

College of Computer Science and Information Technology, Latur.

Department of Computer Science

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Choice Based Credit System (CBCS Revised) Class/Semester:

B.Sc.(CS) FY SEM-I

Name of Paper: Basics of Computer System(BCS-101)

Prepared by: **Mr. V. D. Patil**

Question Paper

Q.1 Attempt any FIVE of the following (3 Marks each) (15)

- a) What is E-Mail?
- b) Discuss the Concept of Mouse.
- c) What is Operating System?
- d) Explain Cache Memory.
- e) Write a Note on, Memory Card.
- f) Explain Data Transmission Modes.
- g) Write a Note on, 'Mainframe'.

Q. 2 Attempt any Three of the following (5 Marks each) (15)

- a) Explain Basic Organization of Computer.
- b) Discuss the Concept of Workstation's.
- c) Explain Characteristics of Computer.
- d) Explain Second and Third Generation of Computer.
- e) Explain Client and Server Model.

Q. 3 Answer any Three of the following (5 Marks each) (15)

- a) Explain the Concept of Keyboard.
- b) Explain the Concept of Monitor's.
- c) Explain the Concept of ROM in detail.
- d) Write a Note on, 'Trackball'.
- e) Explain Bio-Metric Device in detail.

Q. 4 Attempt any Three of the following (5 Marks each) (15)

- a) Explain the Concept of Hard Disk Drive.
- b) Explain the Concept of Disk O.S.
- c) Explain the Concept of USB Flash Drive.
- d) Explain the Concept of Linux O.S.
- e) Explain Windows O.S.

Q .5 Write Short notes on any three of the following (5Marks each) (15)

- a) FTP
- b) What is Network? Explain Types of Network.
- c) OSI Model
- d) Web Browser and Types of Web Browser
- e) RAM

Model Answer Paper

Q.1 Attempt any FIVE of the following (3 Marks each) (15)

a) What is E-mail?

Answer:

It stands for electronic mail.

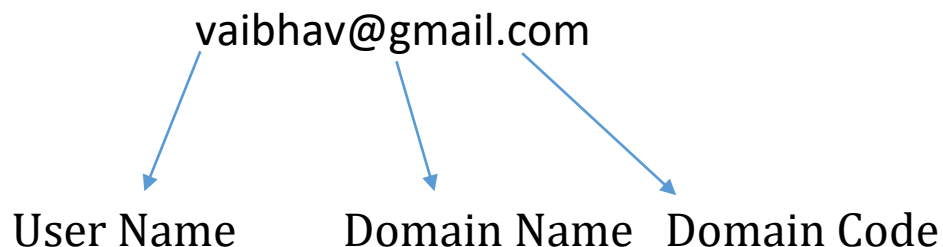
E-mail is one of the most popular facilities of the Internet people can send and receive message referred as, main, within a few minute across content. It can be used for personals and business communication and exchange of information. Any type of computer on the Internet can send and receive mail.

The Heart of E-mail service is the E-mail service provider. The E-mail service provider is also caused as, Internet service provider (ISP). This is an organization that maintains a computer capable of sending and receiving, E-mail. When user wants an E-mail address, an account is created for him/her, on the E-mail sender. The name of this account is referred as, his E-mail ID. A typical E-mail will be as follows:

Username@domin name

- i. The username is identify of the user.
- ii. @ separates the user name and domain name.
- iii. Every E-mail server is given a unique name, referred as domain name

For example :



Like .Com other types of Organization are as,

- 1) .Edu – refers to Educational Institute.
- 2) .com – refers to Commercial Organization.
- 3) .gov – refers to Government site.
- 4) .net – refers to network related Organization.

b) Discuss the concept of Mouse.

Answer:

Mouse is most popular pointing device. It is a very famous cursor-control device having a small palm size box with a round ball at its base which senses the movement of mouse and sends corresponding signals to CPU when the mouse buttons are pressed.

Generally it has two buttons called left and right button and a wheel is present between the buttons. Mouse can be used to control the position of cursor on screen, but it cannot be used to enter text into the computer.

Advantages:-

- 1) Clicking
- 2) Double Clicking
- 3) Dragging
- 4) Easy to use
- 5) Not very expensive

Moves the cursor faster than the arrow keys of keyboard.



c) What is Operating System?

Answer:

