>
    GST
</li>
<li>
    Advanced Accounting
</li>
</ul>
</body>
</html>
```

OUT PUT

15. Create a web page to give scrolling effect of an image (preferably your college logo).

Ans :

```
<html>
<head>
<title> scrolling image
</title>
</head>
<body>
<marquee>
<img src="C:\Users\hp\Desktop\New folder (2)\th (1).jpg">
</marquee>
</body>
</html>
```

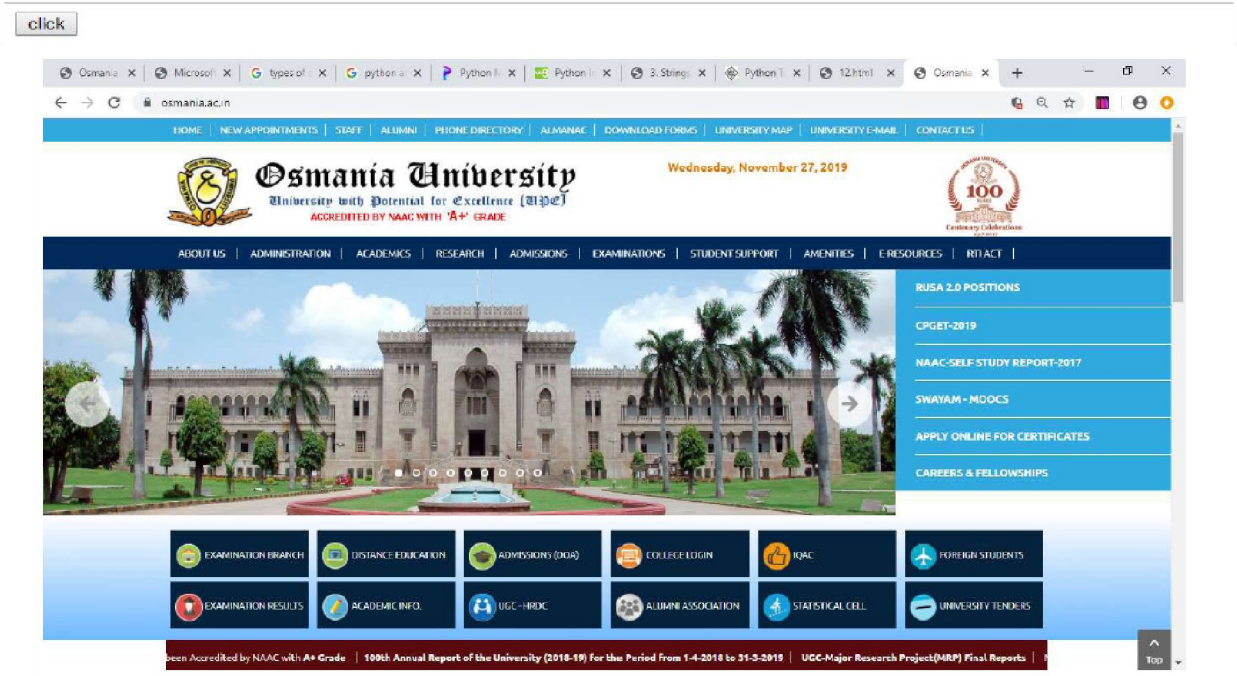
OUT PUT

16. Create a web page to display a button which when clicked directs you to your college website.

Ans :

```
<html>
<head>
<title> button</title>
</head>
<body>
<form>
<a href="http://avinashcollege.com"><input type="button" value="click">
</a></form>
</body>
</html>
```

OUT PUT

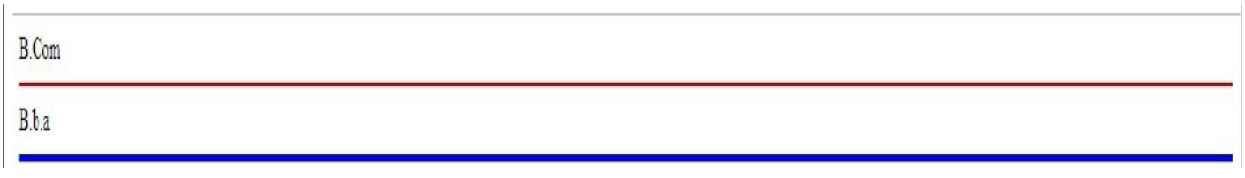


17. Create a web page to display various courses in your college. The courses should be separated by a horizontal ruler of varying sizes and colors.

Ans :

```
<html>
<head><title> Courses
</title></head>
<body>
B.Com <br>
<hr size="2", color="red"></hr>
B.b.a <br>
<hr size="4", color="blue"></hr>
</body>
</html>
```

OUT PUT

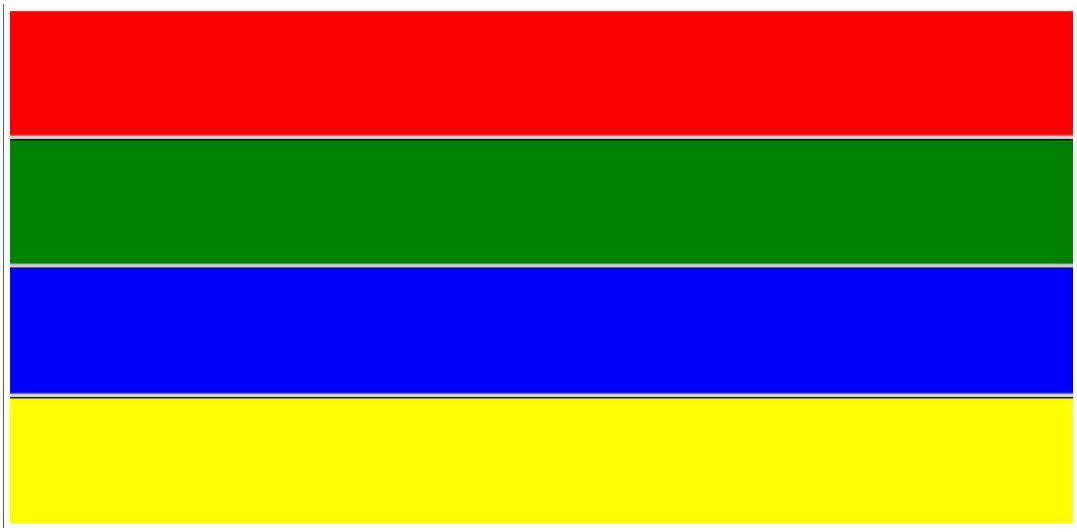


18. Create a web page to display four horizontal frames each frame containing a different color.

Ans :

```
<html>
<head>
<title>
    horizontal frames
</title>
</head>
<frameset rows= "25%,25%,25%,25%">
<frame src="red.html"></frame>
<frame src="green.html"></frame>
<frame src="blue.html"></frame>
<frame src="yellow.html"></frame>
</frameset>
</html>
    Red.html
<html>
<body bgcolor="red">
</body>
</html>
    Gree.html
<html>
<body bgcolor="green">
</body>
</html>
    Blue.html
<html>
<body bgcolor="blue">
</body>
</html>
    Yellow.html
<html>
<body bgcolor="yellow">
</body>
</html>
```

OUT PUT



19. Create a web page to display four vertical frames each frame containing a different color.

Ans :

```
<html>
<head>
<title>
    vertical frames
</title>
</head>
    <frameset cols= "25%,25%,25%,25%">
    <frame src="red.html"></frame>
    <frame src="green.html"></frame>
    <frame src="blue.html"></frame>
    <frame src="yellow.html"></frame>
</frameset>
</html>
    Red.html
<html>
<body bgcolor="red">
</body>
</html>
    Gree.html
<html>
```

