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History

The word Computer in earlier times meant a person who performed calculations or computations. With years its definition changed to a machine that performs calculations. It can perform all type of mathematical and logical

operations; it can accept data, store data, retrieve data, process data and produce output.

Charles Babbage was known as father of computer. He invented two machines in 1822 introduced **Difference Engine** and in 1834, introduced **Analytical engine**

Difference Engine	Charles Babbage	First automatic mechanical calculator
Analytical Engine	Charles Babbage	Mechanical general-purpose computer
Z1	Konrad Zuse	World's first freely programmable computer
MARK-1	Konrad Zuse	First Freely programmable Computer
ENIAC	John W. Mauchly and J. Presper Eckert	First general purpose programmable electronic computer
EDSAC	John von Neumann	First computer to store program
EDVAC	John W. Mauchly and J. Presper Eckert	Binary serial computer
UNIVAC	John W. Mauchly and J. Presper Eckert	First general-purpose computer for commercial use
Intel 4004	Intel	First commercially available microprocessor by Intel, a 4-bit CPU
LISA (Local Integrated Software Architecture)	Apple Inc.	First commercial personal computers to have a GUI
Dataphone	AT&T	First AT&T Commercial modem



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ARPANET	United States Department of Defence	Early packet switching network and the first network to implement the protocol suite TCP/IP.
NEXUS Browser (WorldWideWeb)	Tim Berners-Lee	First Web Browser was WorldWideWeb later named Nexus. The first commonly available web browser with a graphical user interface was Erwise . First social networking/ social media site
SixDegrees		

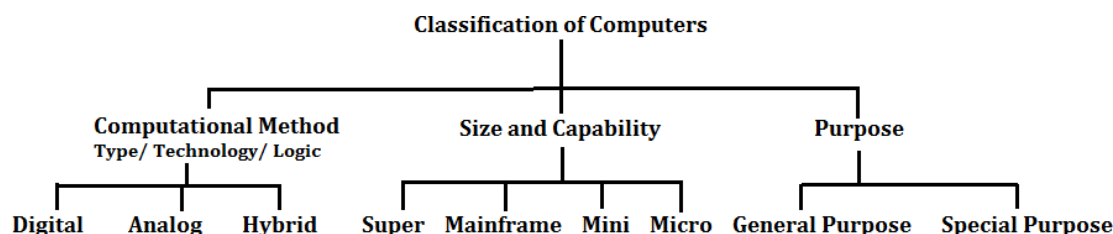
ENIAC was the first digital computer and it was invented by J.Presper Eckert and John Mauchly at the University of Pennsylvania and began construction in 1943. It uses 18000 vacuum tubes as a storing device. They were also founders of the first computer company, it was initially named Electronic Controls Company which was later changed to **Eckert**–

Mauchly Computer Corporation, and released a series of mainframe electronic digital stored-program computer under the name of **UNIVAC**. MIT introduces the **whirlwind** machine (first computer with RAM) on March 8, 1955.

Generation of Computer

Subject	1 st generation	2 nd generation	3 rd generation	4 th generation	5 th generation
Period	1940-1956	1956-1963	1964-1971	1971-present	present & beyond
Circuitry	Vacuum tube	Transistor	Integrated chips (IC)	Microprocessor (VLSI)	ULSI (Ultra Large Scale Integration) technology
Memory Capacity	20 KB	128KB	1MB	Semiconductor type and very high	VLSI and ULSI
Processing Speed	300 IPS inst. Per sec.	300 IPS	1MIPS(1 million inst. Per sec.)	Faster than 3 rd generation	Very fast
Programming Language	Assembly Language	High level language (FORTRAN, COBOL, ALGOL)	C,C++	C,C++,Java	All the Higher level languages, Neural networks,
Example of computers	UNIVAC, EDVAC	IBM 1401, IBM 7094, CDC 3600,D UNIVAC 1108	IBM 360 series, 1900 series	Pentium series Multimedia, Stimulation	Artificial Intelligence, Robotics

Types of computer



Analog computer introduced by Lord Kelvin. Numerical data are represented by measurable physical variables such as electrical voltage. A thermometer is a simple analog computer.

Digital computer that accepts and process data in the form of numbers and all the character are converted into binary code.

Hybrid computer used the combined feature of analog and digital machine. you can see hybrid computer in geological departments.

Microcomputer these are small relatively inexpensive computer designed for personal and office use. It has lowest

storing and processing speed. These can be laptop or desktop.

Minicomputer powerful as compare to microcomputer it has higher memory provide faster operating speeds and large storage capacities than microcomputers. It can be used as a server and capable of supporting from 2 to 200 users.

Mainframe computer it has very high memory and processing speed and used as a server (can support thousands of users)

Super computer can be used for complex type of application i.e. specific research, weather forecasting, Weapon designing etc.

CDC 6600 was the first successful supercomputer.
Sunway TaihuLight of China is the fastest supercomputer in the world.
PARAM-8000 India's first Super Computer developed by C-DAC Pune in 1998.
Shasra T is considered as **India's fastest super computer**, manufactured by Indian Institute of Science.

Servers are dedicated computers that serve the needs or request of other programs or computer.
Workstations serve usually one user only.
Information appliances are computers specially designed to perform a specific "user-friendly" function—such as playing music, photography.
An embedded system is a computer system with a dedicated function within a larger system.

Hardware and I/O Devices

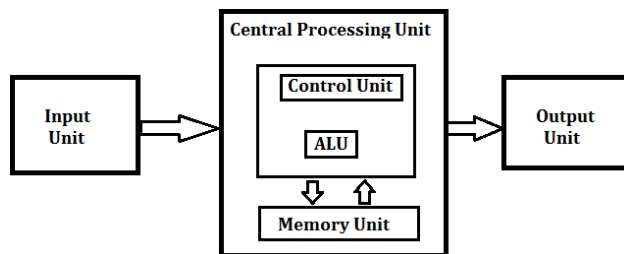
A computer is an electronic device that accepts data from the user (input), processes the data by performing calculations and operations on it and generates the desired Output.

An unprocessed collection or representation of raw facts represented in a manner suitable for communication, interpretation or processing by humans or by automatic means, is known as **Data**.

Personal computers use a number of chips mounted on a main circuit board called **Motherboard**. A motherboard is the physical arrangement in a computer that contains the computer's basic circuitry and components.

An **output device** is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form.

The CPU is fabricated as a single Integrated Circuit (IC) chip. It is also known as the **Microprocessor**. Multiprocessor Computers uses two or more central processing units (CPUs) within a single computer system. The term also refers to the ability of a system to support more than one processor and/or the ability to allocate tasks between them.



The **central processing unit (CPU)** is the brain of your computer. It handles all the instructions you give your computer. **The control unit (CU)** is a component of a computer's central processing unit (CPU) that directs operation of the processor. It tells the computer's memory, arithmetic/logic unit and input and output devices how to respond to a program's instructions.

