SECTION-I

2. Write short answers to any SIX (6) questions: (12)

(i) Define the term digital convergence.

Ans> The digital convergence is the technological merger of various industries/enterprises through some electronic gadgets that exchange information between them.

(ii) How does trackball work?

Ans> The trackball is a movable ball, on top of a stationary device, that is rotated with fingers or palm of the hand. Its popularity surged with the advent of laptop computers where traveling users found themselves without a flat surface to roll the traditional mouse. It looks like the mouse turned upside down and likewise, has additional buttons whose functions vary depending on the software.

(iii) Why is it important to test a system before use?

Ans> In system-testing, parts or modules are linked together to test their workability as a one system. Actual data may be used to do the system testing and at the same time, erroneous data can also be used to check whether the system fails or not.

(iv) What is groupware?

Ans> A technique to share information, in which many users or researchers can work on their projects by sharing the same domain of information online, is called groupware.

(v) Give one difference between intranet and extranet.

Ans> An intranet is a privately owned, secure, business network based on Internet technology, although not necessarily connected to the internet. While an extranet is

two or more intranets connected in such a way that they enable collaboration among the companies that own the separate intranets.

(vi) Write two functions of Network Layer.

Ans Following are the two functions of Network Layer:

1. Network layer is responsible for determining addressing on the network.

2. It manages network traffic congestion.

(vii) List two features of modem.

Ans Features of Modem:

Two features of modem are as follow:

1. It enables users to transmit data from one computer to another by using standard telephone lines instead of special communication lines such as fiber optic or cable.

2. It is a device that can convert digital signals into analog form as well as analog signals back to digital signals.

(viii) What is broadband?

Ans Broadband is a technique for transmitting large amounts of data, voice and video over long distances simultaneously by modulating each signal onto a different frequency. Using the FDM (frequency division multiplexing) technique, several streams of data can be transmitted simultaneously.

(ix) Give two examples of analog data.

Ans Two examples of analog data are:
1. Frequency   2. Amplitude

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3. Write short answers to any SIX (6) questions: (12)

(i) How computers can be used in departmental stores?

Ans Record of sales are input to the store's computer and used for accounting, restocking store inventory, and weeding out products that sell well.

(ii) What is computer simulation?

Ans A computer simulation is a special type of computer model, which provides the behavior of a system that might exist outside the computer.

(iii) Define the term video conferencing.

Ans Video conferencing is a type of conferencing in which video cameras and microphones capture sight and sound transmission over networks. It is an advance form of teleconferencing. Video conferencing can speed up business process and procedures in the same way that the fax and the e-mail have revolutionized the way we share information.

(iv) Define cache memory.

Ans Cache memory usually has a very small size as compared to the total memory in the computer but very fast to RAM. RAM technology is used to build a cache memory. The cache memory plays very important role in increasing the performance of a computer system.

(v) State the purpose of Input/Output instruction.

Ans Every CPU provides if users with the operations of reading data from a peripheral device and writing data to a peripheral device. To use these operations, a programmer may use input and print commands provided by the CPU.

(vi) What is stack register?

Ans The stack register is the arrangement of data in the special purpose storage areas.

(vii) List two segment registers.

Ans Following are the two segment registers:
1. Code segment
2. Data segment

(viii) What are interrupts?

Ans Interrupts are the signals, normally generated by Input/Output (I/O) devices. In this scheme, the processor issues of the command to the I/O devices. When the devices get ready, these generate an interrupt signal for the processor. On sensing this signal, the processor

suspends all other processing and performs the I/O operation.

(ix)   Describe privacy issue.

Ans Generally, a privacy policy is a statement or a legal document that discloses some or all of the way a party gathers, uses, discloses, and manages a customer's or client's data.

In the sense of computer, an organization is responsible for keeping the data updated through specific privacy policy.

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4.   Write short answers to any SIX (6) questions: (12)

(i)   Write two events of keyboard.

Ans Following are the two events of keyboard:
1. Key Down   2. Key Up

(ii)   Explain concept of multitasking in operating system.