```
<body bgcolor="green">
</body>
</html>
```

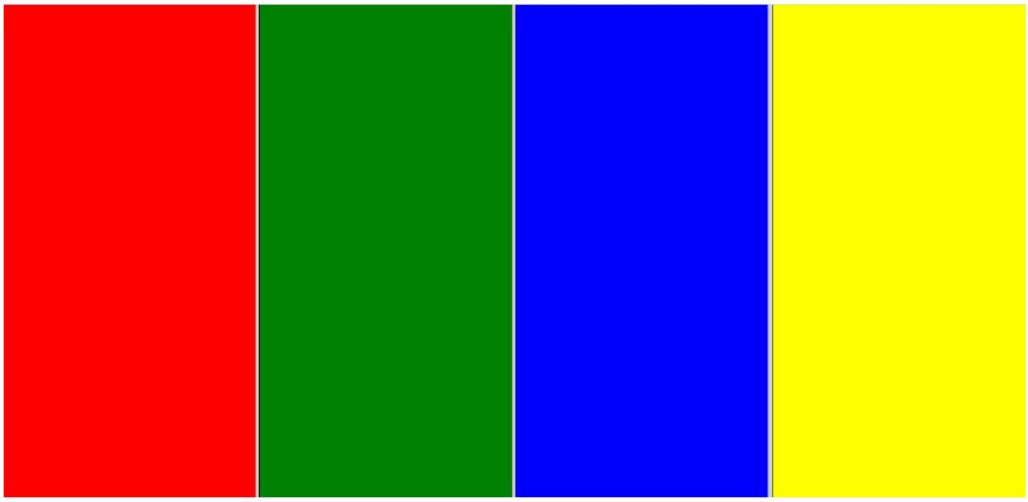
Blue.html

```
<html>
<body bgcolor="blue">
</body>
</html>
```

Yellow.html

```
<html>
<body bgcolor="yellow">
</body>
</html>
```

OUT PUT



20. Create a web page to display a table containing 2 rows and 2 columns which contains the names of your friends and each cell filled with different background colors.

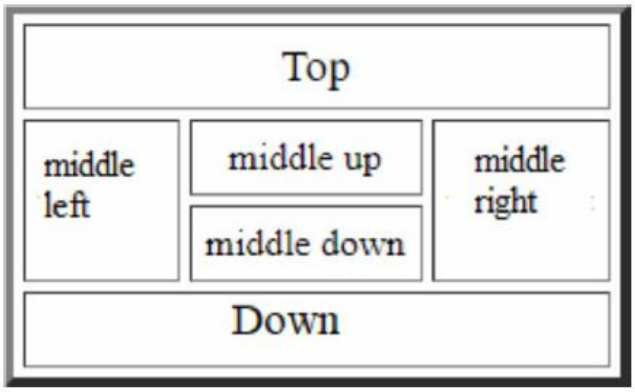
Ans :

```
<html>
<head>
<title> table
</title>
</head>
<body>
<table border=10>
```

```
<tr>
<td bgcolor="red"> ratnam </td>
<td bgcolor="green"> nani </td>
</tr>
<tr>
<td bgcolor="blue"> sar</td>
<td bgcolor="yellow"> venkat</td>
</tr>
</table>
</body>
</html>
```

OUT PUT

21. Create a web page to demonstrate the usage of rowspan and colspan for the figure below:

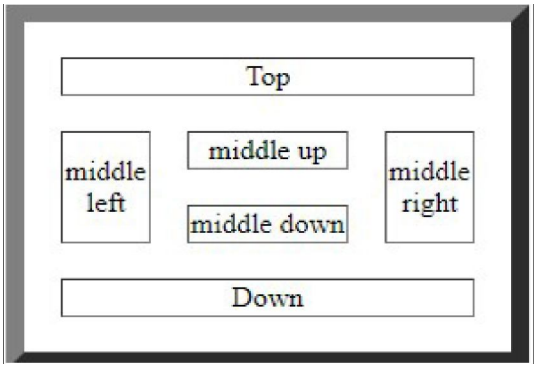


Ans :

```
<html>
<body>
<center>
    <table border="10" cellpaddin="20" cellspacing="20">
<tr>
    <td colspan="3" align="center" > Top </td></tr>
<tr>
    <td rowspan = "2" align="center">middle <br> left</td>
```

```
<td align="center">middle up </td>
<td rowspan=2 align="center"> middle <br> right</td>
</tr>
<tr>
<td align="center">middle down</td>
</tr>
<tr>
<td colspan = "3" align="center" >Down</td>
</tr>
</table>
</center>
</body>
</html>
```

OUT PUT

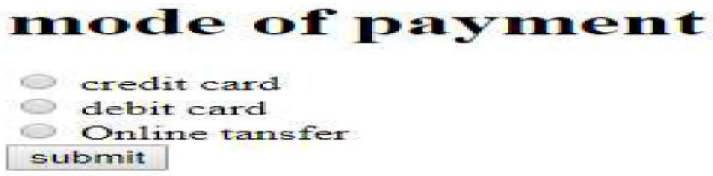


22. Create a web page which asks for mode of payment which includes the options: Credit card/Debit card/Online transfer (use radio buttons).

Ans:

```
<html>
<head><title> mode of payment
</title></head>
<form>
<h1> mode of payment </h1>
<input type="radio" name="payment" value="credit"> credit card<br>
<input type="radio" name="payment" value="debit"> debit card <br>
<input type="radio" name="payment" value="online"> Online tansfer <br>
<input type="Submit" value="submit">
</form>
</html>
```

OUT PUT



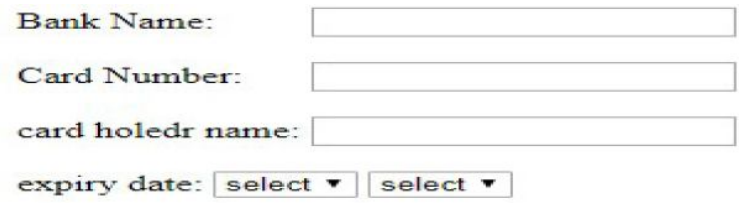
23. Create a web page which asks the user to enter his credit card details. Use textboxes, drop down buttons.

Ans :

```
<html>
<head><title> credit card
</title></head>
<form>
Bank Name:         
<input type="text"> <br><br>
Card Number:      
<input type="text" ><br><br>
card holder name:
<input type="text"><br><br>
expiry date:
<select>
<option> select </option>
<option>jan</option>
<option>feb</option>
<option>mar</option>
<option>april</option>
<option>may</option>
<option>jun</option>
<option>july</option>
<option>aug</option>
<option>sept</option>
<option>oct</option>
<option>nov</option>
<option>dec</option>
</select>
```

```
<select>
<option> select</option>
<option> 2022</option>
<option> 2023</option>
<option> 2024</option>
<option> 2025</option>
<option> 2026</option>
<option> 2027</option>
<option> 2028</option>
</select>
</form>
</html>
```

OUT PUT



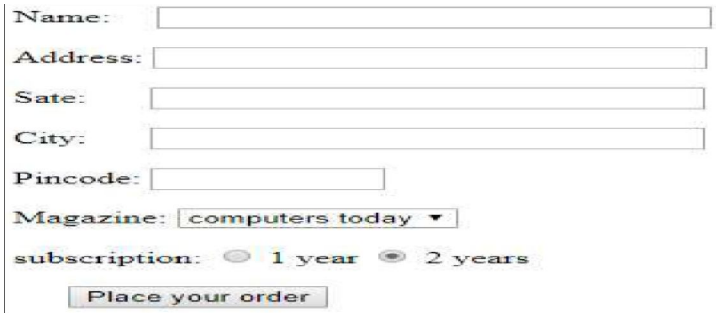
24. Create a web page to generate a purchase order as shown below:

Ans :