An **arithmetic logic unit (ALU)** is a digital circuit used to perform arithmetic and logic operations. It represents the fundamental building block of the central processing unit (CPU) of a computer.

Instruction Execution: the program which is to be executed is a set of instruction which are stored in memory. The CPU executes the instructions of program to complete a task and this execution takes place inside the CPU with the help of

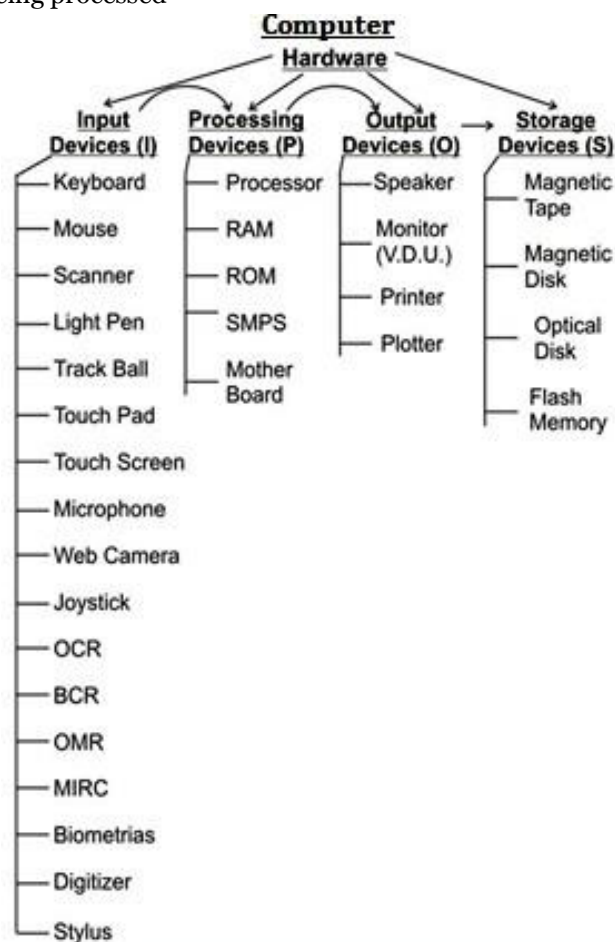
registers ALU (arithmetic logic unit) and CU (control unit). When the processor executes instructions, data is temporarily stored in small local memory location and these are called registers.

Accumulator Register:- which stores the immediate result of arithmetic and logical operations.

Memory address register (MAR) :- which contain the address of memory location to which data is to be stored.

Program counter :- which contain the address of the next instruction to process.

Instruction register:- which contain the current instruction being processed



The data that is fed into a computer processor, received into the computer by a keyboard or other sources is called **Input**. Examples of input devices include keyboards, mouse, scanners, digital cameras and joysticks.

A **keyboard** is a typewriter-style device, which uses an arrangement of buttons or keys, to act as mechanical levers

or electronic switches. Most of the commonly available personal computers have a keyboard, popularly known as Qwerty.

Function Keys	F1-F2
Toggle Keys	Caps Lock, Num Lock,
Modifier Keys	Shift, Alt, Ctrl, Fn
Alphanumeric Keys	A-Z, 0-9

'Caps lock' and 'Num lock' keys are called as **Toggle Keys** because when pressed, they change their status from one state to another.

Numeric Keypad is a keypad located on the right hand side of the keyboard. It consists of digits and mathematical operators.

A **Modifier key** is a special key (or combination) on a computer keyboard that temporarily modifies the normal action of another key when pressed together. By themselves, modifier keys usually do nothing; that is, pressing any of the Shift, Alt, or Ctrl keys alone does not (generally) trigger any action from the computer.

A **Mouse** is the most popular input device which is used today for interactive processing and for the one line entry of data for batch processing. The first computer mouse was invented by **Douglas Engelbart**.

Drag and Drop refers to the action of clicking and holding down the mouse button, while moving the mouse and then releasing the mouse button.

Joystick is the device that moves in all directions and controls the movement of a pointer.

A **Touch Screen** is a type of display screen device that is placed on the computer monitor to allow direct selection or activation of the computer when the user touches the screen. It acts as both input and output device.

Light Pen is the pen shaped device, which can sense light and is used to point at spots on a video screen.

A technology enables a high-speed reading of large quantities of data and transferring these data to the computer without using a keyboard. It is referred as **Optical Mark Reader (OMR)**. It uses a beam of light that is reflected on the paper with marks, to capture presence and absence of marks.

MICR reads the characters by examining their shapes in a matrix form and the information is then passed on to the computer. MICR stands for **Magnetic Ink Character Reader**. It provides a high level of security and is therefore used by the banking industry for faster processing of the cheque.

Bar Code is a machine readable code, which is represented by parallel vertical lines with varying widths. For reading these bar-coded data, a device is used, which is known as a Bar Code Reader (BCR)

Optical Character Recognition (OCR) is used to scan the document containing text. It is the mechanical or electronic conversion of scanned or photographed images of typewritten or printed text into machine-encoded/computer-readable text.

A **point of sale terminal (POS terminal)** is an electronic device used to process card payments at retail locations.

The device that prints information from the computer onto the paper is **Printer**.

The printed form of output is referred as **Hard Copy**. The form of output displayed on the screen is referred as **Soft Copy**.

Pages per Minute (PPM) is the unit used to count the speed of the printer.

On the basis of technology, printers are categorized into **Impact and Non- Impact Printers**.

Impact printers create an image by using some mechanism to physically press an inked ribbon against the page, causing the ink to be deposited on the page in the shape desired.

I) Dot matrix :- The dot-matrix printer uses print heads containing from 9 to 24 pins. These pins produce patterns of dots on the paper to form the individual characters

II) Daisy wheel:- A hammer strikes a "petal" containing a character against the ribbon, and the character prints on the paper. Its speed is slow typically 25-55 characters per second.

III) Line printer:- Line printers, or line-at-a-time printers, use special mechanism that can print a whole line at once; they can typically print the range of 1,200 to 6,000 lines per minute

IV) Drum printer:- A drum printer consists of a solid, cylindrical drum that has raised characters in bands on its surface. The number of print positions across the drum equals the number available on the page.

V) Chain printer:- A chain printer uses a chain of print characters wrapped around two pulleys

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VI) Band printer:- Band printer has a steel band divided into five sections of 48 characters each.

Non – Impact Printers do not touch the paper when creating an image.

I) Ink-jet printers:- One or more nozzles in the print head emit a steady stream of ink drops. Droplets of ink are electrically charged after leaving the nozzle. The droplets are then guided to the paper by electrically charged deflecting plates

II) Laser printers:- Laser printers use buffers that store an entire page at a time. When a whole page is loaded, it will be printed.

III) Thermal printer:- is a digital printing process which produces a printed image by selectively heating coated

thermo chromic paper, or thermal paper as it is commonly known, when the paper passes over the thermal print head.