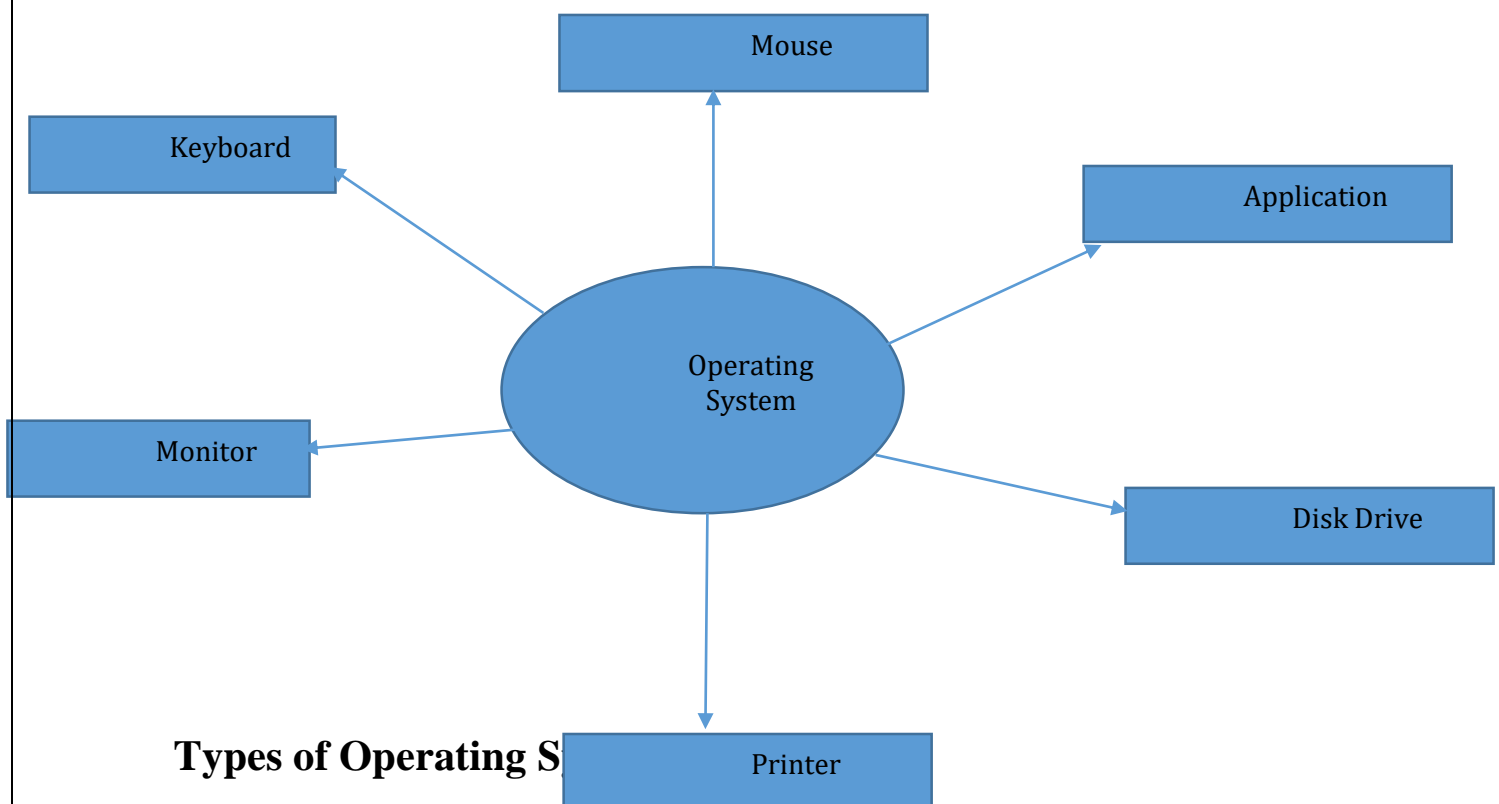
Definition: - “An operating system is the program that after being initially loaded into the computer by a boot program, which manages all other programs in the Computer. The other programs are called as Application or Application programs.”

□ The functions of Operating System are as follows

1. Controlling the peripheral devices such as, disk drives, printers, etc.
2. Operating system performs tasks such as, recognizing input from the Keyboard, Sending output to display screen.
3. Provides a user interface.

Example: Command Line, Graphical user Interface

The following diagram shows attached the peripheral devices to operating



1. Multi-users:

Allows to or more users to run programs at the same time. The windows Operating System provides the facility of multi-user.

2. Multi-processing:

Supports running a program in more than one CPU.

Example: Using Internet for E-mails concurrently (Same Time)

3. Multitasking:

Allows more than one program to run at the same time.

4. Multithreading:

Allows different parts of a same program to run at the same time.

5. Real Time:

Responds input instantly. Quickly input and quickly Output.

d) Explain Cache Memory.

Answer:

Cache memory is a very high speed semiconductor memory which can speed up CPU. It acts as a buffer between the CPU and main memory.

It is used to hold those parts of data and program which are most frequently used by CPU. The parts of data and programs are transferred from disk to cache memory by operating system, from where CPU can access them.

Advantages

The advantages of cache memory are as follows

Cache memory is faster than main memory.

It consumes less access time as compared to main memory.

It stores the program that can be executed within a short period of Time It stores data for temporary use.

e) write a Note on Memory Card.

Answer:

A memory card or flash card is an electronic flash memory data storage device used for storing digital information. These are commonly used in portable electronic devices, such as digital cameras, mobile phones, laptop computers, tablets, MP3 players and video game consoles.

Video game consoles use memory cards to hold saved game data. Cartridge-based systems primarily used battery-backed volatile RAM within each individual cartridge to hold saves for that game. The Neo Geo AES, released in 1990 by SNK, was the first video game console able to use a memory card. Memory cards became commonplace when home consoles moved to read-only optical discs for storing the game program, beginning with systems such as the Turbo Grafx -CD and Sega-CD.

The Storage Capacity of Memory Card is up to 512 GB.



f) Explain Data Transmission Modes.

Answer:

There are three modes of data transmission such as,

1. Simplex:

A simplex communication system can transmit data in one direction only. The device connected to such a circuit are either send only. Ex. Keyboard or receive-only Ex. printer.

2. Half Duplex:

A half-Duplex communication system can transmit data in both directions, but in only one direction at a time. Hence, it can alternately send and receive data. It is most suitable for voice communication. Using telephones in which one person speaks at a time. It is suitable also for connecting a terminal to a computer in which the terminal transmits data & the computer responds with an acknowledgement.

3. Full duplex :

More even, some applications require bi-directional data transfer simultaneously. In such cases, a full duplex system is used that allows data to follow in both directions simultaneously. It improves efficiency because it eliminates the directions because it eliminates the direction switching delay of a half-duplex system.



Simplex



Half Duplex



Full Duplex

Fig. Modes of Data Transmission

g) Write a note on 'Mainframe'.

