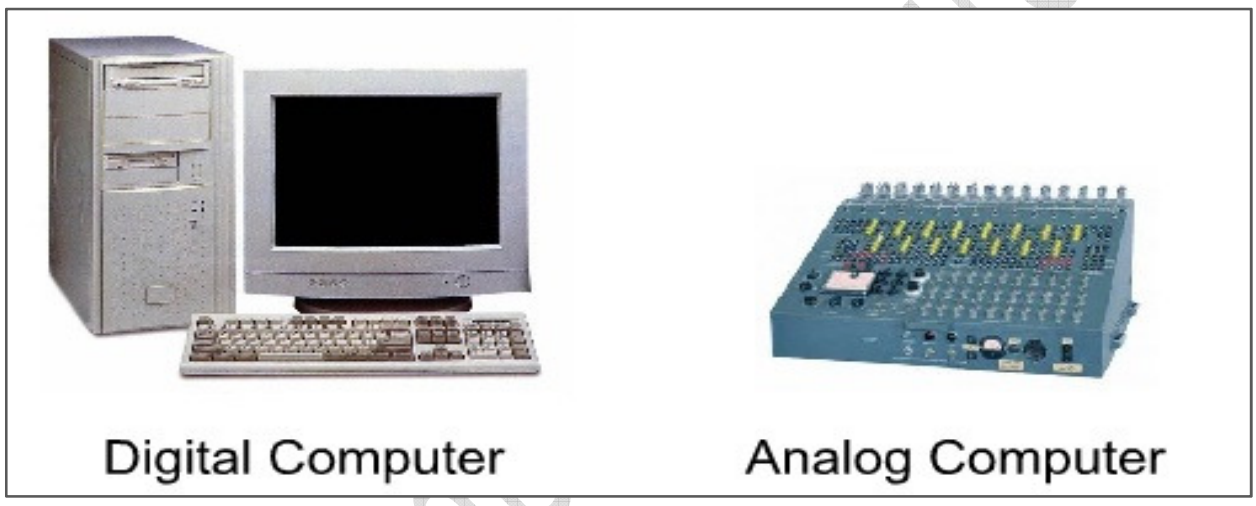
FUNDAMENTALS OF COMPUTER (DCA-101)

1. INTRODUCTION - (5 MARKS)

Computer - Computer is a device that transforms data into meaningful information. Data can be anything like marks obtained by you in various subjects. It can also be name, age, sex, weight, height, etc. of all the students in a class.

Analog Computers - Analogue computers are used in some specific applications, like the flight computer in aircraft, ships, submarines, refrigerator, and speedometer of your bike, etc.

Digital Computers – Digital computers use the binary number system, which has two digits i.e., 0 and 1. A binary digit is called a bit. Here the information is represented in the groups of bits. Some of the best examples of digital computers are your laptop, calculators, smart phones, etc.



Characteristics of Computers -

Speed - In general, no human being can compete to solving the complex computation, faster than computer.

Accuracy - Since Computer is programmed, so whatever input we give it gives result with accurately.

Storage - Computer can store mass storage of data with appropriate format.

Diligence - Computer can work for hours without any break and creating error.

Versatility - We can use computer to perform completely different type of work at the same time.

Power of remembering - It can remember data for us.

No IQ - Computer does not work without instruction.

No feeling - Computer does not have emotions, knowledge, experience, feeling.

The evolution of Computers - Charles Babbage is considered the father of modern digital programmable computer. He has invented first analytical computer in the year 1822.

Computer Generations -

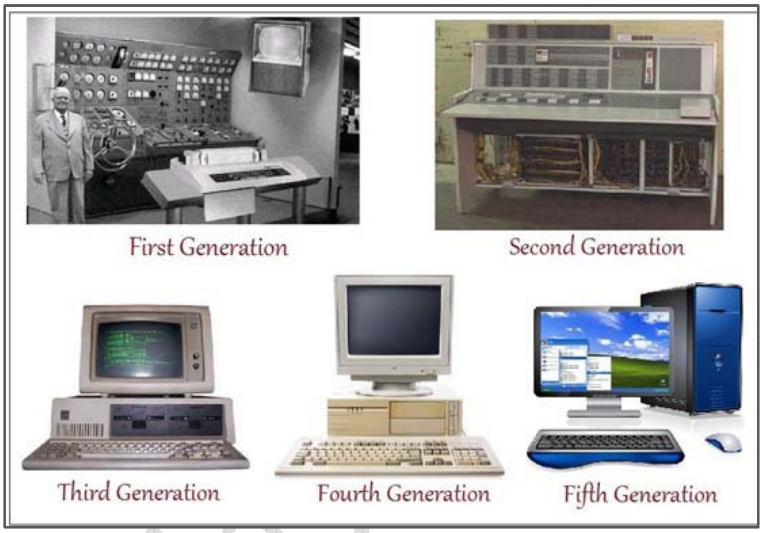
i) First Generation – Vacuum Tubes (1942 – 1955)

ii) Second Generation – Transistors (1955 – 1964)

iii) Third Generation – Integrated Circuits (1964 – 1975)