A plotter is an output device that interprets commands from a computer to make line drawings on paper with one or more automated pens. Unlike a regular printer, the plotter can draw continuous point-to-point lines directly from vector graphics files or commands.

An uninterruptible power supply (UPS) is a device that allows a computer to keep running for at least a short time when the primary power source is lost.

A Monitor is a TV-like display attached to the computer on which the output can be displayed and viewed. It can either be a monochrome display or a color display. The number of pixels displayed on a screen is known as **Resolution**.

Software and Operating System

A set of instructions that tells the computer about the tasks to be performed and how these tasks are to be performed, is known as **Software**.

The set of instructions, which control the sequence of operations, are known as **Program**. It is a sequence of instructions, written to perform a specified task with a computer.

Operating system is a set of programs that help in controlling and managing the hardware and the software resources of a computer system. **Main functions of operating system are :-**

- Process management
- Memory management
- File management
- Security
- Command and interpretation
- Resource allocation

Types of OS.

1) Batch operating system : Here data and program that need to be processed are bundled and collected as a batch and executed together.

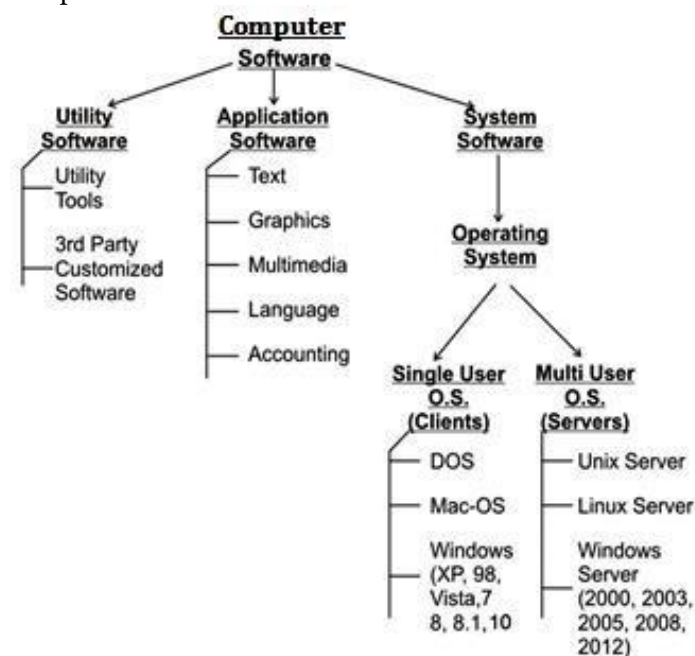
2) Multiprogramming operating system : It allows the instruction and data from two or more separate process to reside in primary simultaneously. Multiprogramming system are multitasking multiuser and multiprocessing operating system.

3) Single user : It is designed for single user and a single person use it at a time i.e. DOS window's 95 etc.

4) Distributed operating system : It is the one which manages a collection of independent computers and makes them appear to the user of the system as a single computer. **5) Real Time Operating System (RTOS) :** It is a computing environment that reacts to input within a specific time period. It is used at those Places in which we Requires higher and Timely Response.

6) Time Sharing System: A time sharing system allows the many users to simultaneously share the computer resources. Since each action or command in a time-shared system take a very small fraction of time, only a little CPU time is needed for each user.

7) Mobile OS: Windows 10 Mobile is the latest name for Microsoft's phone and tablet operating system. Google's latest's version of its android OS is **Nougat** and iOS i.e. iPhone Operating System's latest version is **iOS 10**.



Application software is a group of program designed for fulfill the demand of end user e.g. MS office, PowerPoint, Windows Media Player.

System software is a program which is created for the system and to make the system user friendly such as operating system or is a type of computer program that is designed to run a computer's hardware and application programs.

Utility software designed to help analyze, configure, optimize or maintain a computer such antivirus software.

Computer Languages

Low level language: these are coded in a form which is easy to understand by the processor.

Machine language: it is also a type of low level language these can be develop in binary language (0 and 1) .

Assembly language: it is also a type of low level language and using the human readable instruction of the CPU. It is written as 'MOVA.'

High level language programmer can write code in simple easy language, it is user friendly . E.g. C, JAVA

C language: it is a middle level programming language and also known as procedural language

C++ is high level language that uses the OOPS concept.

Fortran: it is known as formula translation. It is used for scientific application

COBOL (Common Business Oriented Language): used for record keeping and data management in business organizations.

BASIC (Beginner's All Purpose Symbolic Instruction Code): first language designed for non-professional programmers.

PASCAL: it is developed as a teaching tool for programming concepts.

Simula was the first object-oriented programming language. **Java, Python, C++, Visual Basic .NET and Ruby** are the most **popular Object Oriented Programming languages**. The Java programming language is designed especially for use in distributed applications on corporate networks and the Internet. Ruby is used in many Webapplications. **Curl, Smalltalk, Delphi and Eiffel** are also examples of object-oriented programming languages.

Language processor (Translator): Programmers write their program in one of the high level language because it is much easy to code in these language but computer does not understand any of these language so it is necessary to

convert program into a machine language so translator do this work.

Loader: It loads the code which is translated by translator into the main memory and makes it ready to execute.

Linker is used to combine all the object files and convert them into a final executable program.

Interpreter converts high level language program into machine language. It is very slow because it convert program line by line.

Compiler: It also translates the program from high level language to machine language. It is very fast because it converts the whole program into machine language.

Assembler: It is used for converting the code of low level language (assembly language) into machine level language.