Answer:

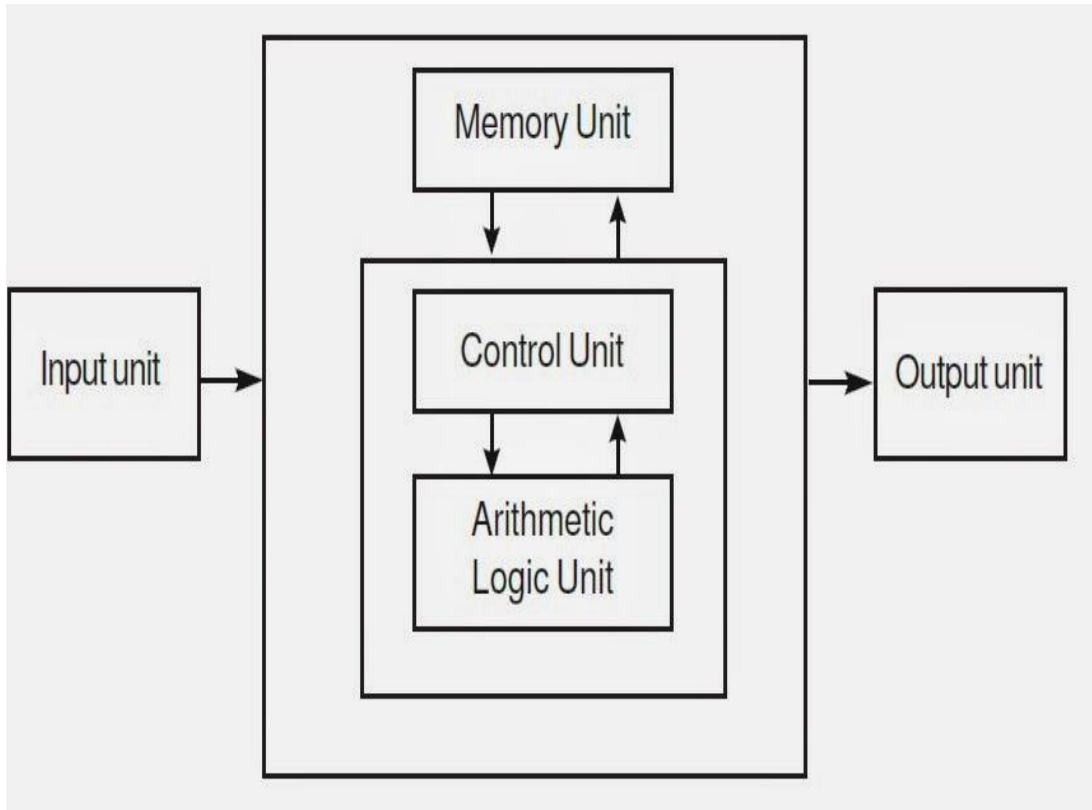
Mainframe is very large in size and is an expensive computer capable of supporting hundreds or even thousands of users simultaneously. Mainframe executes many programs concurrently and supports many simultaneous execution of programs. A data processing system employed mainly in large organizations for various applications, including data processing, process control, industry and consumer statistics, enterprise resource planning, and financial transaction processing. Mainframes use proprietary operating systems, most of which are based on Unix, and a growing number on Linux. Over the years they have evolved from being room-sized to networked configurations of workstations and servers that are an extremely competitive and cost effective platforms for e-commerce development and hosting. Mainframes are so called because the earliest ones were housed in Large Metal Frames.



Q. 2 Attempt any Three of the following (5 Marks each) (15)

1) Explain Basic Organization of Computer.

Answer:



Block Diagram Basic Computer Organization

Basic Computer Organization are as follows:

1. Input Unit:

The process of sending the data and Instructions for the processing through some suitable devices such as Keyboard, Mouse etc. is called Input. The devices translate the data from human understandable form into electronic impulses which are understood by the computer.

2. Central Processing Unit (CPU):-

This unit of the computer is the brain of computer system, which does all the processing, calculations, problem solving and controls all other functions of all other elements of the computer. The CPU consists of the following three distinct units namely. 1. Memory Unit 2. Control Unit 3. Arithmetic and Logic Unit 1.

i) Memory Unit: This holds the data in in terms of Program and files. This memory unit is usually referred as primary storage section. The units in which memory unit is measured are known as BYTES. BYTE is the space required to store 8 characters or alphabet or digits to any other special character.

ii) Control Unit: This unit which coordinates all the activities of each and every element of computer. It decodes the instructions given by various users and it sends commands and signals that determine the sequence of various instructions.

It also controls the flow of data from the main storage.

iii) Arithmetic and Logic Units:-

This unit performs arithmetic operations such as addition, subtraction, multiplication and division. It also does Logical Operations such as comparison of numbers etc. Thus this unit helps by processing data and taking logical decisions.

3) Output: -

The processing of extracting the data from CPU through some suitable devices is called Output. The common used output devices are VDU, Printers, Plotter, magnetic media like floppy Disks etc.

b) Discuss the Concept of Workstation's.

Answer:

Workstation is a computer used for engineering applications (CAD/CAM), desktop publishing, software development, and other such types of applications which require a moderate amount of computing power and relatively high quality graphics capabilities.

Workstations generally come with a large, high-resolution graphics screen, large amount of RAM, inbuilt network support, and a graphical user interface. Most workstations also have a mass storage device such as a disk drive, but a special type of workstation, called a diskless workstation, comes without a disk drive.

Common operating systems for workstations are UNIX and Windows NT. Like PC, Workstations are also single-user computers like PC but are typically linked together to form a local-area network, although they can also be used as stand-alone systems.



c) Explain Characteristics of Computer.

Answer:

1) High Speed

Computer is a very fast device.

It is capable of performing calculation of very large amount of data.

2) Accuracy

In addition to being very fast, computers are very accurate.

The calculations are 100% error free.

Computers perform all jobs with 100% accuracy provided that correct input has been given.

3) Storage Capability

Memory is a very important characteristic of computers.

A computer has much more storage capacity than human beings.

It can store large amount of data.

It can store any type of data such as images, videos, text, audio and many others.

4) Diligence

It can work continuously without any error.

It can do repeated work with same speed and accuracy.