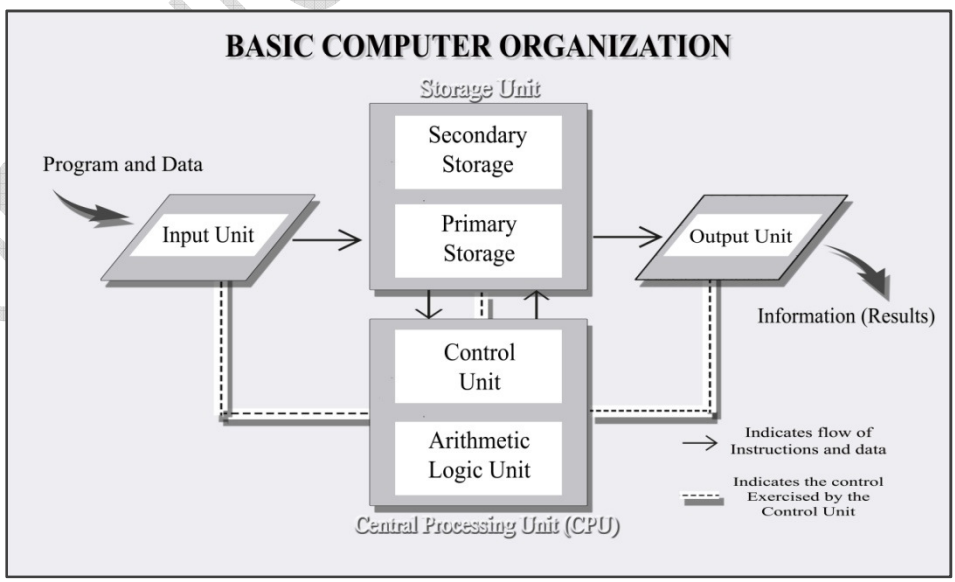
iv) Fourth Generation - microprocessor (1975 – 1989)

v) Fifth Generation (1989-present)



2) BASIC COMPUTER ORGANIZATION - (5 MARKS)

Computer has five functional independent units like Input Unit, Memory Unit, Arithmetic & Logic Unit, Output Unit, and Control Unit.



Input Unit - - The data entry station or devices are termed as input units. Example - keyboard, mouse, scanner, joystick, joypad, graphics table, MICR etc.

Control Unit (CU) - It tells the computer's memory, arithmetic and logic unit and input and output devices how to respond to the instructions that have been sent to the processor.

Arithmetic Logic Unit (ALU) - is a major component of the central processing unit of a computer system. The major operations performed by the ALU are addition, subtraction, multiplication, division, logic and comparison.

Memory Unit - A bit is a binary digit, the smallest increment of data on a computer. A bit can hold only one of two values - 0 or 1, corresponding to the electrical values of off or on, respectively. Bits are

usually assembled into a group of eight to form a byte. A byte contains enough information to store a single ASCII character, like "h".

Computer storage and memory measurement unit	
1 bit	0 or 1
8 bits	1 bytes
1024 byte	1 KB
1024 KBs	1 MB
1024 MBs	1 GB
1024 GBs	1 TB
KB = Kilobyte, MB = Megabyte, GB = Gigabyte, TB = Terrabyte	

Output Unit - The output unit would be composed of the devices that provide information back to the computer users. Examples are the Computer monitor and the computer printer.

3) PROCESSOR AND MEMORY - (5 MARKS)

A central processing unit (CPU) is the brain of a computer system and also called **a central processor or main processor**.

Parts of CPU -

Arithmetic Logic Unit (**ALU**) - It is the part of computer processor (CPU) can be used to perform arithmetic and logic operations. An arithmetic-logic unit (ALU) is further divided into two parts, (AU) arithmetic unit and a logic unit (LU).

Control Unit **(CU)** - is a component of a computer's CPU that directs the operation of the processor. It tells the computer's memory, arithmetic and logic unit and input and output devices how to respond to the instructions that have been sent to the processor.

Registers - When the CPU runs a computer program, it needs somewhere to store the data that the instructions operate on (the data that they read and write). This storage is called a register. A CPU usually has many registers. The register is the fastest memory. They are part of the CPU chip itself.

Instruction Sets - The CPU is an electronic machine that works on a list of computer things to do, called instructions. It reads the list of instructions and runs (executes) each one in order. A list of instructions that a CPU can run is a computer program. The instruction set provides commands to the processor, to tell it what it needs to do.

Processor speed is the number of *cycles per second* at which the central processing unit of a computer operates and is able to process information. Processor speed is measured in hertz (Hz). A modern processor often run so fast that gigahertz (GHz) is used instead. *One GHz is one billion cycles per second*.

Type of Processor -

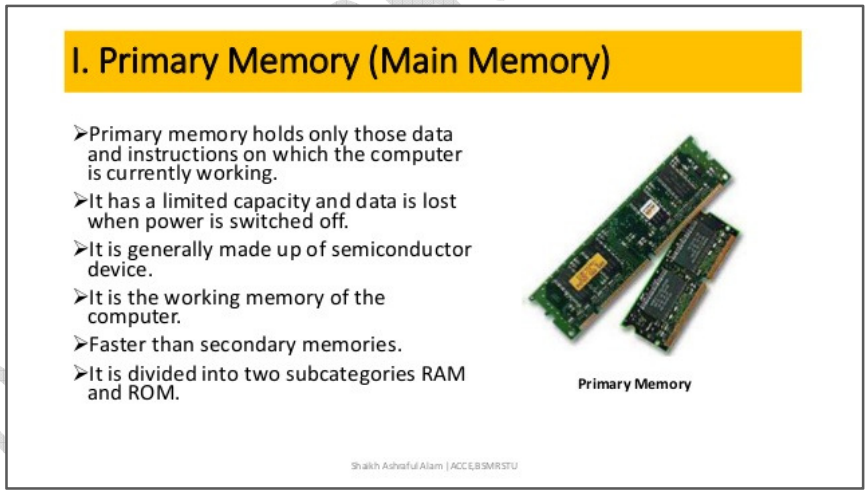
There are two primary manufacturers of computer microprocessors. Intel and Advanced Micro Devices (AMD) lead the market in terms of speed and quality. Intel's desktop CPUs include Celeron, Pentium and Core.

