

Q.2 a. What are the advantages of e-commerce?

(8)

Answer:

The main advantages of E-commerce are:

- **24x7 operations:** Round the clock operation is possible in e-commerce.
- **Global reach:** The Internet being inherently global, reaching global customers is relatively easy in e-commerce.
- **Cost of acquiring, serving and retaining customers:** Due to 24x7 operation and global reach over the Internet, it is relatively easy to acquire new customers over the net. Through innovative techniques of “push” technology, it is possible to retain customers’ loyalty with minimal investments.
- **An extended enterprise is easy to build:** Internet provides an effective way to extend the enterprise beyond the narrow confines of the organization to suppliers and business partners with the deployment of tools like ERP, SCM and CRM.
- **Disintermediation:** With the use of Internet, one can directly approach the customers and suppliers, cutting down the number of levels and in the process, cutting down the costs.
- **Improved customer service to the client:** It results in higher satisfaction and more sales.
- **Power to provide the “best of both the worlds”:** It benefits the traditional business side-by-side with the Internet tools.
- **A technology-based customer interface:** The customer interface in the electronic environment is a “screen-to-face” interaction. This includes PC based monitors, ATM machines, PDA’s, etc. These interfaces have the potential to both increase sales and reduce costs.
- **The customer controls the interaction:** At most websites, the customer is in control during screen-to-face interaction, in that the Web largely employs a “self-service” model for managing commerce or community-based interaction. The customer controls the search process, the time spent on various sites, the degree of price/product comparison, the people with whom he/she comes in contact, and the decision to buy.
- **Knowledge of customer behavior:** While the customer controls the interaction, the firm has unprecedented access to observe and track individual customer behavior. The online business can actually position offers and goods in ways that uniquely appeal to specific customers.

b. What are the four core functions being performed by portals?

(8)

Answer:

Though portals performed many different functions, their essence constituted the following five core elements:

- **Search services:** Search services included search engines, directories, Yellow Pages services for locating local businesses, "people finder" services for tracking down phone numbers and/or e-mail addresses, MP3 finders for locating downloadable music files, and "shopping bots" for locating merchandise and comparing the prices offered by different online retailers.
- **Content:** Content provided information such as news headlines, stock quotes, sports scores, weather forecasts, and local event listings; reference information such as maps and directories; entertainment options including games and links to Internet radio stations; and third-party produced content in special interest areas.
- **Community-building forecast:** It included chat rooms, message boards instant-messaging services, online greeting cards, applications for exchanging digital photos, free classifieds, and free personal home pages.
- **Commerce offerings:** It included classified advertisements for jobs, cars, and homes; auctions; shopping malls aggregating small online retailers' websites; and links to external shopping sites nested within the relevant content categories.
- **Personal productivity applications:** It included Web-based e-mail, address books, calendars, file storage, and bill payment services.

Q.3 a. Explain four client-server applications along with their objectives and protocols used.

(8)

Answer:

The most widely used client server applications are listed in the following Table:

Application	Protocol	Purpose
World Wide Web	HyperText transport Protocol (HTTP)	Offers access to hypertext documents, executable programs and other Internet resources.
E-mail	Simple Mail Transport Protocol (SMTP) Post Office Protocol version 3 (POP3) Multipurpose Internet Mail Extensions (MIME)	Allows the transmission of text messages and binary attachments across the Internet.
File Transfer	File Transfer Protocol (FTP)	Enables files to be uploaded and downloaded across the Internet
Chat	Internet Relay Chat Protocol (IRC)	Provides a way for users to talk to one another in real-time over the Internet. The real-time chat groups are called channels.
Use Net Newsgroups	Network News Transfer Protocol (NNTP)	Discussion forums where users can asynchronously post messages and read messages posted by others.

b. Explain the concept and working of packet switching.

(8)

Answer:

Packet switching is a technique to transfer data in computer networks using shared lines of communication. In packet switching, data are transmitted in small packets. A typical upper limit in packet length is 1KB. If a source has a long message to send, the message is broken up in a series of packets. Each packet contains a portion (or all for a short message) of the user's data, plus some control information. The control information, at a minimum, includes the information that the network requires in order to be able to route the packet through the network and deliver it to the intended destination. At each node of the route, the packet is received, stored briefly and passed on to the next node. In packet switching, programs break data into small pieces, called packets, and then transmit the data between computers.

In packet switched networks, breaking one path does not prevent the data from reaching its destination. The packet will simply find a different path. Each packet must contain its

destination address. As each packet travels from one computer to another, each computer examines the packet's address and routes the packet to its next intermediate hop or directly to the destination. The Internet is a packet-switched network.

Q.4 a. What are the objectives of a Web?

(8)

Answer:

An effective site is one that creates an attractive presence that meets the objectives of the business or organization. These objectives include:

- Attracting visitors to the website.
- Making the site interesting enough so that visitors stay and explore.
- Convincing visitors to follow the site's links to obtain information.
- Creating an impression consistent with the organization's desired image.
- Building a trusting relationship with visitors.
- Reinforcing positive images that the visitors might already have about the organization.
- Encouraging visitors to the site.

b. What are the advantages of online marketing?