5) Versatility

A computer is a very versatile machine.

A computer is very flexible in performing the jobs to be done.

6) Reliability

A computer is a reliable machine.

Modern electronic components have long lives.

Computers are designed to make maintenance easy.

7) Automation

Computer is an automatic machine.

Automation means ability to perform the given task automatically.

d) Explain Second and Third Generations of computer.

Answer:

Second Generation

The period of second generation was 1959-1965. In this generation transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines made of vacuum tubes.



The main features of second generation are:

- 1) Use of transistors
- 2) Reliable in comparison to first generation computers
- 3) Smaller size as compared to first generation computers
- 4) Generated less heat as compared to first generation computers

- 5) Consumed less electricity as compared to first generation computers
- 6) Faster than first generation computers
- 7) Still very costly
- 8) A.C. needed

Examples

IBM 1620

IBM 7094

Third Generation

The period of third generation was 1965-1971. The computers of third generation used integrated circuits (IC's) in place of transistors.



The main features of third generation are:

IC used

- 1) More reliable in comparison to previous two generations
- 2) Smaller size
- 3) Generated less heat
- 4) Faster
- 5) Lesser maintenance
- 6) Still costly
- 7) A.C needed
- 8) Consumed lesser electricity
- 9) Supported high-level language Some

Examples

IBM-360 series

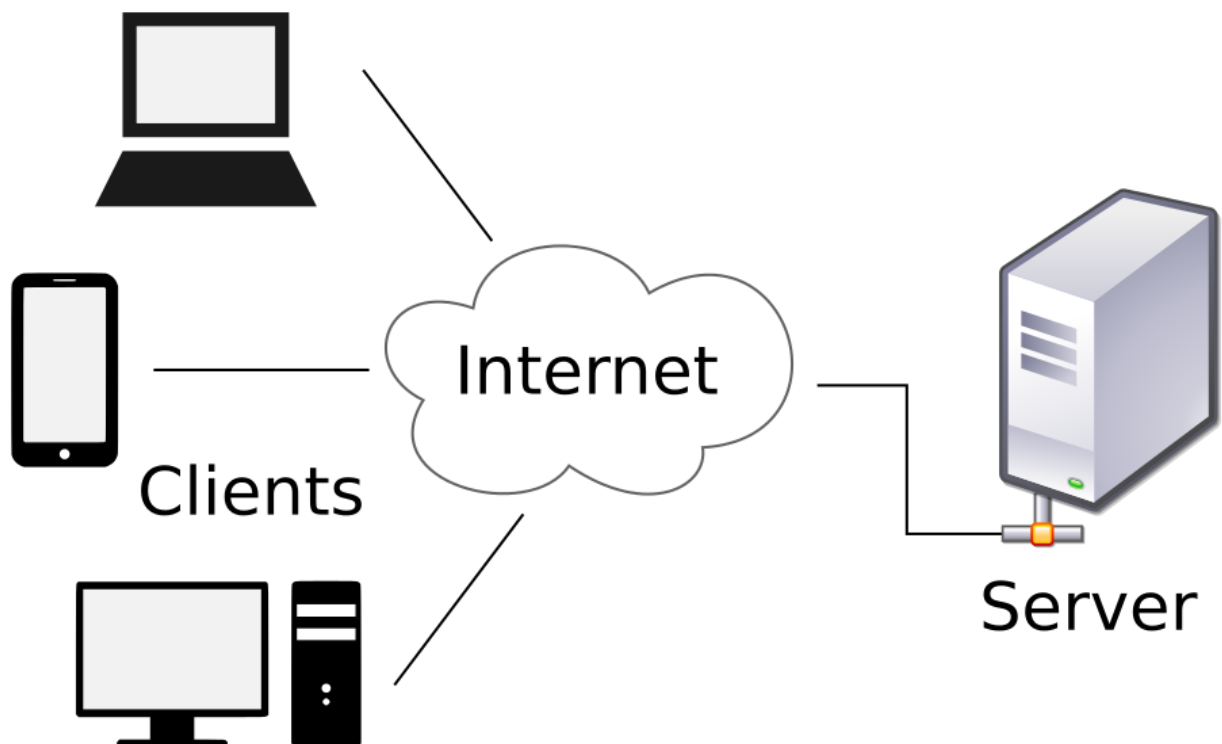
Honeywell-6000 series

PDP(Personal Data Processor)

e) Explain Client and Server Model.

Answer:

The **client-server model** is a distributed application structure that partitions tasks or workloads between the providers of a resource or service, called servers, and service requesters, called clients.[1] Often clients and servers communicate over a computer network on separate hardware, but both client and server may reside in the same system. A server host runs one or more server programs which share their resources with clients. A client does not share any of its resources, but requests a server's content or service function. Clients therefore initiate communication sessions with servers which await incoming requests. Examples of computer applications that use the client-server model are Email, network printing, and the World Wide Web.



Q. 3. Answer any Three of the following (5 Marks each) (15)

a) Explain the concept of Keyboard.

Answer:

Keyboard is the most common and very popular input device which helps in inputting data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions.

Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available for Windows and Internet.

Following are the Keys available on Keyboard:

The keys on the keyboard are as follows:

Sr. No.	Keys	Description
1	Typing Keys	These keys include the letter keys (A-Z) and digit keys (0-9) which generally give same layout as that of typewriters.
2	Numeric Keypad	It is used to enter numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machines and calculators.
3	Function Keys	The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has unique meaning and is used for some specific purpose.

4	Control keys	These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	Special Purpose Keys	Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

b) Explain the concept of Monitor's.

Answer:

Monitors

Monitors, commonly called as Visual Display Unit (VDU), are the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels.

There are two kinds of viewing screen used for monitors.

- ☐ Cathode-Ray Tube (CRT)
- ☐ Flat- Panel Display

Cathode-Ray Tube (CRT) Monitor

The CRT display is made up of small picture elements called pixels. The smaller the pixels, the better the image clarity, or resolution.