AMD's desktop processors include Sempron, Athlon and Phenom. Intel makes Celeron M, Pentium M and Core mobile processors for notebooks.

Main Memory - The main memory in a computer is called Random Access Memory. It is also known as RAM. RAM is a volatile memory and loses all its data when the power is switched off. Main memory is available in two types - Dynamic Random Access Memory (DRAM) and Static Random Access Memory (SRAM).

Storage Evaluation Criteria - Storage systems are the devices—such as hard disks, optical disks and magnetic disks—used for data storage. Any storage unit of computer system is characterized by storage capacity, access time, cost per bit of storage, volatile and random access.

Main Memory Organization - Main memory of a computer system consists of several small storage areas called location or cells. Each of these locations can store a fixed number of bits called *word length* of the memory. Each word or location has a built-in and unique number assigned to it. This number is called *address* of the location. Each location can hold either a data item or an instruction. The first address normally stars at o.



Main Memory Capacity - The memory capacity of a device is commonly expressed in bytes, kilobytes, megabytes, gigabytes or terabytes. The memory capacity of a device depends on many factors such as the number of available address registers in the CPU. In the case of 32-bit CPUs, they can only address a memory capacity of up to 4 GB. As for a 64-bit computer, the memory capacity is unlimited.

Types of Memory Chips -

RAM chips are of two types – dynamic and static. The main memory of most computers uses dynamic RAM.

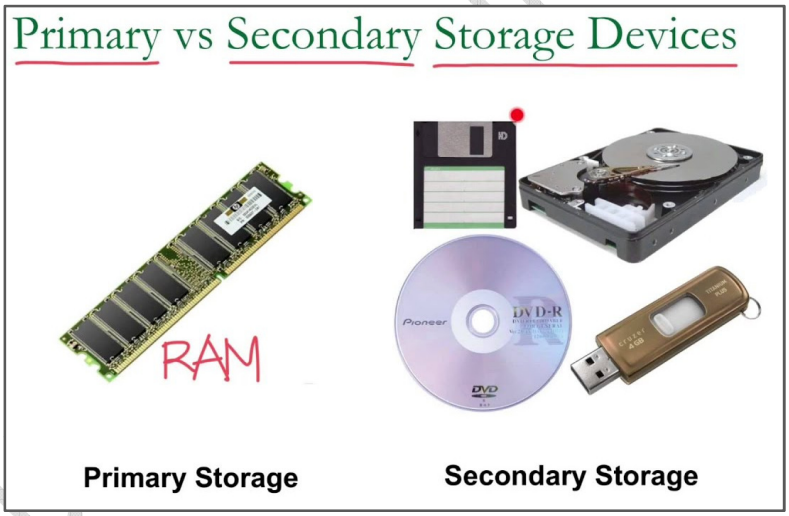
ROM - A special type of RAM, called read-only memory (ROM), is a non-volatile memory chip in which data is stored permanently. We can

only read and use data stored in a ROM chip. We cannot change them. ROMs are also known as *field stores, permanent stores, or dead stores*.

Cache Memory - Cache Memory is a special very high-speed memory. Cache memory is an extremely fast memory type that acts as a buffer between RAM and the CPU.

HIT/MISS: When the CPU refers to memory and finds the word in cache, it is said to produce a hit. Otherwise, it is a miss. The performance of cache memory is frequently measured in terms of a quantity called hit ratio. **Hit ratio = hit / (hit+miss).**

4) SECONDARY STORAGE DEVICES - (5 MARKS)

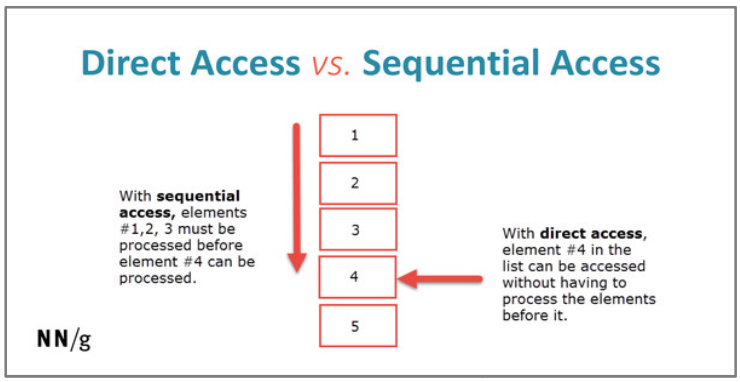


There are two main categories of storage devices. **Primary storage, such as RAM**, is used by computer systems to temporarily store and retrieve data. **Secondary storage devices,** such as **hard drives stores data permanently.**