Ans The capability of an operating system to load multiple programs into memory at one time and to perform two or more processes concurrently, such as printing a document while editing another, is known as multitasking.

(iii)   Define insertion point in MS-Word.

Ans In MS-Word, insertion point is the point where the next characters typed from the keyboard will appear on the display screen.

(iv)   List any two features of text editor.

Ans Following are the two features of text editor:
1. Insert text   2. Delete text

(v)   State the use of page setup dialog.

Ans You can set margins, headers and footers, scale the printed page, add and format and more by using the page setup dialog.

(vi)   Distinguish between formulas and functions.

Ans Difference:

Formulas	Functions
1. Formulas are entered in the worksheet cells and must begin with an equal sign "=".	1. Functions are built-in formulas used to perform complex operations.
2. Formulas are used to express mathematical relationships between cells.	2. Functions are used to perform certain tasks.
3. Formulas are less efficient way of performing mathematical operations than functions.	3. Function can be a more efficient way of performing mathematical operations than formulas.

(vii) What is relative address in MS-Excel?

Ans Calling cells by just their addresses (such as "A1") is called relative address.

(viii) What do you know about newsgroup?

Ans Newsgroups are discussion groups on the Internet. Newsgroups are classified by subject and do not necessarily deal with journalism or "news". Health, hobbies, celebrities, and cultural events are the subjects of many newsgroups.

(ix) State any two negative impacts of internet on society.

Ans Following are two negative impacts of internet on society:

1. Sometimes, it is time-wasting due to the excess usage of some social websites.

2. Due to excess use of internet, the young persons have left the extracurricular activities, *e.g.*, games, etc. They are going to be unhealthy day by day.

SECTION-II

Note: Attempt any THREE (3) questions.

5. What is software? Describe different categories/types of software. (8)

Ans Software:

A computer program or a collection of computer programs combined together to perform certain tasks, is referred to as software.

Types of Software:

Software can be classified into following main two categories:

(i) System Software (ii) Application Software

(i) System Software:

System software is used to control the usage and allocation of different hardware components and enables the other application programs to execute. For example,

- Operating Systems
- Utility Programs (Backup/Restore)
- Drivers

The system software may be a combination of many such programs.

(ii) Application Software:

Application software is the software that has been developed to solve a specific problem or to provide audio, video, or multimedia entertainment to the users. It may be categorized as under:

(a) Custom-built (b) Packaged

(a) Custom-built Software:

This is the software that is designed and developed for a particular customer.

(b) Packaged software:

This software is the kind of off-the-shelf programs or components, developed for sale to the potential software developers/users for their use. The examples are: MS-Word, MS-Power point, Personal Oracle, etc.

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6. **What is bus topology? Explain its working with diagram. Discuss its advantages and disadvantages.** **(2,2,2,2)**

Ans **Bus Topology:**

The simplest type of topology is the bus topology. In a bus topology, all computers or network nodes are connected to a common communication medium. In a local network, bus medium is often a central wire called a bus.
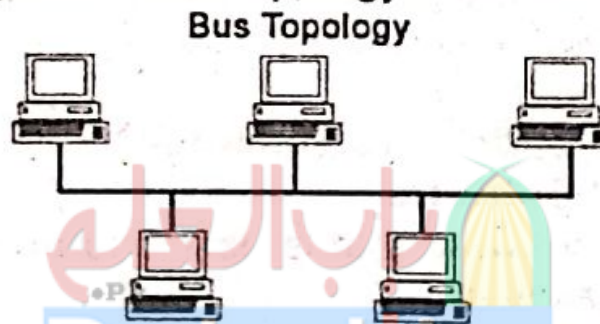
Working of Bus Topology:

If a computer wants to send data to other computer, it sends the data and destination address via the bus. The data and address move from one end of the network to the other. Each computer checks this address and, if it matches with this computer, the computer keeps the data. Otherwise, the data moves to the next computer.