Most screens are capable of displaying 80 characters of data horizontally and 25 lines vertically. There are some disadvantages of CRT

- ☐ Large in Size
- ☐ High power consumption



Flat-Panel Display Monitor

The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. You can hang them on walls or wear them on your wrists. Current uses of flat-panel displays include calculators, videogames, monitors, laptop computer, graphics display.

The flat-panel display is divided into two categories

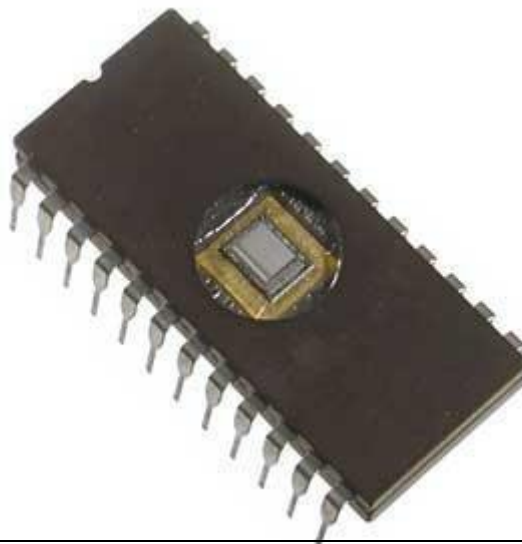
- **Emissive Displays** - The emissive displays are devices that convert electrical energy into light. Example are plasma panel and LED(Light-Emitting Diodes).
- **Non-Emissive Displays** - The Non-emissive displays use optical effects to convert sunlight or light from some other source into graphics patterns. Example is LCD(Liquid-Crystal Device)



c) Explain the concept of ROM in detail.

Answer:

ROM stands for Read Only Memory. The memory from which we can only read but cannot write on it. This type of memory is non-volatile. The information is stored permanently in such memories during manufacture. A ROM, stores such instructions that are required to start a computer. This operation is referred to as bootstrap. ROM chips are not only used in the computer but also in other electronic items like washing machine and microwave oven.



The Advantages of ROM are as follows:

- i) Non-volatile in nature
- ii) These cannot be accidentally changed
- iii) Cheaper than RAMs
- iv) Easy to test
- v) More reliable than RAMs
- vi) These are static and do not require refreshing

Following are the various Types of ROM

PROM (Programmable Read only Memory)

PROM is read-only memory that can be modified only once by a user. The user buys a blank PROM and enters the desired contents using a PROM program. Inside the PROM chip there are small fuses which are burnt open during programming. It can be programmed only once and is not erasable.

EPROM(Erasable and Programmable Read Only Memory)

The EPROM can be erased by exposing it to ultra-violet light for a duration of up to 40 minutes. Usually, an EPROM eraser achieves this function. During programming, an electrical charge is trapped in an insulated gate region. The charge is retained for more than ten years because the charge has no leakage path.

EEPROM(Electrically Erasable and Programmable Read Only Memory)

The EEPROM is programmed and erased electrically. It can be erased and reprogrammed about ten thousand times. Both erasing and programming take about 4 to 10 ms (milli second).

d)Write a Note on, ‘Trackball’.

Answer:

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on ball, pointer can be moved. Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button and a square.

A trackball is a computer cursor control device used in many notebook and laptop computers. The trackball is usually located in front of the keyboard toward the user. Essentially, the trackball is an upside-down mouse that rotates in place within a socket.



e) Explain Bio-Metric Device in detail?

Answer:

A **Biometric device** is a security identification and authentication device. Such devices use automated methods of verifying or recognizing the identity of a living person based on a physiological or behavioral characteristic. These characteristics include fingerprints, facial images, Iris prints and voice recognition.

Biometrics is being used to establish better and accessible records of the hour's employee's work. With the increase in "Buddy Punching (a case where employees clocked out coworkers and fraudulently inflated their work hours) employers have looked towards new technology like fingerprint recognition to reduce such fraud. Additionally, employers are also faced with the task of proper collection of data such as entry and exit times. Biometric devices make for largely fool proof and reliable ways of enabling to collect data as employees have to be present to enter biometric details which are unique to them.



Q. 4 Attempt any Three of the following (5 Marks each) (15)

a) Explain the concept of Hard Disk Drive.

Answer:

A hard disk drive (HDD), hard disk, hard drive or fixed disk is a data storage device used for storing and retrieving digital information using one or more rigid rapidly rotating disks (platters) coated with magnetic material. The platters are paired with magnetic arranged on a moving actuator arm, which read and write data to the platter surfaces. Data is accessed in a random manner, meaning that individual blocks of data can be stored or retrieved in any order and not only sequentially. HDDs are a type of non-volatile memory, retaining stored data even when powered off.

The primary characteristics of an HDD are its capacity and performance. Capacity is terabyte (TB). Typically, some of an HDD's capacity is unavailable to the user because it is used by the file system and the computer operating system, and possibly inbuilt redundancy for error correction and recovery.



b) Explain the concept of Disk Operating System.

Answer:

The DOS stands for Disk Operating System. OS is an acronym often used to describe MS-DOS. MS-DOS means Microsoft Disk Operating System. MS-DOS requires the user to type command instead of using a mouse. The MS-DOS was originally developed by Microsoft IBM i.e. International Business Machine.

Initially MS-DOS was called as, Q-DOS i.e. Quick & Dirty Operating System.

But in 1981, IBM & Microsoft both released its version: Microsoft released its version under the name 'MS-DOS' while IBM released its version under the name 'PC-DOS' for IBM PC's.