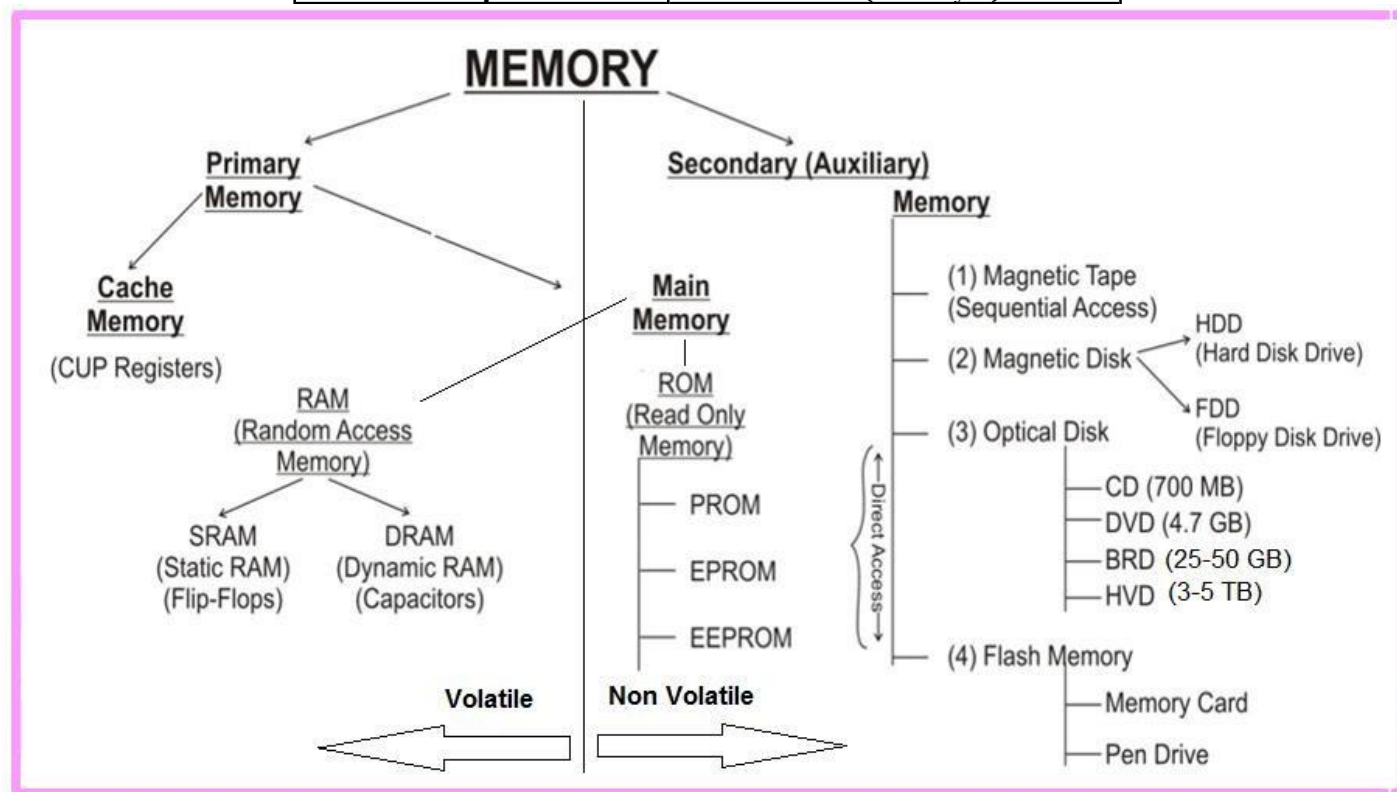


MEMORY MANAGEMENT

8 bit	1 byte
1024 Byte	1 KB (Kilo Byte)
1024 KB	1 MB (Mega Byte)
1024 MB	1 GB (Giga Byte)
1024 GB	1 TB (Tera Byte)
1024 TB	1 PB (Peta Byte)
1024 PB	1 EB (Exa Byte)
1024 XB	1 ZB (Zeta Byte)

1024 ZB

1 YB (Yota Byte)



A group of 4 bits is called a **nibble**. A byte is also known as an **Octet**.

Primary Storage (memory), also known as main storage and it is the area in a computer in which data is stored for quick access by the computer's processor. The terms random access memory (RAM) and memory are often as synonyms for primary or main storage. Primary storage is volatile and can be contrasted with non-volatile secondary storage, also known as auxiliary storage.

Cache memory is a smaller, faster memory which stores copies of the data from frequently used main memory locations. A CPU cache is a hardware cache used by the central processing unit (CPU) of a computer to reduce the average time to access data from the main memory.

Secondary memory is where programs and data are kept on a long-term basis. Common secondary storage devices are the hard disk and optical disks. The hard disk has enormous storage capacity compared to main memory. The hard disk is usually contained inside the case of a computer.

Read-only memory (ROM) is a storage medium used in computers and other electronic devices. Data stored in ROM can only be modified slowly or with difficulty, or not at all.

ROM is non-volatile and the contents are retained even after the power is switched off.

It only allows reading.

The types of ROM include PROM, EPROM and EEPROM.

PROM - (programmable read-only memory) is a memory chip on which data can be written only once.

The difference between a PROM and a ROM (read-only memory) is that a PROM is manufactured as blank memory, whereas a ROM is programmed during the manufacturing process. To write data onto a PROM chip, you need a special device called a PROM programmer or PROM burner.

EPROM - (erasable programmable read-only memory) is a special type of PROM that can be erased by exposing it to ultraviolet light.

EEPROM - (electrically erasable programmable read-only memory). EEPROM is a special type of PROM that can be erased by exposing it to an electrical charge.

Random Access Memory (RAM), allows the computer to store data for immediate manipulation and to keep track of what is currently being processed.

RAM is referred to as **volatile memory** and is lost when the power is turned off.

It also known as read/write memory as information can be read from and written onto it.

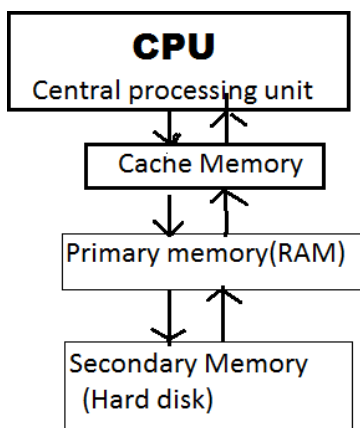
The two main types of RAM are **Static RAM** and **Dynamic RAM**.

SRAM retains data as long as power is provided to the memory chip and need not be refreshed periodically. It is often used as CPU Cache memory. SRAM stands for Static Random Access Memory.

The data on **DRAM** continues to move in and out of the memory as long as power is available and must be

continually refreshed to maintain the data. DRAM stands for Dynamic Random Access Memory.

Virtual memory is memory on the hard disk that the CPU uses as an extended RAM.



	Access Time	Storage Capacity	Cost per bit of storage
Primary memory	Faster	Smaller	High
Secondary memory	Slower	Higher	Low

Memory can also be categorized on the basis of their material:

Semiconductor memory:-such as RAM, ROM, EPROM, and flash memory.

Magnetic memory:-such as hard disk, floppy disk and magnetic tapes.

Optical memory:-such as computer disk, DVD and blue-ray disk.

A **bus**, in computing, is a set of physical connections (cables, printed circuits, etc.) which can be shared by multiple hardware components in order to communicate with one another.

The **address bus** (sometimes called the memory bus) transports memory addresses which the processor wants to access in order to read or write data. It is a unidirectional bus.

The **data bus** transfers instructions coming from or going to the processor. It is a bidirectional bus.

The **control bus** (or command bus) transports orders and synchronisation signals coming from the control unit and travelling to all other hardware components. It is a bidirectional bus, as it also transmits response signals from the hardware.

Number System

The **radix or base** is the number of unique digits, including zero, used to represent numbers in a positional numeral system. For example, for the decimal system the radix is ten, because it uses the ten digits from 0 through 9. And that of Binary is base 2.