```
<html>
<head> <title> Purchase order
</title></head>
<form>
```

```
Name:    
<input type="text" size=30> <br><br>
Address:
<input type="text" size=30> <br><br>
Sate:      
<input type="text" size=30> <br><br>
City:      
<input type="text" size=30> <br><br>
Pincode:
<input type="text" size=10> <br><br>
Magazine:
<select>
<option> computers today </option>
</select><br><br>
Subscription:
<input type="radio" name="order" value="one"> 1 year
<input type="radio" name="order" value="two" checked> 2 years <br><br>
      <input type="button" value= "Place your order">
</form>
</html>
```

OUT PUT



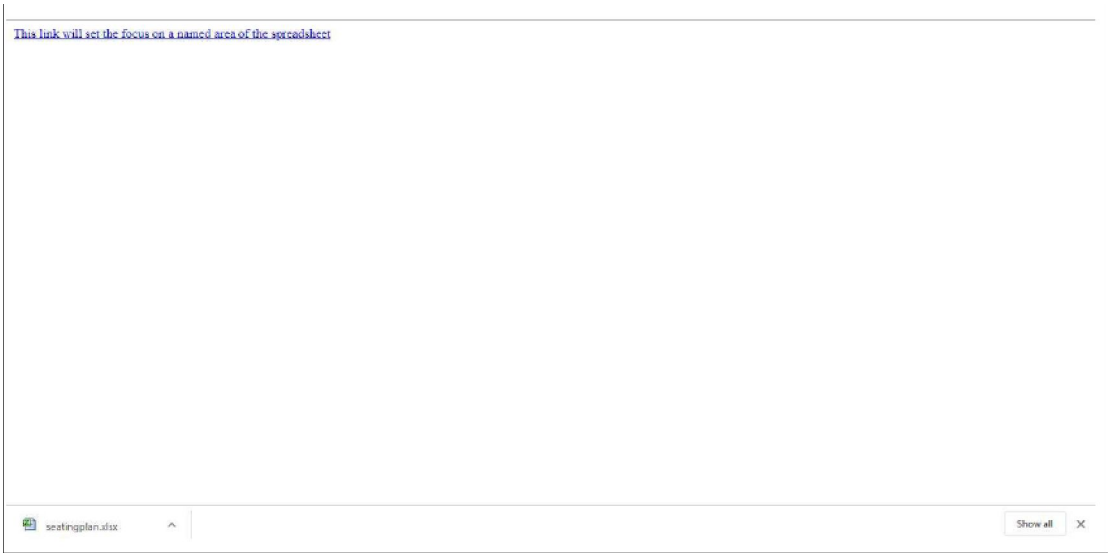
25. Create a web page to display a hyperlink which when clicked displays excel sheet containing student details.

Ans :

```
<HTML>
<HEAD>
<Title>Excel Linking Example</Title>
</HEAD>
```

```
<body>
<p>
<a href= "C:\Users\hp\Downloads\seatingplan.xlsx" >
This link will set the focus on a named area of the spreadsheet
</a>
</p>
<form>
</form>
</body>
</html>
```

OUT PUT



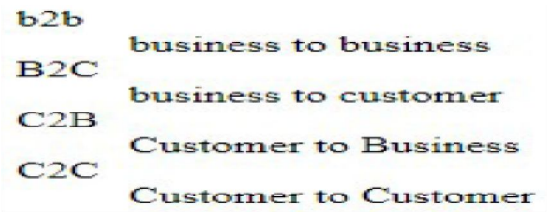
26. Create a web page to display definition list which defines the terms: B2B, B2C, C2B, C2C.

Ans :

```
<html>
    <head> <title> definition list</title></head>
<body>
    <dl>
    <dt> b2b</dt>
    <dd> business to business</dd>
    <dt> B2C</dt>
    <dd> business to customer </dd>
    <dt> C2B</dt>
```

```
<dd> Customer to Business </dd>
<dt> C2C </dt>
<dd> Customer to Customer</dd>
</dl>
</body>
</html>
```

OUT PUT

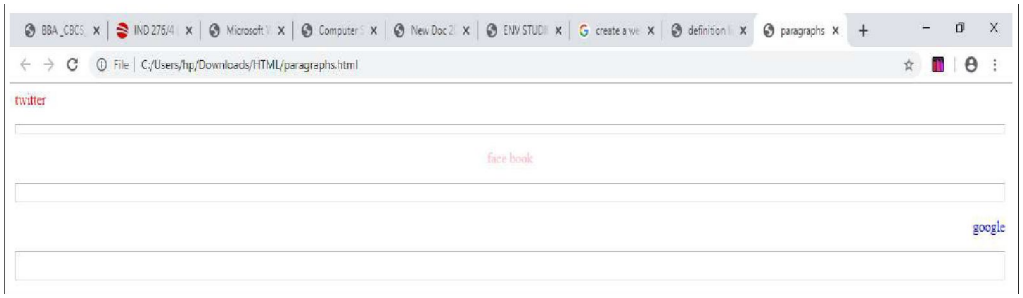


27. Create a web page with paragraphs left, right and center aligned to explain about various social networking sites. The paragraphs should be on different colors and separated by horizontal lines of varying sizes.

Ans :

```
<html>
    <head><title> paragraphs
</title></head>
    <body>
    <p align="left" > <font color="red"> twitter</font> </p>
    <hr size=10>
    <p align="center"> <font color="pink"> face book </font> </p>
    <hr size=20>
    <p align="right"><font color="blue"> google </font> </p>
    <hr size=30>
</body>
</html>
```

OUT PUT



28. Create a web page which displays four buttons containing text B2B, B2C, C2B, C2C. Also when a button is clicked details about the clicked subject should appear on a separate page.

Ans :

```
<html>
    <head><title>
    buttons
    </head></title>
    <body><form>
        <a href="b2b.html"> <input type="button" value="b2b">
        </a>     
        <a href="b2c.html"> <input type="button" value="b2c">
        </a>    
        <a href="c2b.html"> <input type="button" value="c2b">
</a>
            
<a href="c2c.html"> <input type="button" value="c2c">
</a>
</form>
</body>
</html>
        B2b.html
<html>
<body>
        B2b: business to business
</body>
</html>
        B2c.html
<html>
<body>
        B2c: business to consumer
</body>
</html>
        C2b.html
<html>
```

```
<body>
        C2b: consumer to business
</body>
</html>
```

C2c.html

```
<html>
<body>
    C2c: consumer to consumer
</body>
</html>
```

OUT PUT

29. Create a web page to modify the default properties of h1 tag using external style sheet.

Ans :

```
<html>
<head>
    <title>An HTML5 Document</title>
    <link href="styles.css" rel="stylesheet" type="text/css">
</head>
<body>
    <h1>Your first HTML5 page</h1>
    <p>This is a <a href="http://www.osmania.ac.in">link</a> to another webpage</p>
<!— this is a comment —>
</body>
</html>
```

Style.css

```
h1 {
    border-style:solid none solid solid;
    color:red;
}
```

OUT PUT

30. Create a web page to scroll the text "E-Commerce" for exactly 5 times from left to right of the screen.

Ans :