The No. of versions of DOS is as follows: (History)

MS-DOS 1.0 in 1981, MS-DOS 1.25, MS-DOS 2.0, MS-DOS 3.0, MS-DOS 3.1, MS-DOS 3.2, MS-DOS 3.3, MS-DOS 4.0, MS-DOS 4.1, MS-DOS 5.0, MS-DOS 6.0.

Then, in 1994, MS-DOS 6.21 was released in March, 1994 & MS-DOS 6.22 was released in April, 1994.

Today all Operating System could be considered as, Disk O.S..

Disk O.S. Performs no. of job's such as:

1. Controlling the way various applications such as, word processors, electronic worksheets, database managers.
2. Providing "House Keeping" or file management utilities that perform useful task such as.
 - a. Disk preparation: That is to formatting, copying disks, etc.
 - b. File operations: This includes the facilities for creating, displaying, copying, reading, deleting files.
3. Controlling the way to computer interprets creation commands.

c) Explain the concept of USB Flash Drive.

Answer:

A USB flash drive, also commonly known as a USB drive, USB stick, USB key, and a variety of other names, is a data storage device that includes flash memory with an integrated USB interface. USB flash drives are typically removable and rewritable, and physically much smaller than an optical disc. Most weigh less than 30 grams. As of January 2013, drives of up to 512 gigabytes (GB) were available. A one-terabyte (TB) drive was unveiled at the 2013 Consumer Electronics Show and became available later that year. Storage capacities as large as 2 TB are planned, with steady improvements in size and price per capacity expected. Some allow up to 100,000 write/erase cycles, depending on the exact type of memory chip used, and have a 10-year shelf storage time.

USB flash drives are often used for the same purposes for which floppy disks or CDs were once used, i.e., for storage, data back-up and transfer of computer files. They are smaller, faster, have thousands of times more capacity, and are more durable and reliable because they have no moving parts. The larger USB drive capacity compared to the 1.44 MB 3.5-inch floppy disk.



d) Explain the concept of Linux Operating System.

Answer:

Linux was originally developed a free operating system for personal computers based on the Intel x86 architecture. In 1960, Ken Thomson, Dennies Richie AT & T bell laboratories developed the Unix Operating System. For Intel based PC's, Linux started out at the University Of Helsinki OS Personal Project Of Computer Science Students named Linux Bachelor Torvalds. Linux has all the networking tools such as. FTP support, Web Browsers & so on.

Advantages of Linux:

1. Full Multitasking:

Multiple tasks can be run in the background & multiple dives such as, modem, Hard disk drives, Printer can be accessed at the same time.

2. Virtual Memory:

Linux safely uses a Portion of hard drive as virtual memory, which increases the efficiency of system by keeping active processes in main memory RAM & placing let's frequently used on inactive portion of memory on the disk

3. Build in Network Support: Linux uses standard TCP/IP protocol, including Network file system (NFS) network Information Services & so on.

4. Shared Libraries:

Linux saves memory and hard drive space, because each command shares a common library that can be call at run time.

5. Lower cost than Unix System:

If we have a fast Internet Connection and CD writer drive, we can freshly download Linux and its documentation from the internet.

6. X-Windows System:

Linux also provides the X windows system a powerful graphics system interface.

7. Documentation:

Every Linux distribution comes with more than 12000 pages of documentation in the form of manual pages, information documents or studies.

e) Explain Windows operating System.

Answer:

Windows are Graphical User Interface, i.e. GUI. Which provide an easy way to access programs and data on the computer.

Windows is nothing but an area on the screen, through which a particular pieces of software or data file may be viewed.

The Windows O.S. is developed & maintained by Microsoft, the company founded by 'Bill Gates'

The first version of Windows 1.0 was released in 1985.

Then Windows 2, Windows 2.0, Windows 2862.1 & 3862.1, Windows 3.0, Windows 3.1, Windows 3.11, Windows 95. That contains five versions such as, Windows 95A, Windows 95B, Windows 95B USB, Windows 95C, Windows 98, Windows 2000, that contains five editions Windows 2000 professional, Windows 2000 Server, Windows 2000 Advanced Server, Windows 2000 data center service, Windows 2000 small business server, Windows Multimillion Edition, Windows XP, Windows 2003 that contains five editions such as, Web edition, Standard Edition, Enterprise Edition, Data Center Edition, Small Business server, Windows Vista was released. Now day's windows 2007, 2010 also available.

Windows O.S. Basics or Elements such as:

1. Desktop: -

You can see after you log on to Windows, that contains icons, menus, applications, desktop features such as, My Documents, My Computer, My Network Places, Recycle Bin, Internet Explorer & so on.

2. My Computer:-

That contains different drivers such as, C:, D:, E:, F: & so on.

You can save your files & folders in any drive.

3. Recycle Bin: -

In the Recycle Bin stores deleted files, folders, graphics & so on.

4. My Network Places: -

Network is the connection between two or more computers for shared resources.

You can see all resources in my network places such as, files, folders, printers, etc.

Q .5 Write Short notes on any three of the following(5Marks each) (15)

a) FTP.

Answer:

It stands for File Transfer Protocol. It enables an Internet user to move a file from one computer to another on the Internet. A file may contain any type of digital information i.e. text document, image, artwork, movie, sound, etc. By using FTP service.

1. A user enters FTP command on local computer.
2. An FTP process running on users computer (called FTP client process) establishes a connection with an FTP process running on remote computer (called FTP server process)
3. The system then asks the user to enter his/her login name & password on the remote computer to ensure that the user is authorized to access the remote computer.
4. After successful login desired file are downloaded or uploaded by using net for downloading & put for uploading commands. User can also list directories of the remote computer, before deciding which file to transfer.

The FTP service is also used for more secure file transfer operations. In such cases, a user reads a valid username & password to access a particular computer. Ex. For organizations that wish to let only certain people access their computer.

Advantages of FTP :

FTP is very easiest and most secure way to exchange files over the Internet.

By Using FTP we can download the files.