Number System

Decimal, Binary, Octal and Hexadecimal Equivalents

Decimal	Binary	Octal	Hexadecimal
0	0000	000	0
1	0001	001	1
2	0010	002	2
3	0011	003	3
4	0100	004	4
5	0101	005	5
6	0110	006	6
7	0111	007	7
8	1000	010	8
9	1001	011	9
10	1010	012	A
11	1011	013	B
12	1100	014	C
13	1101	015	D
14	1110	016	E
15	1111	017	F

Hexadecimal to Binary: Refer the above table for the conversion process

$$(1A2)_{16} = (?)_2$$

$$1=0001, A=1010, 2=0010; \text{ Hence } (1A2)_{16} = (000110100010)_2$$

Decimal to Binary: $(75)_{10} = (?)_2$

Divide 75 by 2 (and write down its remainder).

$$\begin{array}{r|l}
 2 & 75 \\
 \hline
 2 & 37 \\
 2 & 18 \\
 2 & 9 \\
 2 & 4 \\
 2 & 2 \\
 2 & 1
 \end{array}$$

$$\text{Hence } (75)_{10} = (101011)_2$$

Any number system to decimal:

Sum of all (Digit \times (Base)^{Base's Place})

Example: $(1A2)_{16} = (?)_{10}$ (From the table you can refer A is equivalent to 10)

$$((1 \times 16^2) + (10 \times 16^1) + (2 \times 16^0)) = 256 + 160 + 2 = 418$$

Example: $(110110)_2 = (?)_{10}$

$$((1 \times 2^5) + (1 \times 2^4) + (0 \times 2^3) + (1 \times 2^2) + (1 \times 2^1) + (0 \times 2^0)) = 32 + 16 + 4 + 2 = 54; (110110)_2 = (54)_{10}$$

Octal to Binary: $(345)_8 = (?)_2$ (Write down 3 bit binary equivalents of all digits)

$$3=011, 4=100, 5=101; \text{ Hence } (345)_8 = (011100101)_2$$

Octal to Hexadecimal: Convert to Binary first and then group 4 bits to get hexadecimal number. Example: (345)₈

$$=?_{16} \Rightarrow (345)_8 = (011100101)_2 = 0000\ 1110\ 0101 = (0E5)_{16}$$

Computer Network

Different types of network are: LAN, MAN and WAN.

A **LAN (local area network)** is a group of computers and network devices connected together, usually within the same building. By definition, the connections must be high speed and relatively inexpensive (e.g., token ring or Ethernet).

A **MAN (metropolitan area network)** is a larger network that usually spans several buildings in the same city or town.

A **WAN (wide area network)**, in comparison to a MAN, is not restricted to a geographical location, although it might be confined within the bounds of a state or country. A WAN connects several LANs, and may be limited to an enterprise (a corporation or an organization) or accessible to the public. The technology is high speed and relatively expensive. The Internet is an example of a worldwide public WAN.

A **personal area network (PAN)** is a computer network used for data transmission amongst devices such as computers, telephones, tablets and personal digital assistants.

Campus Area Network or corporate area network is a computer network made up of an interconnection of local area networks (LANs) within a limited geographical area.

A **Storage Area Network (SAN)** is a specialized, high-speed network that provides block-level network access to storage.

A **virtual private network (VPN)** extends a private network across a public network, such as the Internet. It enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network.

Networking Devices

Modem: Modem stands for Modulator-Demodulator. It is used to connect computers for communication via telephone lines.

Hub: It works at the Physical layer. It just acts like a connector of several computers i.e. simply connects all the devices on its ports together. It broadcasts all the data packets arriving at it with no filtering capacity.

Switch: It works at the Data Link Layer. It is used for dividing a network into segments called subnets. It provides filtering of data packets and prevents network traffic also.

Repeater: It operates at the Physical Layer. It is used to amplify a signal that has lost its original strength so as to enable them to travel long distances.

Router: It works at the Network Layer and is used to connect different networks that have different architectures and protocols. It sends the data packets to desired destination by choosing the best path available thus reducing network traffic.

Gateway: It operates in all the layers of the network architecture. It can be used to connect two different networks having different architectures, environment and even models.

Bridge: They are used to connect two LANs with the same standard but using different types of cables. It provides an

intelligent connection by allowing only desired messages to cross the bridge thus improving performance. It uses physical addresses of the packets for this decision.

IPv4 - 32 bits numeric address

IPv6 - 128 bits hexadecimal address

IPv6 does not use broadcast messages and has three types of addresses, which are categorized as :

Unicast addresses. A packet is delivered to one interface.

Multicast addresses. A packet is delivered to multiple interfaces.

Anycast addresses. A packet is delivered to the nearest of multiple interfaces (in terms of routing distance).

With an IPv4 IP address, there are five classes of available IP ranges: Class A, Class B, Class C, Class D and Class E, while only A, B, and C are commonly used. Each class allows for a particular range of valid IP addresses. Class D is reserved for multicast groups and Class E is reserved for future use, or Research and Development Purposes.

Data Communication deals with the transmission of digital data from one device to another. Data is transferred through a pathway called as communication channel which can be physical wire connecting the devices or may be unguided media like laser, microwave etc.

A communication channel has a source or transmitter at one side and a designation or receiver at another side of the network. The source of data origination is single but there may be multiple receivers. A communication channel is of 3 types:

Simplex: This, communication is unidirectional i.e. one of the two devices can transmit the data and the other can only receive the data. For **e.g. Radio broadcasting, television broadcasting etc.**

Half duplex: This communication is bidirectional. Either of the devices can act as transmitter or receiver but only one device can transmit the data at one time. For **e.g. Walkie-Talkie.**

Full Duplex: Here the communication is in both directions and both the devices can simultaneously transmit the data. For **e.g. Telephone conversation.**

The **Open Systems Interconnection model (OSI)** is a conceptual model that characterizes and standardizes the internal functions of a communication system by partitioning it into abstraction layers. The model is a product of the Open Systems Interconnection project at the **International Organization for Standardization (ISO).**

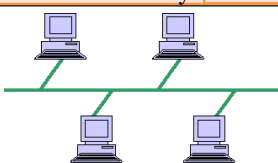
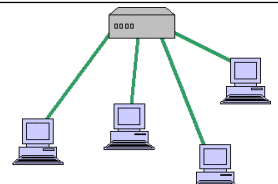
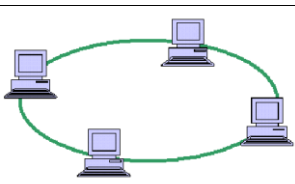
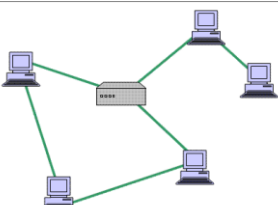
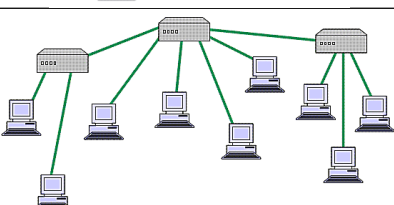
7	APPLICATION LAYER (Network Process to Application)	Data
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6	PRESENTATION LAYER (Data Representation & Encryption)	Data	Transmission)
5	SESSION LAYER (Inter-host Communication)	Data	
4	TRANSPORT LAYER (End-to-end connections & reliability)	Segments	
3	NETWORK LAYER (Path Determination and IP)	Packets	
2	DATA LINK LAYER (Physical Addressing)	Frames	
1	PHYSICAL LAYER (Media, Signal and Binary)	Bits	

Network topology is the arrangement of the various elements (links, nodes, etc.) of a computer network. There are two basic categories of network topologies:

≈ Physical topologies and Logical topologies.