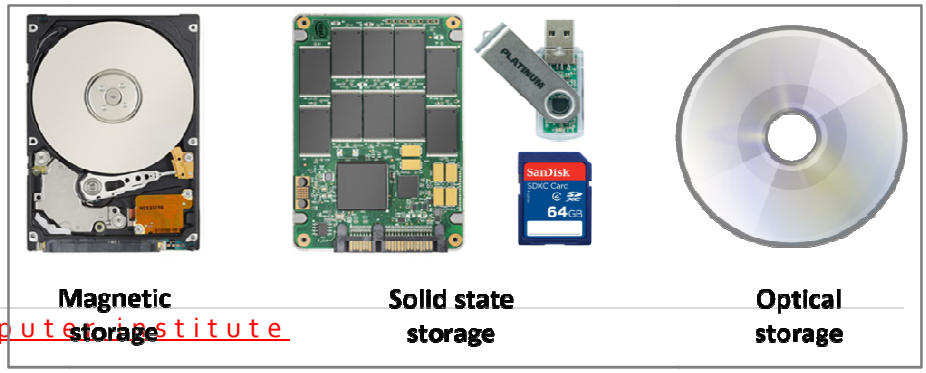
Generally, memory/storage is classified into 2 categories - **Volatile Memory** - This loses its data, when power is switched off. **Non-Volatile Memory** - This is a permanent storage and does not lose any data when power is switched off.

Direct access speaks to the ability to access something (often memory) using a specific address. Eg. RAM.

Sequential access implies that there is a "stream" of items, and there is no address available for accessing a specific, individual item. E.g., Magnetic Tape.



Magnetic tape - is a long and narrow strip of plastic that thin magnetic material is coated on. A tape consists of vertical columns called *frames*, and horizontal rows



called *channels or tracks*.

A magnetic disk - is a storage device that uses a magnetization process to write, rewrite and access data. It is covered with a magnetic coating and stores data in the form of tracks, spots and sectors. Hard disks, zip disks and floppy disks are common examples of magnetic disks.

An optical disk - is a computer storage disk that stores data digitally and uses laser beams (transmitted from a laser head mounted on an optical disk drive) to read and write data. Eg., Compact disks (CD), digital versatile/video disks (DVD) and Blu-ray disks.

Data backup - is the process of creating a copy of some data from an on-line storage device to a secondary storage backup device such as, magnetic tape, zip disk, disk pack, or WORM disk.

Online data storage - *provides very rapid access to data on a constant basis. It stores all frequently used data. Computer systems often use hard disk or disk array as an on-line storage device.*

Offline storage - *An off-line storage is not under direct control of any computer. User can physically remove or disconnects it for storing away from the computer. Hence, it is also known disconnected storage.*

Near-line storage *- is an intermediate storage between on-line storage and off-line storage. It means nearly on-line. They often use mass storage devices such as tape library, CD jukebox, etc. as a near-line storage device.*

Flash Drive (Pen drive) - Flash drive is a compact device of the size of a pen. It enables easy transport of data from one computer to another. A user simply plugs it into a USB (Universal Serial Bus) port of a computer. Available storage capacities are 256MB, 512MB, 1GB, 2GB, 4GB, 8GB, 16GB, 32GB and 64GB.

Memory card - is flash memory based cards which is available as removable storage device. The most popular ones are Secure Digital (SD) and Multimedia Card (MMC). Storage capacity of these cards range from 8MB to 32GB.

Hierarchical storage system (HSS) *- Different types of storages have different capacity, speed of access, and cost per bit stored. Since a single type of storage is not superior in all aspect, most computer systems build their storage solutions by making use of a hierarchy of storage technologies. Such a storage solution system is called Hierarchical Storage System (HSS).*

Flash memory is a non-volatile memory chip used for storage and for transferring data between a personal computer (PC) and digital devices. It has the ability to be electronically reprogrammed and erased. It is often found in USB flash drives, MP3 players, digital cameras and solid-state drives.

5) INPUT-OUTPUT DEVICES - (4 MARKS)

Input and output (I/O) devices allow the computer system to interact with the outside world by moving data into and out of the system. They are also known as *peripheral devices* because they surround a computer's CPU and memory.

An input device is used to bring data into the system. Some input devices are - Keyboard, Mouse, Microphone, Bar code reader, Graphics tablet.

A computer keyboard is a typewriter-style device which is composed of buttons that create letters, numbers, and symbols, as well as perform other functions. The most popular keyboard used today is the 101-keys *QWERTY keyboard*.

Point & Draw Devices is a hardware input device that allows the user to move the mouse pointer. Good examples of pointing devices are a computer mouse, trackball, light pens and touch screen. Mouse is the most popular point and draw device.

Data scanning device is an electronic device that scans printed or handwritten text documents, images, or certain objects, and converts them into a digital file format. Eg., flatbed scanners and handheld scanners.

Optical Character Recognition (OCR) device scanner first creates the bitmap image of the document and then the OCR software translates the array of grid points into ASCII text that the computer can interpret as letters, numbers, and special characters.

Optical Mark Reader (OMR) is a scanner, which can recognize a pre-specified type of mark made by pencil or pen. For example, in objective type tests, the answer sheets are fed to an OMR device for grading with a computer automatically.

Bar-code reader is a device for reading (de-coding) bar-coded data. Data coded in the form of small lines are known as bar codes. All types of goods, books, postal packages, badges, tags, etc. use bar codes for unique identification purpose.