Following types of file we can downloads such as:

- 1) Images
- 2) Sound
- 3) Video
- 4) Software.exe
- 5) Data file like Video games
- 6) Document file

b) What is Network? Explain Types of Network.**Answer:**

The Connection between two or more computers for sharing Information and Resources.

Resources Such as, File, Folder, Disk Drive, and Printer.

Types of Network:

1) LAN (Local Area Network): -

LAN is a Private Network within a single building or campus and up to few Kilometres in length. They are widely used to connect Personal computers and Workstation in company, Offices.

Characteristics of LAN are as,

1. It is a network owned by a private owner.
2. Personal computers, printers, etc., are connected through LAN.
3. LANs are very easy to design and troubleshoot.
4. A central database is used to connect the LAN networks.

Topology: - The Arrangement of Computer Systems to form the Network.

- i) Bus Topology: - The arrangement of computer in a single line is called as Bus Topology.

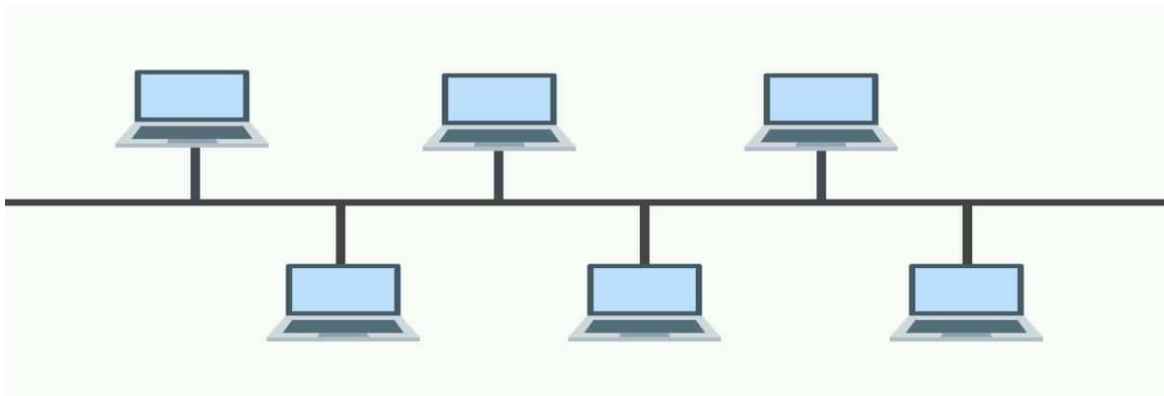
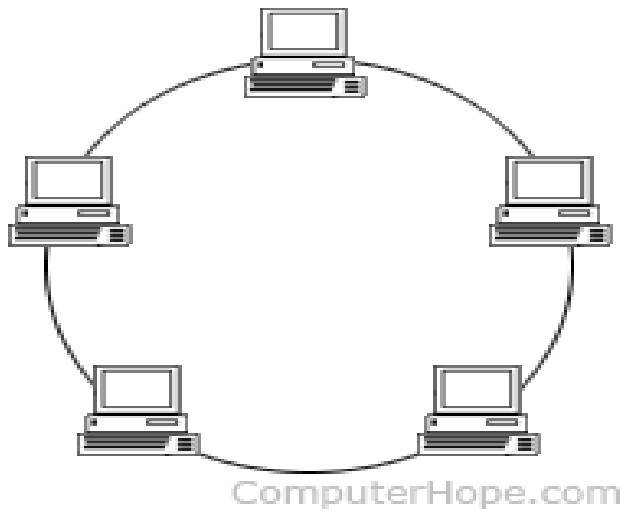


Fig. Bus Topology

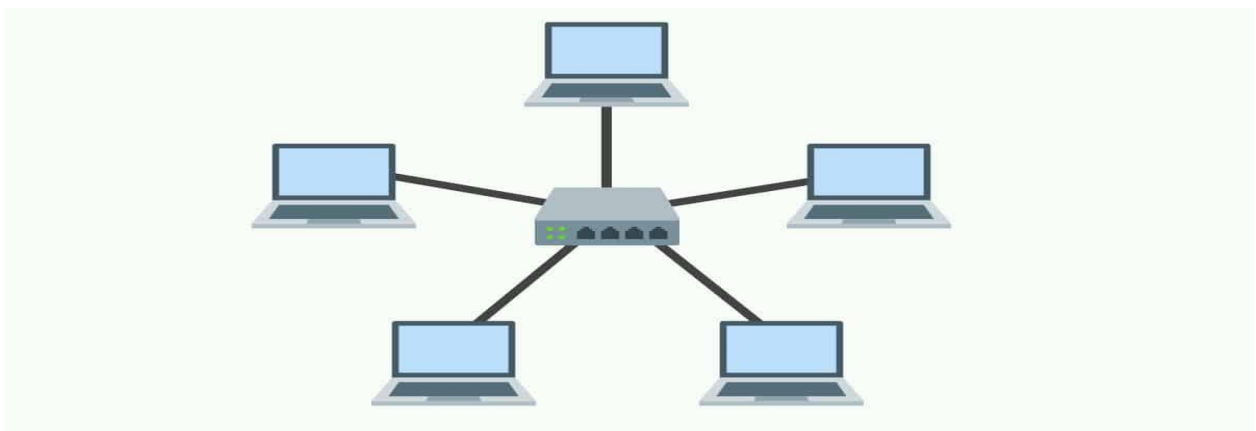
- ii) Ring Topology :-
In Ring Topology Computers are connected to each other like a Ring.

Ring Topology



iii) Star Topology :-

In Star Topology all the computers are connected to one each other in a Star like Manner.



2) MAN (Metropolitan Area Network):

MAN is basically bigger version of LAN. It creates a group or nearby corporate office or City might be either private or public.