```
<html>
<head>
    <title>HTML marquee Tag</title>
</head>
<body>
    <marquee direction = "right" loop="5"> E-Commerce</marquee>
</body>
</html>
```

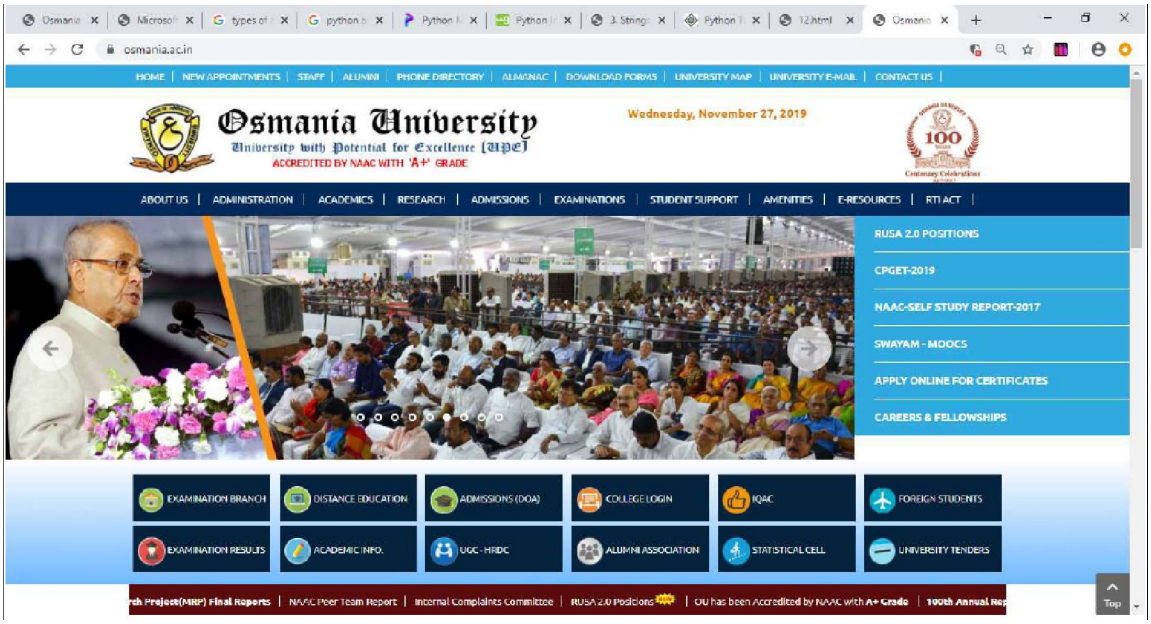
OUT PUT

31. Create a web page to insert an image which when clicked redirects you to your college website.

Ans :

```
<html>
<head><title>
    image
</title></head>
<body>
<a href="http://www.avinashcollege.com">
<img src="C:\Users\hp\Pictures\Camera Roll\WIN_20180624_12_20_54_Pro.jpg" height=50
width=50></img></a>
</body>
</html>
```

OUT PUT



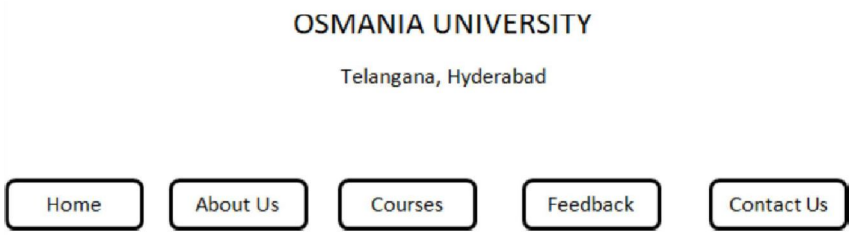
32. Create a web page to display the name of your college in h6 size with blue as font color and background color yellow separated by a thick line and below which a paragraph about the facilities offered by your college is described.

Ans :

```
<html>
<body>
    <h6 > <font color="blue"> avinash college</font></h6><br>
    <hr color="yellow" size=5> <br>
<p>
    Lab, class rooms, ac's etc.
</body>
</html>
```

OUT PUT

33. Create a web page with OSMANIA UNIVERSITY as the title and five buttons labelled Home, About Us, Courses, feedback, Contact us as shown in the diagram which when clicked displays the details on a separate pages.



Ans :

```
<html>
<head><title>
OU</title></head>
<body><form>
<center>
<h1> OSMANIA UNIVERSITY</H1>
    Telangana, Hyderabad<br><br><br><br>
        <a target="_new" href="home.html">
        <input type="button" value="Home"></a>     
        <a target="_new" href="about.html">
        <input type="button" value="About Us"></a>    
        <a target="_new" href="courses.html">
        <input type="button" value="Courses"></a>    
        <a target="_new" href="feedback.html">
        <input type="button" value="Feedback"></a>    
        <a target="_new" href="contact.html">
        <input type="button" value="Contact Us"></a>    
        </form></body></html>
About.html
<html>
<body>
```

<p> Osmania University, established in 1918, is the seventh oldest in India, the third oldest in south India and the first to be established in the erstwhile princely state of Hyderabad. Through out its existence of over eight decades, it has shown remarkable progress and sustained an integrated deve- lopment of all faculties. It has significantly contributed to the academic and economic development of not only the region but also of the Country. Its alumni have distinguished themselves nationally and internationally in various spheres of life and are spread far and wide around the world.

<p> The University has a vision of developing, enhancing, and improving the quality of human resources to meet the challenges of regional, national and global socio-economic changes. It's mission is to achieve excellence in teaching and research and to create opportunities for the students to contribute to the national and regional development.

<p> Osmania University is re-accredited by the National Assessment and Accreditation Council (an Autonomous Institution of the University Grants Commission) as 'A+' Grade University.

```
</body>
</html>
```

Courses.html

```
<html>
<body>
    <h1><b> Courses:<br></h1>
    <h2>UG Courses:</h2></b><br>
<h3>
<ol>
<li> BCA</li>
<li> B.Sc</li>
<li> B.Com</li>
<li> BBA</li>
<li> BA</li>
</ol></h3>
<h2>PG Courses:</h2>
<h3>
<ol>
<li>MCA</li>
<li> MCOM</li>
<li> MSC</li>
<li> MA</li>
</ol></h3>
</body>
</html>
```

Feedback.html

```
<html>
<h1>Feedback Form</h1>
<form>
Roll No:
<input type=”text”><br><br>
Name:   
<input type=”text”><br><br>
Class Rooms:<br><br> <input type=”checkbox”> Excellent  
<input type=”checkbox”> Very Good  
<input type=”checkbox”> Average  
<input type=”checkbox”> Bad Respectively <br><br>
LAbs:<br><br> <input type=”checkbox”> Excellent  
<input type=”checkbox”> Very Good  
<input type=”checkbox”> Average  
<input type=”checkbox”> Bad Respectively <br><br>
Faculty:<br><br> <input type=”checkbox”> Excellent  
<input type=”checkbox”> Very Good  
<input type=”checkbox”> Average  
<input type=”checkbox”> Bad Respectively <br><br>
                                 <input type=”submit” value=”SUBMIT”>
</form>
</html>
```

Contact.html

```
<html>
<body>
<center>
<b>Contact:</b> <Br>
VC’S OFFICE<Br>
Primary Address 1:<Br>
Administrative Building<Br>
Osmania University Campus<Br>
```

```
Hyderabad-500007, Telangana State, India.<Br>
vc@osmania.ac.in<Br>
    +91-40-27682364, 27682221<Br>
    +91-40-27098704, 27098003<Br>
</center>
</body>
</html>
```

OUT PUT

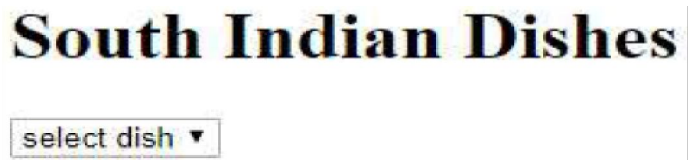
34. Create a web page to demonstrate a pull-down menu. The menu should contain the list of your favourite south Indian dishes.

Ans :

```
<html>
<head>
    <title> pull down menu
</title>
</head>
<body>
    <h1> South Indian Dishes</h1>
<select>
<option>
    select dish
</option>
<option>
Chicken
</option>
<option>
Fish
</option>
<option>
```