Magnetic-Ink Character Recognition (MICR) is similar to OCR. Banking industry uses it for faster cheque processing.

A digitizer is an input device used for converting (digitizing) pictures, maps, and drawings into digital form for input to computers. Architects and engineers commonly use digitizers in the area of Computer Aided Design (CAD) for designing cars, building, medical devices, robots, mechanical parts, etc.

Electronic card readers are electronic devices that can read plastic cards embedded with either a barcode, magnetic strip, computer chip or another storage medium. Eg. ATM (automatic teller machines) is also debit/credit card reader device.

Speech recognition devices are input devices that allow a person to input data to a computer system by speaking to it.

AN OUTPUT DEVICE - Output devices generate computer outputs that are broadly of following two types - **Soft-copy output and hard-copy output**.

Some output devices are - -

Monitors are the most popular soft-copy output devices used today. A monitor is associated usually with a keyboard and together they form a *video display terminal* (VDT). A VDT (often referred to as just *terminal*) is both an input and output device. Two basic types of monitors are *cathode-ray-tube* (CRT) and LCD (*Liquid Crystal display*) *flat-panel*.

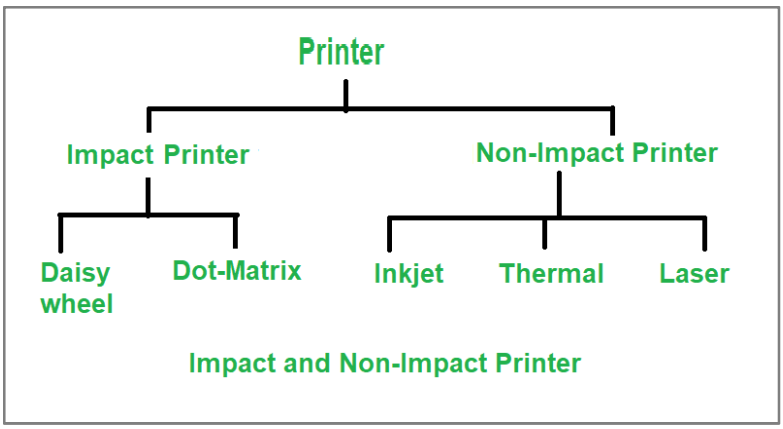
Printers are the most popular hard-copy output devices used today. Different types of printers are described below.

Dot-Matrix Printers are character printers that print one character at a time. Dot-matrix printers are *impact printers* because they print by hammering pins on an inked ribbon to leave ink impressions on a paper. The printing speeds 30 to 600 characters per second.

Inkjet Printers are character printers that form characters and images by spraying small drops of ink on a paper. The print head can contains upto 64 tiny nozzles. It has printing speeds ranging 40 to 300 characters per second. Inkjet printers are non impact printer and are both monochrome and color.

Drum printers are line printers that print an entire line at a time. Recall that dot matrix and inkjet printers print one character at a time. Due to impact printing, drum printers are noisy in operation and printing speeds are in the range of 300 to 2000 lines per minute.

Chain/Band Printers are line printers that print one line at a time. The chain/band rotates at a high speed. Unlike the drum of a drum printer, we can change the chain of the chain printer easily. Chain printers are impact printers.



Laser Printers are page printers that print one page at a time. Main

components of a laser printner are a laser beam source, a multi-sided mirror, a photoconductive drum, and toner. The most common laser printers have resolution of 600 dpi (dots per inch) to 1200 dpi. Laser printers are non impact printers.

Plotters - A plotter is an ideal output device for architects, engineers, city planners, and others who need to generate high precision, hard-copy, graphic output of varying sizes. Two types of plotters in common use are drum plotter and flatbed plotter.

Screen Image Projector - is an output device, which is used to display information from a computer on a large screen so that a group of people can view it simultaneously. It has become common presentation equipment today.

Voice Response Systems enables a computer to talk to a user. It has an audio-response device that produces audio output. Voice response systems are of two types – voice reproduction system and speech synthesizer.

Voice reproduction system produces audio output by selecting an audio output from a set of pre-recorded audio responses. Eg., ATM machine audio help for guiding how to operate ATM system.

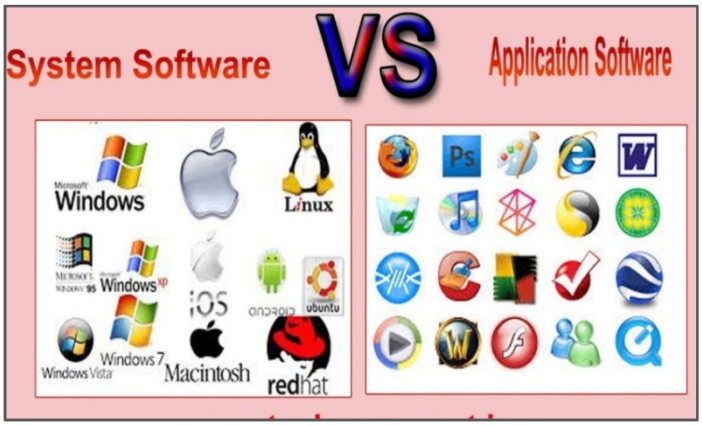
Speech Synthesizer converts text information into spoken sentences. To produce speech, it combines basic sound units called *phonemes*. This is very useful for reading out text information to blind persons.