(8)

Answer:

Some of the advantages of online marketing are:

1. Online marketing offers bottom-line benefits that tie in directly to the demands placed on the organization trying to make a transition in the new economy.
2. Online marketing can save money and help you stretch marketing budget. Electronic versions of catalogues brochures, and specification sheets do not have to be printed, packaged, stored, or shipped. These can be updated online.
3. Online marketing can save time and cut steps from the marketing process. Marketers no longer have to wait for one of their sales representatives to give them the desired information. They can get it online on their own. E-mail allows exchanging information with potential buyers quickly.
4. Online marketing gives customers another way to buy, while enabling them to take control of the purchasing process. Customers can get more information about the products they buy, more input into the product itself, and support after sale.
5. Online marketing can be information-rich and interactive. It appeals to information hungry buyers and analytical buyers. It allows buyers and current customers to search and locate the information they need quickly.
6. Online marketing can offer you international reach and indeed, online networks have created an instant global community. Online marketing erases the time and distance barriers that get in the way of conducting business transactions with customers in other countries.
7. Online marketing can lower barriers to entry and offer equal opportunity for access. It helps to lower many of the marketplace barriers that have held some would-be entrepreneurs from full participation in the free market system.
8. Online marketing can be continuously available twenty four hours a day and 365 days in a year.

Q.5 a. Briefly explain the primary components of a firewall. (8)

Answer:

The primary components of a firewall are:

1. **Network policy:** There are two levels of network policy that directly influence the design, installation and use of a firewall system. The higher-level policy is an issue-specific network access policy that defines those services which will be allowed or explicitly denied from the restricted network, how those services will be used, and the conditions for the exceptions to this policy. The lower-level policy describes how the firewall will actually go about restricting the access and filtering the services that were defined in the higher-level policy.
2. **Advanced authentication mechanism:** Advanced authentication measures such as smartcards, authentication tokens, biometrics, and software-based mechanisms are designed for access control. The passwords generated by advanced authentication devices cannot be reused by attacker who has monitored a connection. Since firewalls can centralize and control site access, the firewall is the logical place for the advanced authentication software or hardware to be located.
3. **Packet filtering:** IP packet filtering is done, usually, using a packet filtering router designed for filtering packets, as they pass between the router's interfaces. A packet filtering router usually can filter IP packets on some or all of the following fields:
 - Source IP address
 - Destination IP address
 - TCP/UDP source port
 - TCP/UDP destination port
4. **Application Gateways:** To counter some of the weaknesses associated with packet filtering routers, firewalls need to use software applications to forward and filter connections for services such as Telnet and FTP. Such an application is referred to as proxy service, while the host running the proxy service is referred to as application gateway. Application gateways and packet filtering routers can be combined to provide higher levels of security and flexibility than if either one was used alone.

- b. Briefly explain the criteria which ought to be satisfied for any digital payment system to succeed. (8)

Answer:

For any digital payment mechanism to succeed, the criteria given in the following Table ought to succeed:

Criteria	Need for criteria
Acceptability Anonymity	Payment infrastructure needs to be widely accepted. Identity of customers should be protected.
Convertibility	Digital money should be convertible to any type of fund.
Efficiency	Cost per transaction should be near zero.
Integration	Interfaces should be created to support the existing system.
Scalability	Infrastructure should not break down if new customers and merchants join.
Security	Should allow financial transactions over open networks.
Reliability	Should avoid single points of failure.
Usability	Payment should be easy as in the real world.

- Q.6 a. Explain the three stages in which strategy for e-CRM can be visualized. (8)

Answer:

The strategy for e-CRM can be visualized in the following three stages:

- A. **Customer Information Environment:** In the first stage, building up of a customer information environment and acting on it forms the starting point. It consists of:

- Metrics programmes
- Customer information repository
- Customer profiles

- Monitoring customer behaviours

- B. **Customer Value Orientation:** In the second stage, operational effectiveness is the focus. Customers want value for their money. They believe that they have got value, when they perceived benefits they receive from something exceed the cost of owning it. It consists of:

- Behavior analysis
- Profitability analysis
- Lifecycle modeling
- Tuned marketing

C. **Customer loyalty:** In the third stage, the focus is on the integration of internal process of the organization with the customer in creating a community. Moving customer services to the Internet is critical to staying competitive. Providing customer service on the Internet means a lot more than just having a website. It includes:

- Communities
- Learning organizations

b. What are the benefits of e-SCM? (8)

Answer: Some of the benefits of e-SCM:

- 1) It is Web-based (client and server), not Web-enabled.
- 2) It incorporates broadcast and active messaging to proactively notify an individual of a condition that requires attention.
- 3) It supports the exchange of “real-time” information through trading communities such as employees, customers, suppliers, distributors and manufacturers.
- 4) It has open Internet Application Architecture which allows for rapid deployment and scalability, combining unlimited internal/external users in a “real-time” environment.
- 5) It has an interface capability with any third party software.
- 6) It is platform independent.
- 7) It is a fully integrated system.
- 8) It has Web visibility and processing capability—24x7.
- 9) It is rule-based.