Physical topology is the placement of the various components of a network, including device location and cable installation, while **Logical topology** illustrates how data flows within a network, regardless of its physical design. Various types of topologies are:

Bus Topology		Every computer and network device is connected to single cable.
Star Topology		All the computers are connected to a single hub through a cable. This hub is the central node and all others nodes are connected to the central node.
Ring Topology		Each computer is connected to another computer, with the last one connected to the first. Exactly two neighbors for each device.
Mesh Topology		It is a point-to-point connection to other nodes or devices. All the network nodes are connected to each other
Tree Topology		It has a root node and all other nodes are connected to it forming a hierarchy. It is also called hierarchical topology.

Hybrid topology uses a combination of any two or more topologies in such a way that the resulting network does not exhibit one of the standard topologies.

Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand.

Public clouds are owned and operated by companies that offer rapid access over a public network to affordable computing resources.

A **private cloud** is infrastructure operated solely for a single organization, whether managed internally or by a third party, and hosted either internally or externally.

A **hybrid cloud** uses a private cloud foundation combined with the strategic integration and use of public cloud services.

Google Drive is a personal cloud storage service from Google which gives every user 15 GB of Drive storage space. OneDrive is Microsoft's service for hosting files in the "cloud computing". OneDrive offers 5GB of storage space for free.

Internet

The **Internet** is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide.

It is a **network of networks** that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless, and optical networking technologies.

ARPANET adopted TCP/IP in 1983, and from there researchers began to assemble the "network of networks" that became the modern Internet.

The **World Wide Web** (abbreviated as WWW or W3, commonly known as the Web) is a system of interlinked hypertext documents that are accessed via the Internet.

A **Website** is a set of related web pages served from a single web domain.

A **Home page, index page, or main page** is a page on a website. A home page usually refers to:

- The initial or main web page of a website, sometimes called the "front page" (by analogy with newspapers).
- The first page that appears upon opening a web browser program, which is also sometimes called the start page. This 'start page' can be a website or it can be a page with various browser functions such as the visual display of websites that are often visited in the web browser.
- The web page or local file that automatically loads when a web browser starts or when the browser's "home" button is pressed; this is also called a "home page". The user can specify the URL of the page to be loaded, or alternatively choose e.g. to re-load the most recent web page browsed.
- A personal web page, for example at a web hosting service or a university web site that typically is stored in the home directory of the user.

A **Hyperlink** is a reference to data that the reader can directly follow either by clicking or by hovering or that is followed automatically

A **web browser** (commonly referred to as a browser) is a software application for retrieving, presenting and traversing information resources on the World Wide Web. Some of the famous browsers are **Safari, Chrome, Firefox, Bolt, UC Browser** and **Internet Explorer**

The **Uniform Resource Locator**, abbreviated as URL is a specific character string that constitutes a reference to a resource. In most web browsers, the URL of a web page is displayed on top inside an address bar.

(i) An example of a typical URL would be "http://www.bankersadda.com".

Here the **domain name** is 'bankersadda.com'

Downloading means to receive data to a local system from a remote system or to initiate such a data transfer

Uploading refers to the sending of data from a local system to a remote system such as a server or another client with

the intent that the remote system should store a copy of the data being transferred

An **Internet Protocol address** (also known as an **IP address**) is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network. It acts as an identifier for a computer. It is a unique address for every computer.

Domain names are used to identify one or more IP addresses.

The **universal resource locator**, or URL, is an entire set of directions, and it contains extremely detailed information. The domain name is one of the pieces inside of a URL.

Domain Types	
Type	Description
com	Commercial and for profit organization
edu	Educational provider, college, Universities
gov	Government agencies
Mil	US military sites
net	Internet infrastructure and service providers
org	Miscellaneous and Non-profit organisations

An **email attachment** is a computer file sent along with an email message. One or more files can be attached to any email message, and be sent along with it to the recipient.

Hotmail was co-founded by an Indian American entrepreneur Sabeer Bhatia along with Jack Smith in July of 1996

TEST SERIES

ENGLISH



FCI 2021

ASST. GENERAL MANAGER
(General Administration)

20 TOTAL TESTS

CC (Carbon Copy) in e – mail indicates those who are to receive a copy of a message addressed primarily to another.

The list of CC recipients is visible to all other recipients of the message.

An additional **BCC (blind carbon copy)** field is available for hidden notification; recipients listed in the BCC field receive a copy of the message, but are not shown on any other recipient's copy (including other BCC recipients)

The **Drafts folder** retains copies of messages that you have started but are not yet ready to send.

The first email was sent by **Ray Tomlinson** to himself in 1971.

Internet Explorer was deprecated in Windows 10, with **Microsoft Edge** replacing it as the default web browser.

Computer Security

A **Computer Virus** is a computer program or code that can replicate itself and spread from one computer system to another system. A computer virus has the capacity to corrupt or to delete data on your computer and it can utilize an e-mail program to spread the virus to other computer systems. In the worst case scenario, it can even delete everything on your hard disk. The purpose of it is to disrupt the operation of the computer or the program.

Some examples of Computer Virus are **Trojan viruses, Stealth viruses, worms, malware (malicious software), Disk Killer, Stone virus, Sunday, Cascade, Nuclear, Word Concept, etc.**

Malware, short for **malicious software**, is any software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems. It can appear in the form of executable code, scripts, active content, and other software.

Antivirus Software is used to scan the hard disk to remove the virus from them. Some of the famous anti – viruses available are Avast, Norton, Avira, Kaspersky, AVG, etc.

A person who uses his or her expertise to gain access to other people's computers to get information illegally or do damage is a **Hacker**.

Authorization is the function of specifying access rights to resources related to information security and computer security in general and to access control in particular. More formally, "to authorize" is to define an access policy.

Authentication is the act of confirming the truth of an attribute of a single piece of data or entity. It might involve confirming the identity of a person by validating their identity documents, verifying the validity of a website with a digital certificate, tracing the age of an artifact by carbon dating, or ensuring that a product is what its packaging and labeling claim to be. In other words, Authentication often involves verifying the validity of at least one form of identification.

Phishing is the attempt to acquire sensitive information such as usernames, passwords, and credit card details (and sometimes, indirectly, money) by masquerading as a trustworthy entity in an electronic communication.

A **Spoofing attack** is a situation in which one person or program successfully represents oneself as another by falsifying data and thereby gaining an illegitimate advantage.