6) COMPUTER SOFTWARE - (4 MARKS)

Relationship between Hardware and software - For a computer to produce useful output its hardware and software must work together. Nothing useful can be done with the hardware on its own, and software cannot be utilized without supporting hardware. Except for upgrades, hardware is normally a one-time expense, whereas software is a continuing expense.

Computer software, or simply software, is a collection of data or computer instructions that tell the computer how to work. In other word, the term software refers to a set of computer programs, procedures, and associated documents (flowcharts, manuals, etc.) describing the programs, and how they are to be used.

Based on the goal, computer software can be divided into -



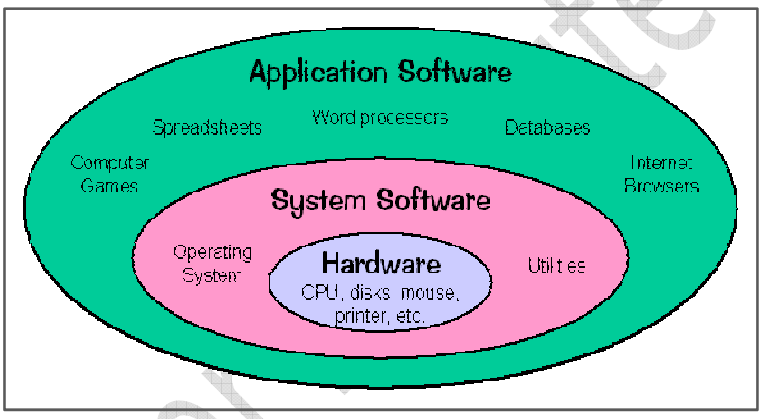
- **Application software** - is a set of one or more programs, which solves a specific problem, or does a specific task. Some commonly know application software are; Word processing software, Spreadsheet software, database software, graphics software, personal

assistance software, education software, entertainment software.

• **System software** is a set of one or more programs, which controls the operation and/or extends the processing capability of a computer system. Programs included in a system software package are called *system programs*, and programmers who prepare system software are referred to as *system programmers*.

Logical System Architecture - Hardware is at the centre; system software surrounds the hardware, application software layer then surrounds the system software. Finally, the users' layer consists of the user interfaces provided by the application software.

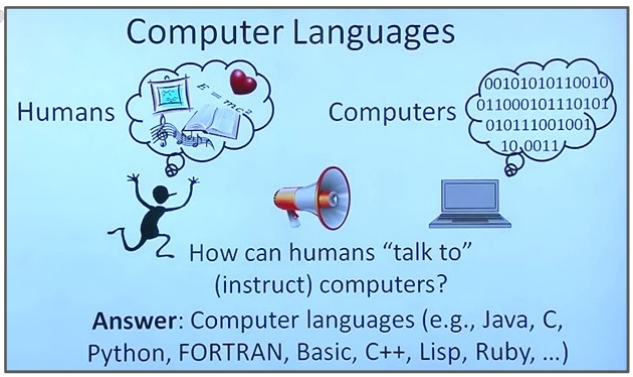
Firmware refers to a sequence of instruction (software) substituted for hardware. The software is stored in ROM chip of the computer, and is executed whenever the computer has to multiply two numbers.



Middleware - This software layer is known as middleware because it sits in the middle, between the operating system and applications. In general, middleware is a set of tools and data that helps applications use networked resources and services.

7) COMPUTER LANGUAGES - (4 MARKS)

There are two major types of programming languages. **These are Low Level Languages and High Level Languages.** Low Level languages are further divided into *Machine language and Assembly language*.



Machine Language is the language of the computer and is the only language that is directly understood by the computer. We also call it machine code and it is written as strings of 1's and 0's.

Assembly Language - It is the first step to improve the programming structure introduced in 1952. In this language, the machine codes comprising of 1's and 0's are substituted by symbolic codes (called mnemonic codes) to improve their understanding. Eg. START PRGRAM AT 1000.

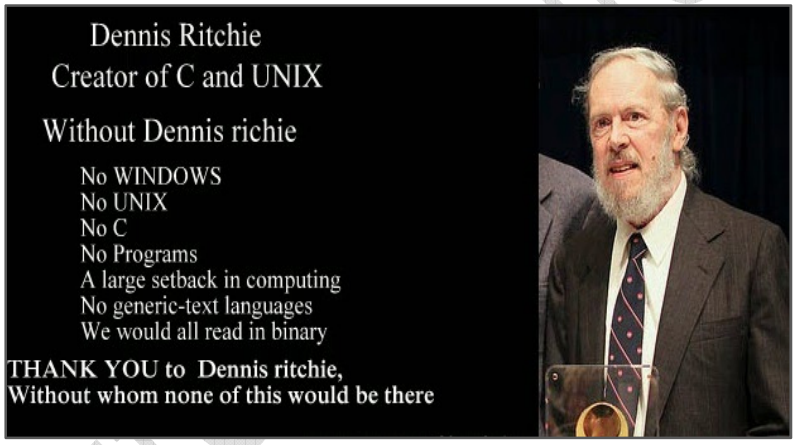
Assembler - The set of symbols and letters forms the assembly language and a translator program (called **Assembler**) is required to translate

the programs written in assembly language into machine language for execution by the computer. It is considered to be a second-generation language.

Machine and assembly languages are also called *low-level programming languages*.