A metropolitan area network (MAN) is a network that interconnects users with computer resources in a geographic area or region larger than that covered by even a large local area network (LAN) but smaller than the area covered by a wide area network (WAN).

3) WAN (Wide Area Network)

- A Wide Area Network is a network that extends over a large geographical area such as states or countries.
- A Wide Area Network is quite bigger network than the LAN.
 - A Wide Area Network is not limited to a single location, but it spans over a large geographical area through a telephone line, fibre optic cable or satellite links.
- The internet is one of the biggest WAN in the world.

c) OSI Model.

Answer:

It stands for (Open System Interconnection). There are following seven layers are used in OSI reference modes such as :

1. Application Layer:

It is a collection of miscellaneous protocols for various commonly used applications such as, e-mail, file transfer, remote login, etc.

2. Presentation layer:

This layer performs data encoding, conversion, compression, decompression depending upon application requirement.

3. Session Layer:

That layer's provides establishing, maintaining & transmitting a dialog or session between two end users.

That layer also provides priority management Service that is users for setting priority for lightly IMP message.

4. Transport Layer:

That layer accepts msg. from session layer, segment them into packet, submits them to network layer for further transmission & finally reassemble the packet towards destination. There are two commonly used. Transport layer protocol is TCP & user Datagram protocol (UDP).

5. Network Layer:

Network layer sets up a logical path between two nodes. Two most commonly used network layer protocol are the x.25 protocol & the Internet protocol (IP). There are two types of IP

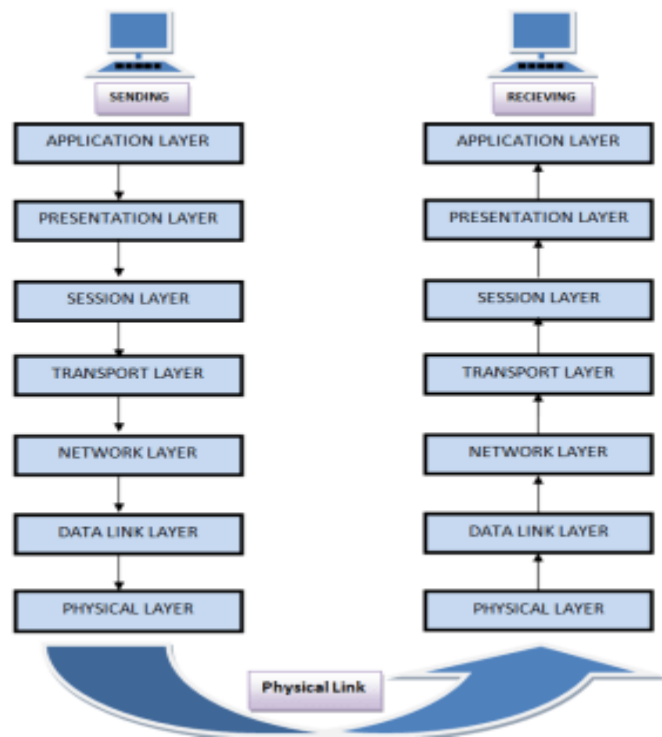
Addresses (i) IPV4 (ii) IPV6 Network Layer function are used in WANS. In LAN data transfer from one node to another node.

6. Data-link Layer:

Physical layer transmit data between two nodes as electrical final (digital/analog), that signals are connected into frames data by using data-link layer also detect and corrects any error in transmitted data.

7. Physical layer:

Physical layer transmit raw bit streams between two nodes by connecting sequence of binary digits into electrical digits.



d) Web Browser and Types of Web Browser.

Answer:

A web browser is a software application for retrieving, presenting & transferring information resources on the www i.e. World Wide Web.

An information resource is identified by a uniform resource locator (URL) and may be web page, image, video or other piece of content.

Hyperlink present in resource enables users easily to navigate their browsers to related resources.

Features:

1. Browsers enable a user to visit a server computer file directly access information stored on it by specifying its URL address, URL

is an addressing scheme used by www browsers to locate files on the Internet.

2. All major web browsers allow the user to open multiple information resources at the same time, either in different browser windows or in different tabs of the same windows.

Types of web browser are as :

- a. Internet Explorer
- b. Google Chrome
- c. Mozilla Firefox
- d. Safari
- e. Opera
- f. Lynx

Most users can use Internet Explorer, Chrome, and Mozilla Firefox for working on Internet.

e) RAM

Answer:

RAM(Random Access Memory) is the internal memory of the CPU for storing data, program and program result. It is read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.

RAM is volatile, i.e. data stored in it is lost when we switch off the computer or if there is a power failure. Hence a backup uninterruptible power system (UPS) is often used with computers. RAM is small, both in terms of its physical size and in the amount of data it can hold.

RAM is of two types such as,

- 1) Static RAM (SRAM)
- 2) Dynamic RAM (DRAM)



Static RAM (SRAM)

The word static indicates that the memory retains its contents as long as power is being supplied. However, data is lost when the power gets down due to volatile nature.

SRAM uses more chips than DRAM for the same amount of storage space, thus making the manufacturing costs higher. So SRAM is used as cache memory and has very fast access.

Characteristic of the Static RAM

- i) It has long life
- ii) There is no need to refresh
- iii) Faster
- iv) Used as cache memory
- v) Large size
- vi) Expensive

- vii) High power consumption

Dynamic RAM (DRAM)

DRAM, unlike SRAM, must be continually refreshed in order to maintain the data. This is done by placing the memory on a refresh circuit that rewrites the data several hundred times per second. DRAM is used for most system memory because it is cheap and small. All DRAMs are made up of memory cells which are composed of one capacitor and one transistor.

Characteristics of the Dynamic RAM

- i) It has short data lifetime
- ii) Need to be refreshed continuously
- iii) Slower as compared to SRAM
- iv) Used as RAM
- v) Lesser in size
- vi) Less expensive
- vii) Less power consumption