```
        Pulihora
    </option>
    <option>
        vada
    </option>
    <option>
        upma
    </option>
    <option>
        dosa
    </option>
    </select>
    </body>
    </html>
```

OUT PUT

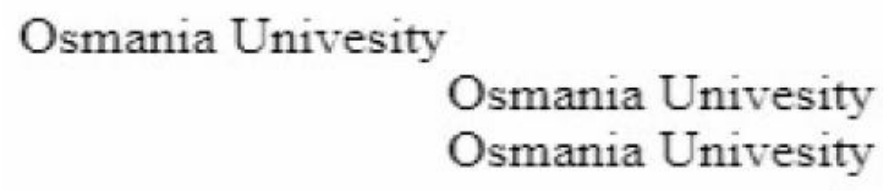


35. Create a web page with name of your college as text. The text should scroll, alternate and slide.

Ans :

```
<html>
<body>
    <marquee behavior="alternate"> avinash degree college</marquee>
    <marquee behavior="scroll"> avinash degree college</marquee>
    <marquee behavior="slide"> avinash degree college</marquee>
</body>
</html>
```

OUT PUT



36. Create a web page to display an image surrounded by text on all the four sides.

Ans :

```
<HTML>
<HEAD>
<TITLE>4 corners of the web page</TITLE>
</HEAD>
<BODY>
<CENTER>
    <img src="C:\Users\hp\Desktop\New folder (2)\th (3).jpg" HEIGHT=400 WIDTH=900>
</CENTER>
    <DIV STYLE="POSITION:ABSOLUTE; LEFT:20; TOP:10;">
    YSR
</DIV>
<DIV STYLE="POSITION:ABSOLUTE; LEFT:20; TOP:450;">
    CHN
</DIV>
<DIV STYLE="POSITION:ABSOLUTE; LEFT:1230; TOP:10;">
    KCR
</DIV>
    <DIV STYLE="POSITION:ABSOLUTE; LEFT:1230; TOP:450;">
    CHIRU
</DIV>
</BODY>
</HTML>
```

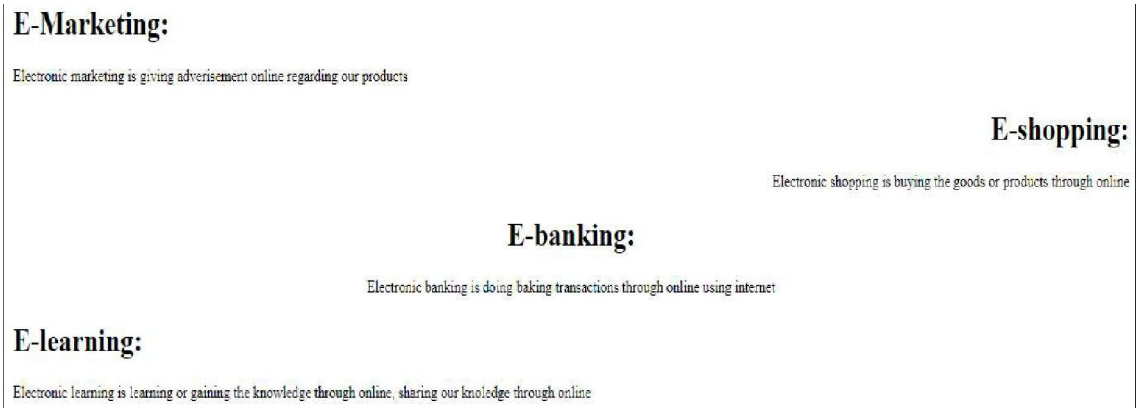
OUT PUT

37. Create a web page with 4 paragraphs of about 5 lines each describing about E-Marketing, E-Shopping, E-banking and E-Learning. The paragraphs should be aligned left, right, center and justified respectively.

Ans :

```
<html>
<body>
<div align="left">
    <p> <h1> E-Marketing:</h1> Electronic marketing is giving advertisement online regarding
                                our products</p></div>
    <div align="right">
    <p> <h1> E-shopping:</h1> Electronic shopping is buying the goods or products through
    online </p></div>
    <div align="center">
    <p> <h1> E-banking:</h1> Electronic banking is doing baking transactions through online
    using internet </p></div>
    <div align="justified">
    <p> <h1> E-learning:</h1> Electronic learning is learning or gaining the knowledge through
    online, sharing our knowledge through online </p> </div>
    </body>
</html>
```

OUT PUT



38. Create a web page with name of your college as Text in h6 size, font as verdana, blue as font color followed by a copyright symbol and trademark symbol.

Ans :

```
<html>
<body>
<h6> <font face="verdana" color="blue"> avinash degree college </font></h6>@
```

<img src="give the trade mark symbol image path"></img>

</body>

</hmtl>

OUT PUT

39. Create a login page asking the user to enter his username and password followed by a submit button.

Ans :

<html>

<head>

<title>

login details

</title>

</head>

<form>

<h1> Please enter User Name and Password</h1>

Name: <input type="text" name="t1">

Password: <input type="password" name="t2">

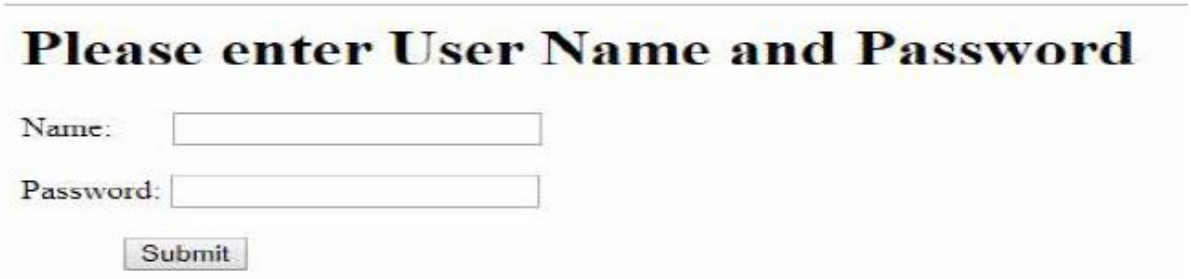
               <inp

ut type="submit" vallue="submit">

</form>

</html>

OUT PUT



40. Create a web page to create links to the sections on the same page.

Ans :

```
<html>
<body>
<ul>
    <li> <a href="#birds"> Birds </a> </li>
    <li> <a href="#ducks"> Ducks </a> </li>
    </ul>
    <br><br><br><br><br><br><br><br><br><br><br><br><br>
    <br><br><br><br><br><br>
    <br>
    <p> <a name="birds"> This is the article about birds.</a></p>
    <br><br><br><br><br><br><br><br><br><br><br><br><br>
    <br><br><br><br><br><br><br>
<br>
<p> <a name="ducks"> This is the article about ducks.</a></p></body>
</html>
```

OUT PUT

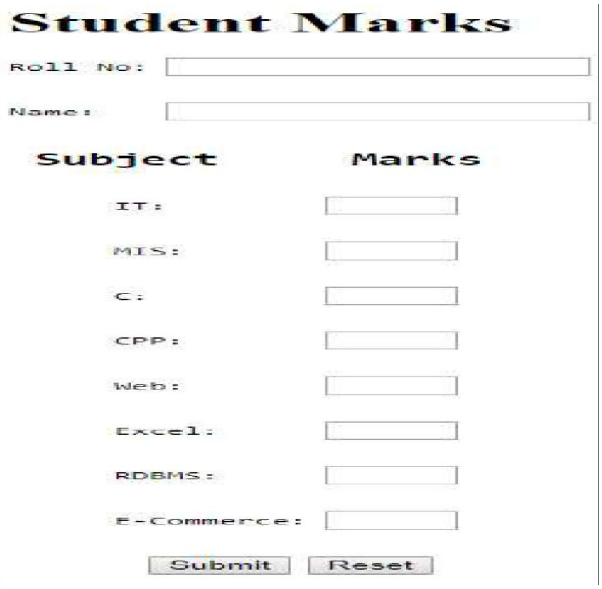
41. Create a web page using a form which collects data about students rollno, name and marks in various subjects followed by submit and reset buttons.

Ans :