The electrical signal from a computer travels the entire length of the cable. When the signal reaches the end of the wire, it bounces back and travels back up the wire, it is called ringing. To stop the signals from ringing, you have to attach terminators at either end of the segment. The terminators absorb the electrical energy and stop the reflections.

Diagram:

The diagram of bus topology is as follow:

Bus Topology

Advantages:

Some advantages of bus topology are as follow:

- Simple, easy to use and suitable for very small networks.
- Allows more computers to join the network.
- Easy to extend a bus, two cables can be joined with a connector.

Disadvantages:

Some disadvantages of bus topology are as follow:

- Heavy network traffic can slow a bus considerably.
- Each connector reduces the strength of the electrical signal.
- As the number of computer increases, the speed of the network slows down.

7. **What is data transmission mode? Explain its types with examples.** (2,2,2,2)

Ans Data Transmission Mode:

The way in which data is transmitted from one place to another is called data transmission mode.

Types of Data Transmission Modes:

There are two types of data transmission modes. These are:

(1) Parallel Transmission   (2) Serial Transmission

(1) Parallel Transmission:

In parallel transmission, bits of data flow concurrently through separate communication lines. The automobile traffic on a multi-lane highway is an example of parallel transmission. Inside the computer, binary data flows from one unit to another using parallel mode.

(2) Serial Transmission:

In serial data transmission, bits of data flow in sequential order through single communication line. The flow of traffic on one-lane residential street is an example of serial data transmission mode. Further, Serial transmission is of two types:

(i) Asynchronous Transmission:

In asynchronous transmission, data is transmitted one byte at a 'time'. This type of transmission is most commonly used by microcomputers. The data is transmitted character-by-character as the user types it on a keyboard.

(ii) Synchronous Transmission:

In synchronous transmission, large volumes of information can be transmitted at a time. In this type of transmission, data is transmitted block-by-block or word-by-word simultaneously. Each block may contain several bytes of data.

8. **Define language translator. Discuss different types of language translators.** (2,2,2,2)

Ans **Language Processors or Translators:**

Language processors or translators are softwares used to translate the source program (code written in high level language) or assembly language program into machine code. The language processor is of three types:

1) Compilers   2) Interpreters   3) Assemblers

1. Compiler:

The translator program that translates the complete source code (written in high-level language) as a whole in machine code before execution is called compiler. The compiler takes source code as input and returns object code as output. The object code or program can be executed a number of times without translating it again.

2. Interpreter:

A translator, translates instructions of source program into machine code one after the other and execute it immediately before the translation of the next instruction is called interpreter.

An interpreted program runs slower than a compiled program because an interpreted program has to be translated every time by an interpreter, to execute it. Although, the process of interpreting a program is slower but it is very useful during program development as errors can be detected and corrected very easily.

3. Assembler:

A program written in assembly language must be translated into machine code before its execution on the computer. A translator program that translates the program written in assembly language into machine code is called assembler.

Q.9. Explain any four types of computer viruses.

(2,2,2,2)

Ans **Types of Viruses:**

Following are some important types of viruses:

- Boot Sector Virus
- Chernobal Virus
- Logic Bomb
- Trojan Horse
- Redlof

Boot Sector Virus:

The boot sector virus modifies the program in the boot sector and is loaded into memory whenever computer is turned on. This virus is attached with the executable files i.e., .exe, .com and .dll files. When the user uses these executable files, the virus attached with these files is also activated and then it infects' other files and also performs destructive commands and destroys the data files also.

Chernobal Virus:

The famous chernobal virus deletes all the Microsoft Office files and also the partition information from the disk, hence causing a major loss data.

Logic Bomb:

Logic bomb, differ from other viruses in that they are set to go off at a certain time and date. A disgruntled programmer, for a defense contractor created a bomb in a program that was supposed to go off two months after he left. Designed to erase in inventory tracking system, the bomb was discovered only by chance.

Trojan Horse:

The Trojan horse covertly places illegal, destructive instructions in the middle of a legitimate program, such as a computer game. Once you run the program, the Trojan horse goes to work, doing its damage while you are blissfully unaware. An example of Trojan horse is Format C.