Microsoft Office

Microsoft Office is an office suite of desktop applications, servers and services for the Microsoft Windows and Mac operating systems. It includes Microsoft Word, Excel, PowerPoint, Outlook, OneNote, Access and Publisher.

Note: Microsoft Windows Vista was an windows OS for PC not Office Suit.

Office 365 is a subscription service that includes the most recent version of Office, which currently is Office 2016. It comes with the applications you're familiar with, like Word, PowerPoint, and Excel, plus extra online storage, ongoing tech support.

Note- Microsoft Azure is a growing collection of integrated cloud services which developers and IT

professionals use to build, deploy and manage applications through our global network of data centres. It provides software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) and supports many different programming languages, tools and frameworks. Microsoft Azure was earlier known as Windows Azure.

SOME NEW FEATURES INTRODUCED IN OFFICE 2016 FOR WINDOWS OS

Share: In Word 2016 for Windows, it is easier than ever to share your documents. When you share your files by using OneDrive or SharePoint Online for Office 365, you can invite people to the document directly from within Word, or send a PDF or Word file as an email attachment. This feature of share is also available for Excel and PowerPoint 2016.

Tell Me: This is a text field where you can enter words and phrases about what you want to do next and quickly get to those features you want to use or actions you want to perform. You can also use Tell Me to find help about what you're looking for, or to use Smart Lookup to research or define the term you entered.

Smart Lookup: Bing search incorporated with applications

New Charts introduced in Excel 2016 : New Chart types and templates are introduced in Excel 2016 such as treemap, sunburst chart (also known as a ring chart), waterfall chart, box plot and histogram, and financial and calendar templates.

Skype and OneDrive Integration : One of the new features added to Word, Excel, and PowerPoint is the ability to use Skype for Business to collaborate and communicate while working on documents. User can IM or video-call someone with Skype from the new Share pane built into the new Office applications. OneDrive integration supports cloud storage file hosting service that supports access of office document from anywhere on any device.

Some other features:

New animations in PowerPoint (such as the Morph transition), the ability to insert online video in OneNote, and a data loss prevention feature in Word, Excel, and PowerPoint.

New recent-documents feature in Outlook 2016 shows you the documents you've recently worked on in the Office apps, so you don't have to hunt for them on your PC.

Enterprise Data Protection: To manage and prevent data loss at enterprise level, MS Office 2016 comes paced with inbuilt security feature that provide an ease for system admin to enforce policies for content authoring and document sharing.

SOME COMMANDS RELATED TO MS OFFICE

1. Save Vs Save As

"Save" simply saves your work by updating the last saved version of the file to match the current version you see on your screen.

"Save As" brings up a prompt to save your work as a file with a different name. For example, you might choose to save a document called "New Doc" as "Final Doc". This way, you can save you file at different stages and keep multiple versions on your hard drive.

2. Save or convert to PDF

You can use the Office programs to save or convert your files to PDFs so that you can share them or print them using commercial printers. To export or save as PDF, in your Office file, on the File menu, click Export or Save As.

3. Undo Vs Redo

You can undo, redo, or repeat many actions in Microsoft Word, PowerPoint, and Excel. Undo reverses the immediate action. Redo reverts the effects of the undo action.

4. Portrait Vs Landscape

The terms portrait and landscape refer to different orientations of the paper; whether it is oriented vertically or horizontally. A page with portrait orientation, typical for letters, memos, and other text documents, is taller than it is wide. Portrait is vertical mode and landscape is horizontal mode.

MS WORD 2016:

Backstage View in MS Word 2016: MS Word 2016 has a backstage view where you can see the recent documents that you've visited or edited and a few templates as well. There is also an option to search for more templates. These templates can help you get the desired layout where a sample data will already be there. You may edit and enter data as you may like.

MS Word 2016 Ribbons:

Quick Access Toolbar

By default, on top is the Quick access toolbar which has 3 default options available: Save, Undo Typing and Repeat Typing. After this there is a drop-down menu for customizing the quick access toolbar. This toolbar is totally customizable; you can position it below the tabs and commands or add more items to it.

To add or remove a command from the quick access toolbar: When you find a favorite command, right-click it, and then click Add to Quick Access Toolbar.

Remove a command by right-clicking it on the Quick Access Toolbar, and then clicking Remove from Quick Access Toolbar.

Tabs in Word 2016

The ribbon in Word and other Office Suite's Application has Tabs. In Word 2016 there are 9 tabs followed by a new feature of "Tell me what you want to do" arranged in a horizontal fashion. The tabs are as follows: File, Home, Insert, design, Layout, References, Mailing, Review, and View. The File tab opens the Info Window and has options arranged in a vertical array: Info, New, Open, Save, Save As, Print, Share, Export, Close, Account, Feedback and Options.

The ribbon containing Tabs also have a new feature of Share and Comment at the extreme right corner.

Note- Each tab has many commands which are grouped into specific categories. Following are the groups for commands under various tabs of MS Word 2016:

Home: Clipboard, Font, Paragraph, Styles and Editing
 Insert: Pages, Tables, Illustrations, Add-ins, Media, Links, Comments, Header & Footer, Text, Symbols
 Design: Document Formatting, Page Background
 Layout: Page Setup, Paragraph, Arrange
 References: Table of Contents, Footnotes, Research, Citation & Bibliography, Captions, Index, Table of Authorities
 Mailings: Create, Start Mail Merge, Write & Insert Fields, Preview Results, Finish
 Review: Proofing, Accessibility, Language, Comments, Tracking, Changes, Compare, Protect
 View: Views, Page Movement, Show, Zoom, Window, Macros

MS WORD 2016 SHORT CUT KEYS

Frequently used short cut keys

To do this	Press
Go to "Tell me what you want to do"	Alt+Q
Open	Ctrl+O
Save	Ctrl+S
Close	Ctrl+W
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Select all	Ctrl+A
Bold	Ctrl+B
Italic	Ctrl+I
Underline	Ctrl+U
Decrease font size 1 point	Ctrl+[
Increase font size 1 point	Ctrl+]
Centre text	Ctrl+E
Left align text	Ctrl+L
Right align text	Ctrl+R
Justify align text	Ctrl+J
Cancel	Esc
Undo	Ctrl+Z
Re-do	Ctrl+Y
Zoom	Alt+W, Q, then tab in Zoom dialog box to the value you want.
Copy formatting from text.	Ctrl+Shift+C
Apply copied formatting to text.	Ctrl+Shift+V

Create and edit documents

To do this	Press
Split the document window.	Alt+Ctrl+S
Remove the document window split.	Alt+Shift+C or Alt+Ctrl+S
Save a document.	Ctrl+S

Delete text and graphics

To do this	Press
Delete one character to the left.	Backspace
Delete one word to the left.	Ctrl+Backspace
Delete one character to the right.	Delete
Delete one word to the right.	Ctrl+Delete
Cut selected text to the Office Clipboard.	Ctrl+X
Undo the last action.	Ctrl+Z
Cut to the Spike. (Spike is a feature that allows you to collect groups of text from different locations and paste them in another location).	Ctrl+F3