```
<html>
<head>
```

```
<title>
students data
</title>
</head>
<form>
<h1> students marks</h1>
Roll No: <input type="text" name="t1"> <br><br>
Name: <input type="text" name="t2"> <br><br>
<pre>
<h2> Subject Marks </h2>
IT: <input type="text" name="t3"
size=3> <br><br>
MIS: <input type="text" name="t4" size=3> <br><br>
C: <input type="text" name="t5" size=3> <br><br>
CPP: <input type="text" name="t6" size=3> <br><br>
Web: <input type="text" name="t7" size=3> <br><br>
Excel: <input type="text" name="t8" size=3> <br><br>
RDBMS: <input type="text" name="t9" size=3> <br><br>
E-Commerce: <input type="text" name="t10" size=3> <br><br>
<input type="submit" value="Submit"> <input type="reset" value="Reset">
</pre>
</form>
</html>
```

OUT PUT



42. Create a web page using a form titled as Feedback form which takes the feedback of the various facilities offered in your college. The form should have fields student name, rollno followed by 5 check boxes labelled Excellent, Very Good, Good, Average, Bad respectively.

Ans :

```
<html>
<body><form>
<h1> studetns feed back form</h1>
    Roll No:
<input type="text"><br>
    Name:
<input type="text"><br>
    Class Rooms:<br> <input type="checkbox"> Excellent  
<input type="checkbox"> Very Good  
<input type="checkbox"> Average  
<input type="checkbox"> Bad Respectively <br>
    LAb:<br> <input type="checkbox"> Excellent  
<input type="checkbox"> Very Good  
<input type="checkbox"> Average  
<input type="checkbox"> Bad Respectively <br>
    Faculty:<br> <input type="checkbox"> Excellent  
<input type="checkbox"> Very Good  
<input type="checkbox"> Average  
<input type="checkbox"> Bad Respectively <br>
</form>
</body>
</html>
```

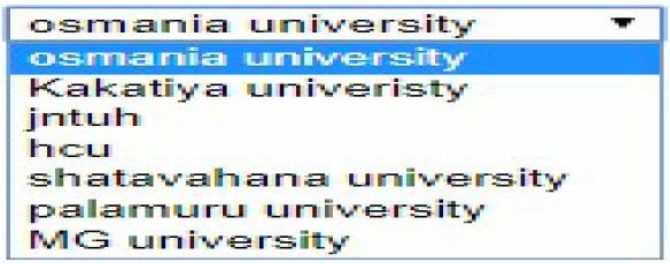
OUT PUT

43. Create a web page to display the list of universities available in Telangana state using a pulldown menu.

Ans :

```
<html>
<body>
<select>
<option> osmania university</option>
<option> Kakatiya univeristy</option>
<option> jntuh </option>
<option> hcu </option>
<option> shatavahana university</option>
<option> palamuru university</option>
<option> MG university</option>
</select>
</body>
</html>
```

OUT PUT



44. Create a web page to display an image surrounded by text on left and rightsides.

Ans :

```
<html>
<body>
<center>
    <img src="C:\Users\hp\Desktop\New folder (2)\th (3).jpg"></img></center>
    <div style="position:absolute; top:200; left:50;"><h1> this is the left side text of image
    </h1></div>
    <div style="position:absolute; top:200; left:900;"><h1> this is the right side text of image
</h1></div>
</body>
</html>
```

OUT PUT

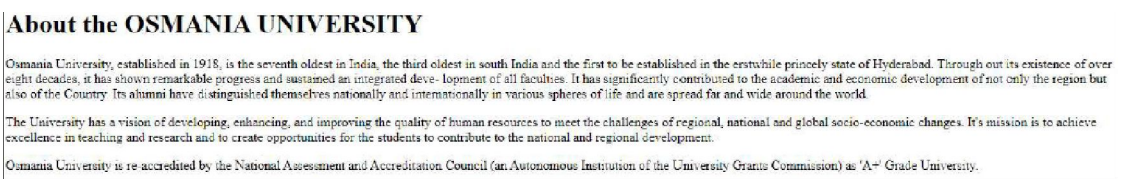
this is the left side text of image this is the right side text of image

45. Create a web page using a default theme in front page to describe about OSMANIA UNIVERSITY.

Ans :

```
<html>
<head>
<title>
    about osmania university
</title>
</head>
<body>
    <h1> About the <B>OSMANIA UNIVERSITY</B></H1>
<p>: Osmania University, established in 1918, is the seventh oldest in India, the third oldest in south India and the first to be established in the erstwhile princely state of Hyderabad. Through out its existence of over eight decades, it has shown remarkable progress and sustained an integrated deve- lopment of all faculties. It has significantly contributed to the academic and economic development of not only the region but also of the Country. Its alumni have distinguished themselves nationally and internationally in various spheres of life and are spread far and wide around the world.
<p> The University has a vision of developing, enhancing, and improving the quality of human resources to meet the challenges of regional, national and global socio-economic changes. It's mission is to achieve excellence in teaching and research and to create opportunities for the students to contribute to the national and regional development.
<p> Osmania University is re-accredited by the National Assessment and Accreditation Council (an Autonomous Institution of the University Grants Commission) as 'A+' Grade University.
</body>
</html>
```

OUT PUT



About the OSMANIA UNIVERSITY

Osmania University, established in 1918, is the seventh oldest in India, the third oldest in south India and the first to be established in the erstwhile princely state of Hyderabad. Through out its existence of over eight decades, it has shown remarkable progress and sustained an integrated deve- lopment of all faculties. It has significantly contributed to the academic and economic development of not only the region but also of the Country. Its alumni have distinguished themselves nationally and internationally in various spheres of life and are spread far and wide around the world.

The University has a vision of developing, enhancing, and improving the quality of human resources to meet the challenges of regional, national and global socio-economic changes. It's mission is to achieve excellence in teaching and research and to create opportunities for the students to contribute to the national and regional development.

Osmania University is re-accredited by the National Assessment and Accreditation Council (an Autonomous Institution of the University Grants Commission) as 'A+' Grade University.

46. Create a user registration form for an upcoming examination.(use textboxes, pulldown menus, option boxes, submit button).

Ans :

```
<html><body>
<form>
<h1> student registration form</h1>
    Roll No: <input type="text"><br><br>
    Name: <input type="text"> <br><br>
Course:
    <select>
    <option> Select</option>
    <option> B.Com(G)</option>
    <option> B.Com(C)</option>
    <option> B.Com(CA)</option>
    <option> B.B.A</option>
    </select><br><br>
Subjects:<br>
    <input type="checkbox"> E-Commerce  
    <input type="checkbox"> RDBMS  
    <input type="checkbox"> GST  <br><br>
    <input type="checkbox"> M.A/C  
    <input type="checkbox"> Company Law  
    <input type="checkbox"> Commerce lab <br><br><br>
Fee:
    <input type="text"> <br><br>
    <input type="submit" value="Submit">
    </form>
    </body>
    </html>
```

OUT PUT

47. Create an web page to display a multilevel list taking your own example.

Ans :