High Level Languages - You know that assembly language and machine language require extensive knowledge of computer hardware. To overcome this limitation, a user writes the instructions in English like sentences to perform the logic of the problem irrespective of the type of computer you are using. The language used for this is referred to as high-level language.

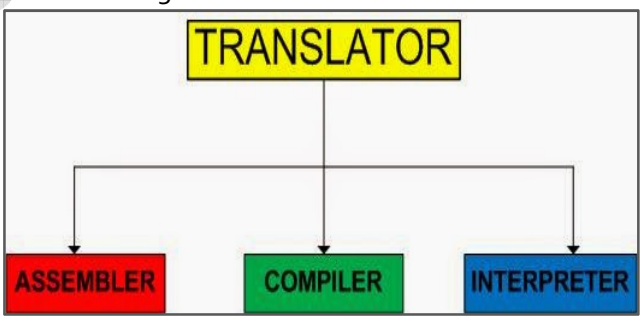
High-level languages are simple language that use English and mathematical symbols like +, -, %, /, etc. for its program construction. You should know that any higher-level language has to be converted to machine language for the computer to understand.



Compiler - It is a program that translates the instructions of higher-level languages to machine language. It is called compiler because it compiles every program instruction given in higher-level languages into machine language.

The program written by the programmer in higher-level language is called *source program*. After this program is converted to machine language by the compiler it is called *object program*. A compiler, however, cannot detect logic errors.

Interpreter - An interpreter is another type of program translator used for translating higher-level language instructions into machine language instructions. It takes one statement of higher-level language at a time, translates it into machine language and executes it immediately.



Some high-Level Languages (FORTRAN, COBOL, BASIC, PASCAL, C and C++), some more High-Level Languages (Java, C#, RPG, LISP, SNOBOL).

Subprogram – is a program written in a manner that a programmer can use it in other programs whenever needed without rewriting. We refer to a subprogram by different names in different programming languages. For example, other names used for it are subroutine, subprocedure, and function.

8) CLASSIFICATION OF COMPUTERS - (4 MARKS)

Notebook computer – They are also known as laptop.

Personal Computer – A pc is a non-portable, general purpose computer that fits on a normal size office table and is used by one person at a time.

Workstations – A workstation is a powerful desktop computer designed to meet computing needs of engineers, architects, and other professionals who need greater processing power, larger storage, and better graphics display facility than what normal PCs provide. Unlike PCs that run any OS, all workstations generally run UNIX operating system or its variant such AIX (IBM), Solaris (SUN) and HP-UX (HP).

Mainframe computers – Several organizations such as banks, insurance companies, hospitals, railways, etc., need on-line processing of large number of transactions, and require computer systems having massive data storage and processing capabilities. Two major vendors of mainframe systems are IBM and DEC.

Super computers - Supercomputers are used for intensive computation tasks in various fields, including quantum mechanics, weather forecasting, climate research, oil and gas exploration, and Film and TV Industries etc. We measure speed of modern supercomputers in teraflops and petaflops.

Client and Server computers- Servers are nothing but dedicated computers which are set-up to offer some services to the clients. Eg., *File server* – It provides a central storage facility to store files of several users on a network. *Database server* – It manages a centralized database, and enables several users on a network to have a=shared access to same database. *Print server* – It manages one or more printers, and accepts and processes print requests from any user in a network. *Name server* – It translates names into network addresses enabling different computers on a network to communicate with each other.

Handheld Computers – A handheld computer is a device whose size, weight, and design are such that a user can use it comfortably by holding it in hand. It is also known as palmtop because it can be kept on palm and operated. E.g., Tablet PC, PDA/Pocket PC, smartphone etc.

9) INFORMATION TECHNOLOGY AND SOCIETY - (4 MARKS)

The Information Technology Act, 2000 (also known as ITA-2000, or the IT Act) is an Act of the Indian Parliament (No 21 of 2000) notified on 17 October 2000. It is the primary law in India dealing with cybercrime and electronic commerce.

The bill was passed in the budget session of 2000 and signed by President K. R. Narayanan on 9 May 2000. The original Act contained 94 sections, divided into 13 chapters and 4 schedules. The laws apply to the whole of India. If a crime involves a computer or network located in India, persons of other nationalities can also be indicted under the law.

Information Kiosk - An Information Kiosk Machine provides multi-features to the user and the features are - Kiosk Machine gives an accurate and precise detail about the product and services in a descriptive manner. It is mainly targeted to implement this machine where there is a large number of a crowd such as Shopping mall, Airport, Metros, Railway Station etc.

10) PRACTICALS - (4O MARKS)

a) Basic Components of a Computer System - (*Zirtirtu kaihhruaina hnuaiah Computer part zir ho tur)*

b) Scanning - (*Zirtirtu kaihhruaina hnuaiah practice tur*)

c) Printing - (*Zirtirtu kaihhruaina hnuaiah practice tur*)

DCA -101 : Fundamental Of Computer (Abbreviation)