Q.7 a. What is the importance of data warehouse for an organization? (8)

Answer:

The importance of data warehousing to an organization comprises:

- 1) **Immediate information delivery:** Data warehouses decrease the length of time between business event occurrences and executive alert. Using a data warehouse, daily, weekly and monthly sales reports are available on a daily basis. Given this data delivery time compression, business decision makers can exploit opportunities that they would otherwise miss.

- 2) **Data integration from across and even outside the organization:** To provide a complete picture, data warehouses typically combine data from multiple sources such as a company's order entry and warranty systems. Thus, with a warehouse, it may be possible to track all interactions a company has with each customer.
- 3) **Future vision from historical trends:** Effective business analysis frequently includes trend and seasonality analysis. To support this, warehouses typically contain data of multiple years.
- 4) **Tools for looking data in new ways:** Instead of paper reports, warehouses give users tools for looking at data differently. They also allow users to manipulate their data. An interactive table that allows the user to drill down into detailed data with the click of a mouse can answer questions that take months to answer in a traditional system.

b. Define knowledge management. Explain briefly various objectives of knowledge management system also. (8)

Answer: Knowledge management can be defined as the capability of a company as a whole to create new knowledge, disseminate it throughout the organization and embody it in products, services and systems and raise its intellectual capital.

The objective of knowledge management is to make the process of knowledge sharing more effective. This means that corporate knowledge is made available in forms which are readily accessible. Following are the general objectives of knowledge management system:

- 1) Improve learning and foster innovation by streamlining information access and retrieval, putting content in context.
- 2) Enhance information organization, thus allowing enterprises to maximize the value of information, deliver products and services faster, and provide users a rich knowledge discovery.
- 3) Protect knowledge assets to reduce the duplication of work and to enable organizations to identify knowledge gaps.
- 4) Automate knowledge management

Q.8 a. What is a wireless application? Explain six different types of wireless applications. (8)

Answer:

A wireless application is a software that runs on a wireless device that exchanges content over a wireless network. The actual wireless applications are distinguished from one another based on the wireless devices, networks and application families, which can be summarized as:

- 1) **Web phones:** The most common wireless application is the Internet-ready cellular phone, which we call as Web phone. There are three major Web phones: the US HDML& WAP phone, the European WAP phone, and the Japanese I-mode phone. With them, the user can exchange short messages, access the Web with a micro browser, and run personal service applications such as locating nearby items of interest. Most Web phones work only when they have a network connection.
- 2) **Wireless handhelds:** The wireless handheld such as palm can also message and use a micro browser. The industrial handhelds, such as Symbol or Psion, can perform very complex operations such as completing orders and taking customer signatures. They have the advantage of working offline.
- 3) **Two-way pagers:** The two-way pager enables its users to receive and send a message as well as use a micro browser.
- 4) **Voice Portals:** Voice portal enable its users to have a conversation with an information service by using a kind of telephone or mobile phone.
- 5) **Communicating appliances:** Such electronic devices are fitted with wireless technology that can participate in the Internet. Examples include wireless cameras, watches radios, pens, and many other devices.
- 6) **Web PCs:** The standard Internet-connected personal computer is still used as an access method to mobile accounts, wirelessly or otherwise. (1 x 6 = 6 marks)

b. What is Wireless Application Protocol (WAP)? What are the benefits of WAP? (8)
Answer:

WAP is an open specification that offers a standard method to access Internet-based content and services from wireless devices such as mobile phones and PDAs. The WAP model is very similar to the traditional desktop Internet. The main benefits of WAP include: (4 marks)

- Non-proprietary method to access Internet-based services and content.
- It is network independent.
- It has been adopted by 95% of handset manufacturers and is being implemented by the majority of carriers.
- WAP browsers can be built on top of any operating system, including PalmOS, EPOC, Windows CE, FLEXOS, OS/9, JavaOS, etc. (1 x 4 = 4 marks)

- Q.9 a. What are the four elements of a good website that encourage visitors to return to the site? (8)

Answer:

The four elements of a good website that encourage visitors to return to the site are:

- **High quality content:** Having the right information at the right place and right time.
- **Ease of use:** The structure of the site should not be overcomplicated or too big. A user never gets lost in a good site since it is clearly signposted.
- **Quick to download:** Good sites also download quickly. Bad sites are cumbersome and slow. Visitors would not wait.
- **Frequently updated:** Good sites put up new information that is useful, relevant and timely for their audience, which requires money, time and energy to maintain.

- b. Define the following terms briefly:

(8)

- (i) Phishing
- (ii) Copyright

Answer:

(i) Phishing: Computer criminals used a relatively new method – phishing, which is becoming more and more popular amongst hackers. Recently many banks all over the world encountered a variety of frauds and scams committed by hackers, swindlers and inside bank officials. But the most wide spread crime against banks and especially accounts owners is a so-called 'phishing scam'. This scam is always entailed by usual spam. Swindlers try to trick consumers into giving up

Refer pages 498-499 of Text Book

- (ii) Refer page 499 of Text Book

TEXT BOOK

- I. E-Commerce – An Indian Perspective, P. T. Joseph, S. J., Second Edition, PHI, 2007