```
<html>
<body>
<ol>
<li>First</li>
<li>Second
    <ol style="list-style-type: lower-alpha; padding-bottom: 0;">
    <li style="margin-left:2em">Sub of Second</li>
    <li style="margin-left:2em; padding-bottom: 0;">Another Sub</li>
</ol>
</li>
    <li>Third</li>
    <li>Fourth </li>
</ol>
</body>
</html>
```

OUT PUT

1. First
2. Second
    a. Sub of Second
    b. Another Sub
3. Third
4. Fourth

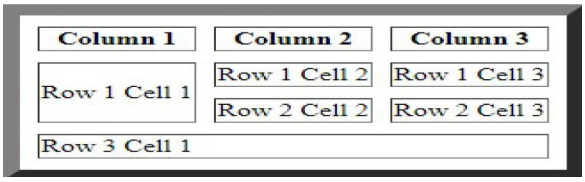
48. Create a table to demonstrate colspan, rowspan, cellspacing and cell padding attributes of a table.

Ans :

```
<html>
<body>
    <table border="10" cellpaddin="10" cellspacing="10">
<tr>
    <th>Column 1</th>
    <th>Column 2</th>
    <th>Column 3</th>
</tr>
<tr>
<td rowspan = "2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
```

```
<td>Row 1 Cell 3</td>
</tr>
<tr>
    <td> Row 2 Cell 2</td>
    <td>Row 2 Cell 3</td>
</tr>
<tr>
    <td colspan = "3">Row 3 Cell 1</td>
</tr>
</table>
</body>
</html>
```

OUT PUT



49. Create a webpage to insert an image using all the image attributes.

Ans :