ASCII	-	American Standard Code for Information Interchange
ARPANET	-	Advanced Research Projects Agency Network
ATA	-	Advanced Technology Attachment
ALU	-	Arithmetic Logic Unit
ANSI	-	American National Standards Institute
Bits	-	Binary Digits
BIOS	-	Basic Input Output System
bin	-	binary
BAL	-	Basic Assembly Language
BASIC	-	Beginner's All-purpose Symbolic Instruction Code
BIOS	-	Basic Input Output System
bps	-	bits per second
BCD	-	Binary Coded Decimal
Blog	-	Web Log
BMP	-	Basic Multilingual Plane
COBOL	-	Common Business Oriented Language
CAD	-	Computer-Aided Design
CASE	-	Computer-Aided Software Engineering
CPU	-	Central Processing Unit
CRT	-	Cathode Ray Tube
CRS	-	Computer Reservations System
CLI	-	Command Line Interface
CDMA	-	Code Division Multiple Access
CMOS	-	Complementary Metal-Oxide Semiconductor
CD-R	-	CD-Recordable
CD-ROM	-	CD Read-Only Memory
CD-RW	-	CD-Rewritable
CGI	-	Common Gateway Interface /Computer-Generated Imagery
DAO	-	Data Access Objects
DHTML	-	Dynamic Hypertext Markup Language
DVD	-	Digital Video Disc
DVD-R	-	DVD-Recordable
DVD-ROM	-	DVD-Read Only Memory
DVD-RW	-	DVD-Rewritable
DOS	-	Disk Operating System
DDR	-	Double Data Rate
DNS	-	Domain Name System

EEPROM	-	Electronically Erasable Programmable Read-Only Memory
EBCDIC	-	Extended Binary Coded Decimal Interchange Code
EPROM	-	Erasable Programmable Read-Only Memory
FAT	-	File Allocation Table
FAQ	-	Frequently Asked Questions
FDMA	-	Frequency-Division Multiple Access.
FS	-	File System
FDD	-	Floppy Disk Drive
FTP	-	File Transfer Protocol
FORTRAN	-	Formula Translation
Gb	-	Gigabit / GB—Gigabyte
GIF	-	Graphics Interchange Format
GPL	-	General Public License
GPRS	-	General Packet Radio Service
HDD	-	Hard Disk Drive
HT	-	Hyper Threading
HTML	-	Hypertext Markup Language
HTTP	-	Hypertext Transfer Protocol
Hz	-	Hertz
IBM	-	International Business Machines.
IC	-	Integrated Circuit
IDE	-	Integrated Development Environment /Integrated Drive Electronics
IE	-	Internet Explorer
IIS	-	Internet Information Services
IM	-	Instant Messaging
IMAP	-	Internet Message Access Protocol
I/O	-	Input /Output
IC	-	Integrated Circuit
IP	-	Internet Protocol
IPR	-	Intellectual Property Rights
ISDN	-	Integrated Services Digital Network
ISP	-	Internet Service Provider
JPEG	-	Joint Photographic Experts Group
JS	-	JavaScript
KB / Kb	-	Kilobyte / Kilobit
kHz	-	Kilohertz
KVM	-	Keyboard, Video, Mouse
LCD	-	Liquid Crystal Display
LED	-	Light Emitting Diode
MAN	-	Metropolitan Area Network
Mb / MB	-	Megabit / Master Boot Record
MHz	-	Megahertz
MPEG	-	Motion Pictures Experts Group
NVRAM	-	Non-Volatile Random Access Memory
OOP	-	Object-Oriented Programming
OS	-	Open Source /Operating System
OCR	-	Optical Character Recognition
P2P	-	Peer-To-Peer
PAN	-	Personal Area Network
PATA	-	Parallel ATA
PC	-	Personal Computer

PCB	-	Printed Circuit Board
PC-DOS	-	Personal Computer Disk Operating System
PCI	-	Peripheral Component Interconnect
PCIe	-	PCI Express
PERL	-	Practical Extraction and Reporting Language
PHP	-	Hypertext Preprocessor
POST	-	Power-On Self Test
PPI / DPI	-	Pixels Per Inch / Dot Per Inch
PROM	-	Programmable Read-only Memory
PS/2	-	Personal System/2
PSU	-	Power Supply Unit
RAM	-	Random Access Memory
RAID	-	Redundant Array of Inexpensive Disks
RAIT	-	Redundant Array of Inexpensive Tapes
RF	-	Radio Frequency
RGB	-	Red, Green, Blue (RGBA—Red, Green, Blue, Alpha)
RIP	-	Raster Image Processor /Routing Information Protocol
ROM	-	Read Only Memory
ROM-DOS	-	Read Only Memory - Disk Operating System
SATA	-	Serial Advanced Technology Attachment
SDRAM	-	Synchronous Dynamic Random Access Memory
SVG	-	Scalable Vector Graphics
SVGA	-	Super Video Graphics Array
TB	-	Tera Byte
TCP/IP	-	Transmission Control Protocol/Internet Protocol
TDMA	-	Time Division Multiple Access
tmp	-	temporary
TTF	-	TrueType Font
TTL	-	Transistor-Transistor Logic
UPS	-	Uninterruptible Power Supply
URI	-	Uniform Resource Identifier
URL	-	Uniform Resource Locator
USB	-	Universal Serial Bus
UTF	-	Unicode Transformation Format
UTP	-	Unshielded Twisted Pair
VPN	-	Virtual Private Network
VPU	-	Visual Processing Unit
WAN	-	Wide Area Network
WAP	-	Wireless Access Point / Wireless Application Protocol
Wi-Fi	-	Wireless Fidelity
WLAN	-	Wireless Local Area Network
WMA / WMV	-	Windows Media Audio / Windows Media Video
WPAN	-	Wireless Personal Area Network
XML	-	eXtensible Markup Language
Y2K	-	Year Two Thousand

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