```
<html>
<body>
<img src="C:\Users\hp\Desktop\New folder (2)\th (3).jpg", height=500, width=500,alt="text"
border="15px", align="left"> </img>
</body>
</html>
```

OUT PUT

FACULTY OF COMMERCE

B.Com. V - Semester (CBCS) Examination

Model Paper - I

E-COMMERCE

Time: $1^1/_2$ Hours] [Max. Marks : 50

PART – A (5 x 2 = 10 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

1. E - Business **(Unit-I, SQA - 2)**
2. Define decryption **(Unit-II, SQA - 11)**
3. What is E-cash. **(Unit-III, SQA - 6)**
4. Supply Chain Management **(Unit-IV, SQA - 6)**
5. E-Advertisement **(Unit-V, SQA - 5)**
6. Define Consumer to Consumer (C2C). **(Unit-I, SQA - 6)**
7. Middleware Services. **(Unit-II, SQA - 3)**
8. Disadvantages of Electronic Cash **(Unit-III, SQA - 8)**

PART – B (5 × 8 = 40 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. (a) Explain the differences between Traditional commerce and E- commerce. **(Unit-I, Q.No. 8)**

OR

(b) Define E-Learning. State the advantages and disadvantages of E-Learning. **(Unit-I, Q.No. 30)**

10. (a) Discuss about the E-Commerce framework in detail. **(Unit-II, Q.No. 2, 3, 4, 5, 6, 8)**

OR

(b) Discuss about Cryptography in detail. **(Unit-II, Q.No. 21)**

11. (a) Explain the advantages and Risks involved in EFT . **(Unit-III, Q.No. 17)**

OR

(b) Enumerate the legal issues related to Electronic Payment System? **(Unit-III, Q.No. 11)**

12. (a) Explain the importance of EDI in E-Commerce. **(Unit-IV, Q.No. 13)**

OR

(b) Describe about various EDI applications in business. **(Unit-IV, Q.No. 8)**

13. (a) Outline the process of online marketing. **(Unit-V, Q.No. 9)**

OR

(b) Explain in detail about E-Marketing Techniques. **(Unit-V, Q.No. 2)**

FACULTY OF COMMERCE

B.Com. V - Semester (CBCS) Examination

Model Paper - II

E-COMMERCE

Time: $1^1/_2$ Hours] [Max. Marks : 50

PART – A (5 x 2 = 10 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

1. Define E-Commerce **(Unit-I, SQA - 1)**
2. Define E-Marketing **(Unit-I, SQA - 7)**
3. SSL **(Unit-II, SQA - 9)**
4. Define digital signature **(Unit-II, SQA - 12)**
5. EFT **(Unit-III, SQA - 10)**
6. EDI **(Unit-IV, SQA - 1)**
7. Banners **(Unit-V, SQA - 7)**
8. Define digital marketing **(Unit-V, SQA - 9)**

PART – B (5 × 8 = 40 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. (a) State the Advantages & Limitations of E-Commerce. **(Unit-I, Q.No. 4)**

OR

(b) Define E-Advertising. State the advantages and disadvantages of E-Advertising. **(Unit-I, Q.No. 22)**

10. (a) Define Encryption. Explain the techniques of Encryption. **(Unit-II, Q.No. 23)**

OR

(b) Define Network Security. Explain the need for Network Security. **(Unit-II, Q.No. 13)**

11. (a) Define electronic payment system. What are the characteristics of electronic payment system? **(Unit-III, Q.No. 7)**

OR

(b) Define Smart Cards. What are the advantages of Smart Cards. **(Unit-III, Q.No. 19)**

12. (a) Explain the standards of EDI ? **(Unit-IV, Q.No. 5)**

OR

(b) What are the advantages and limitations of EDI. **(Unit-IV, Q.No. 3)**

13. (a) Explain how the new age of offers advantage to digital marketing. **(Unit-V, Q.No. 7)**

OR

(b) What are the benefits/advantages of digital marketing ? **(Unit-V, Q.No. 21)**

FACULTY OF COMMERCE

B.Com. V - Semester (CBCS) Examination

Model Paper - III

E-COMMERCE

Time: $1^1/_2$ Hours] [Max. Marks : 50

PART – A (5 x 2 = 10 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

1. Define mobile commerce **(Unit-I, SQA - 11)**
2. Define E-Learning **(Unit-I, SQA - 13)**
3. SMTP **(Unit-II, SQA - 8)**
4. Define firewalls **(Unit-II, SQA - 4)**
5. Define credit card **(Unit-III, SQA - 4)**
6. Financial EDI **(Unit-IV, SQA - 5)**
7. Chain letters **(Unit-V, SQA - 4)**
8. Search engines **(Unit-V, SQA - 2)**

PART – B (5 × 8 = 40 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. (a) List out some applications of E-Commerce? **(Unit-I, Q.No. 18)**

OR

(b) Define E-Banking. State the advantages of E-Banking. **(Unit-I, Q.No. 23)**

10. (a) Explain briefly about TCP/IP Protocol. **(Unit-II, Q.No. 15)**

OR

(b) Define Digital Signature. What are the advantages of Digital Signature? **(Unit-II, Q.No. 25)**

11. (a) Enumerate the legal issues related to Electronic Payment System? **(Unit-III, Q.No. 11)**

OR

(b) Explain Mercantile Process Model from Merchant's Perspective. **(Unit-III, Q.No. 6)**

12. (a) Explain different types of EDI. **(Unit-IV, Q.No. 7)**

OR

(b) Discuss the Legal - Security and Privacy Issues in EDI. **(Unit-IV, Q.No. 12)**

13. (a) Explain about 5P's and its application in detail. **(Unit-V, Q.No. 10)**

OR

(b) Explain briefly about Virtual Reality & Consumer Experience. **(Unit-V, Q.No. 15)**

FACULTY OF COMMERCE

B.Com. VI - Semester (CBCS) Examination

July / August – 2021

(Common Paper for Computers / Computer Applications Courses)

E-COMMERCE

Time: 2 Hours] [Max. Marks : 80

PART – A (4 × 5 = 20 Marks)

Note : Answer any **four** Questions

		ANSWERS
1.	Differentiate between E-Business and E-Commerce.	**(Unit-I, Q.No. 9)**
2.	Write short notes on SSL.	**(Unit-II, SQA-9)**
3.	Write about smart cards and its uses.	**(Unit-III, SQA-12, 13)**
4.	Write short notes on EDI and its uses.	**(Unit-IV, SQA-1, 2)**
5.	Write about Virtual Reality.	**(Unit-V, Q.No. 15)**
6.	What is E-Learning ?	**(Unit-I, SQA-13)**
7.	Write about B2C business model.	**(Unit-I, Q.No. 14)**
8.	Write about TCP/IP protocol.	**(Unit-II, Q.No. 15)**

PART – B (4 × 15 = 60 Marks)

Note: Answer any **four** Questions

9.	Explain in detail about B2B, C2B, C2C business models.	**(Unit-I, Q.No. 13, 15, 16)**
10.	Discuss the benefits aNd limitations of E-Commerce.	**(Unit-I, Q.No. 4)**
11.	Write about various Encryption techniques in detail.	**(Unit-II, Q.No. 23)**
12.	Explain about Frame-work of E-Commerce.	**(Unit-II, Q.No. 1)**
13.	Discuss about Mercantile process model from business perspective.	**(Unit-III, Q.No. 6)**
14.	Discuss about Legal issues in electronics payment system.	**(Unit-III, Q.No. 11)**
15.	Explain various types of EDI in detail.	**(Unit-IV, Q.No. 7)**
16.	Explain about EDI applications in business.	**(Unit-IV, Q.No. 8)**
17.	Explain about the applications of 5p's in detail.	**(Unit-V, Q.No. 10)**
18.	Explain the impact of E-Commerce on marketing.	**(Unit-V, Q.No. 8)**

FACULTY OF COMMERCE

B.Com. VI - Semester (CBCS) Examination

September / October – 2020

(Common Paper for Computers / Computer Applications Courses)

E-COMMERCE

Time: 2 Hours] [Max. Marks : 80

PART – A (4 × 5 = 20 Marks)

Note : Answer any **four** Questions

ANSWERS

1. E-Shopping **(Unit-I, Q.No. 31)**
2. TCP/IP **(Unit-II, Q.No. 15)**
3. Smart Cards **(Unit-III, SQA-12)**
4. Types of EDI **(Unit-IV, Q.No. 7)**
5. Spam Mail

Ans :

Spam email is unsolicited and unwanted junk email sent out in bulk to an indiscriminate recipient list. Typically, spam is sent for commercial purposes. It can be sent in massive volume by botnets, networks of infected computers.

6. FTP

Ans :

FTP stands for File Transfer Protocol. FTP is a standard network protocol used to transfer files between computers (a client and server) over a TCP/IP network. It is a function of Application layer and built on client-server architecture. Client controls the conversation, while server transmits the file content. Browser acts as a client and starts the conversation by making some request on the server. Through FTP, a client can remove, download, delete, or upload files on a server.

7. Digital Signatures **(Unit-II, SQA-12)**
8. Limitations of E-Commerce. **(Unit-I, Q.No. 4)**

PART – B (4 × 15 = 60 Marks)

Note: Answer any **four** Questions

9. Discuss the three pilliars of E-Commerce. **(Unit-I, Q.No. 11)**
10. Expalin the benefits of E-Commerce to the society consumer and organizations. **(Unit-I, Q.No. 4)**
11. Explain the architecture framework of E-Commerce. **(Unit-II, Q.No. 1)**
12. Discuss the security issues faced when using an E-Commerce Website. **(Unit-II, Q.No. 9)**

13. Discuss about the mercantile process model from consumer's perspective. **(Unit-III, Q.No. 4)**
14. Discuss about the categories / classification of EPT (Electronic Fund Transfer). **(Unit-III, Q.No. 16)**
15. Discuss about EDI Applications in Business. **(Unit-IV, Q.No. 8)**
16. What are the legal and security issues of EDI? **(Unit-IV, Q.No. 12)**
17. Discuss about the applications of 5P's. **(Unit-V, Q.No. 10)**
18. List out the advantages and limitations of E-Marketing. **(Unit-V, Q.No. 21)**

FACULTY OF COMMERCE

B.Com. VI - Semester (CBCS) Examination

May / June – 2019

E-COMMERCE

Time: 3 Hours] [Max. Marks : 80

PART – A (5 x 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

1. Mobile Commerce **(Unit-I, SQA - 11)**
2. HTTP **(Unit-II, SQA - 7)**
3. EFT **(Unit-III, SQA - 10)**
4. Applications of EDI **(Unit-IV, Q.No. 8)**
5. Search Engines **(Unit-V, SQA - 2)**
6. E-Learning **(Unit-I, SQA - 13)**
7. Digital Signature **(Unit-II, SQA - 12)**
8. Smart Cards **(Unit-III, SQA - 12)**

PART – B (5 × 12 = 60 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. a) Explain about the various E-Commerce Models in detail. **(Unit-I, Q.No. 10, 11)**

OR

b) Explain the differences between Traditional Commerce and E-Commerce. **(Unit-I, Q.No. 8)**

10. a) Discuss about the E-Commerce framework in detail. **(Unit-II, Q.No. 2, 3, 4, 5, 6, 8)**

OR

b) Discuss about Cryptography in detail. **(Unit-II, Q.No. 21)**

11. a) Explain about the Credit Cards and its types. **(Unit-III, Q.No. 10)**

OR

b) Explain the various characteristics of Electronic Payment Systems. **(Unit-III, Q.No. 7)**

12. a) Explain the various types of EDI with advantages and limitations. **(Unit-IV, Q.No. 3, 7)**

OR

b) Discuss the legal, security and privacy issues of EDI. **(Unit-IV, Q.No. 12)**

13. a) Explain in detail about E-Marketing Techniques. **(Unit-V, Q.No. 2)**

OR

b) Explain about 5 P's and its applications in detail. **(Unit-V, Q.No. 10)**

FACULTY OF COMMERCE

B.Com. VI - Semester (CBCS) Examination

September / October – 2019

E-COMMERCE

Time: 3 Hours] [Max. Marks : 80

PART – A (5 × 4 = 20 Marks)

Note: Answer any five of the following questions not exceeding 20 lines each.

1. B2B **(Unit-I, SQA - 3)**
2. Firewalls **(Unit-II, SQA - 4)**
3. E-Cash **(Unit-III, SQA - 6)**
4. Applications of EDI **(Unit-IV, Q.No. 8)**
5. E-Advertisement **(Unit-V, SQA - 5)**
6. Benefits of B2C **(Unit-I, SQA - 4)**
7. SSL **(Unit-II, SQA - 9)**
8. Legal Risk in E-Payment System **(Unit-III, Q.No. 11)**

PART – B (5 × 12 = 60 Marks)

Note: Answer all the questions in not exceeding four pages each.

9. (a) Define E-Commerce. Discuss the benefits and limitations of E-Commerce. **(Unit-I, Q.No. 1, 4)**

OR

(b) Explain about the impact of E-Commerce on Business Models. **(Unit-I, Q.No. 10, 11)**

10. (a) Discuss about Cryptography and its types. **(Unit-II, Q.No. 22)**

OR

(b) Explain about various Network Security Protocols. **(Unit-II, Q.No. 15, 16, 17, 18)**

11. (a) Discuss the advantages and risks of Electronic Fund Transfer. **(Unit-III, Q.No. 17)**

OR

(b) Explain the various characteristics of Electronic Payment Systems. **(Unit-III, Q.No. 7)**

12. (a) Explain EDI Process in detail. **(Unit-IV, Q.No. 15)**

OR

(b) Explain the advantages of Web EDI over Traditional EDI. **(Unit-IV, Q.No. 13)**

13. (a) Explain the role of Digital Marketing in detail. **(Unit-V, Q.No. 16)**

OR

(b) Explain the functionalities of Search Engines in detail. **(Unit-V, Q.No. 6)**