Find, replace and go to specific items in the document

To do this	Press
Open the search box in the Navigation task pane.	Ctrl+F
Replace text, specific formatting, and special items.	Ctrl+H
Go to a page, bookmark, footnote, table, comment, graphic, or other location.	Ctrl+G
Switch between the last four places that you have edited.	Alt+Ctrl+Z

Work with documents in different views

To do this	Press
Switch to Read Mode view	Alt+W, F
Switch to Print Layout view.	Alt+Ctrl+P
Switch to Outline view.	Alt+Ctrl+O
Switch to Draft view.	Alt+Ctrl+N

Change Paragraph Alignment

To do this	Press
Remove a paragraph indent from the left.	Ctrl+Shift+M
Create a hanging indent.	Ctrl+T
Reduce a hanging indent.	Ctrl+Shift+T
Remove paragraph formatting.	Ctrl+Q

Insert Special Characters

To insert this	Press
A field	Ctrl+F9
A line break	Shift+Enter
A page break	Ctrl+Enter
A column break	Ctrl+Shift+Enter
An em dash	Alt+Ctrl+Minus Sign (on the numeric keypad)
An en dash	Ctrl+Minus Sign (on the numeric keypad)
An optional hyphen	Ctrl+Hyphen
A nonbreaking hyphen	Ctrl+Shift+Hyphen
A nonbreaking space	Ctrl+Shift+Spacebar
The copyright symbol	Alt+Ctrl+C
The registered trademark symbol	Alt+Ctrl+R
The trademark symbol	Alt+Ctrl+T
An ellipsis	Alt+Ctrl+Period
A single opening quotation mark	Ctrl+' (single quotation mark), ` (single quotation mark)
A single closing quotation mark	Ctrl+' (single quotation mark), ' (single quotation mark)
Double opening quotation marks	Ctrl+' (single quotation mark), Shift+' (single quotation mark)
Double closing quotation marks	Ctrl+' (single quotation mark), Shift+' (single quotation mark)
An AutoText entry	Enter (after you type the first few characters of the AutoText entry name and when the ScreenTip appears)

MS POWERPOINT 2016:

PowerPoint is a slideshow presentation program that's part of the Microsoft office suite of tools. PowerPoint slides can be plain with only text, or they can include pictures and even animation, including moving text and images. Text can be formatted in the same way as text can be formatted in Microsoft Word, including color, size, and font type.

In PowerPoint 2016 there are 9 tabs followed by a new feature of "Tell me what you want to do" arranged in a horizontal fashion. The tabs are as follows: File, Home, Insert, design, Transition, Animation, Slide Show, Review, and View.

1. Home

The home tab in PowerPoint has following groups: Clipboard, Slides, Font, Paragraph, drawing and Editing. The Clipboard, Editing and Font commands are same as that in Word 2016. The Slides group contains commands to insert new slide, choose slide layout, reset the positions and formatting of the slide placeholders and option to organize your slides into sections.

2. Insert

Click Insert to add something to a slide. This includes pictures, shapes, charts, links, text boxes, video and more. The Insert Tab has following groups of commands: Slides, Tables, Images, Illustrations, Add-ins, Links, Comments, Text, Symbols and Media.

3. Design

On the Design tab, you can add a theme or color scheme, or format the slide background. The design tab has following categories or groups of commands: Themes- Each theme has its own unique set of font, effect, color to create a visually appealing and overall look of the slide.

Variants - The current theme or style can be customized using various color schemes through variants.

Customize- This group contains commands to change slide size and Format Background.

Designer- For instant slide makeovers.

4. Transitions

Set up how your slides change from one to the next on the Transitions Tab. Find a gallery of the possible transitions in the Transition to This Slide group – click More Button at the side of the gallery to see all of them.

5. Animations

User may use the Animations tab to choreograph the movement of things on his slides. Note that you can see many possible animations in the gallery in the Animation group, and see more of them by clicking More Button. Apart from adding animation you can also customize its duration and timing as you need by using advanced animation and timing group of commands.

6. Slide Show

On the Slide Show tab, set up the way that you want to show your presentation to others.

7. Review

The Review tab lets you add comments, run spell-check, or compare one presentation with another (such as an earlier version).

8. View

Views allow you to look at your presentation in different ways, depending on where you are in the creation or delivery process.

9. File

At one end of the ribbon is the File tab, which you use for the behind-the-scenes stuff you do with a file, such as opening, saving, sharing, exporting, printing and managing your presentation. Click the File tab to open a new view called the Backstage.

10. Tools tabs

When you click some parts of your slides, such as pictures, shapes, SmartArt or text boxes, you might see a colourful new tab appear.

For example, the Drawing Tools tab appears when you click a shape or text box. When you click a picture, the Picture Tools tab appears. Other such tabs include SmartArt Tools, Chart Tools, Table Tools and Video Tools. These tabs disappear or change when you click something else in your presentation.

Terms related to PowerPoint

Slide Show : Each page of a PowerPoint presentation is called a slide. The default orientation of the slide is in landscape layout

Design Template : A design template acts as a coordinated packaged deal. It is created so that even though different slide types can have different layouts and graphics, the whole presentation goes together as an attractive package.

Slide Master : When you want all your slides to contain the same fonts and images (such as logos), you can make those changes in one place—the Slide Master, and they'll be applied to all your slides. To open Slide Master view, on the View tab, select Slide Master:

MS POWERPOINT 2016 SHORT CUT KEYS

Frequently used shortcuts

The following table itemizes the most frequently used shortcuts in PowerPoint.

To do this	Press
Make selected text bold.	Ctrl+B
Change the font size for selected text.	Alt+H, F, and then S
Change the zoom for the slide.	Alt+W, Q

To do this	Press
Cut selected text, object, or slide.	Ctrl+X
Copy selected text, object, or slide.	Ctrl+C
Paste cut or copied text, object, or slide.	Ctrl+V
Undo the last action.	Ctrl+Z
Save the presentation.	Ctrl+S
Insert a picture.	Alt+N, P
Insert a shape.	Alt+H, S, and then H
Select a theme.	Alt+G, H
Select a slide layout.	Alt+H, L
Go to the next slide.	Page Down
Go to the previous slide.	Page Up
Go to the Home tab.	Alt+H
Move to the Insert tab.	Alt+N
Start the slide show.	Alt+S,B
End the slide show.	Esc
Close PowerPoint.	Alt+F, X

MS EXCEL 2016

Microsoft Excel is a spreadsheet developed by Microsoft. Spreadsheets allow you to keep track of data, create charts based from data, and perform complex calculations. Just like a book ledger, spreadsheets store information in columns and rows. You can have up to 256 columns and 65,536 rows per worksheet.

Feature	Maximum limit
Worksheet size	1,048,576 rows by 16,384 columns
Column width	255 characters
Row height	409 points
Page breaks	1,026 horizontal and vertical
Total number of characters that a cell can contain	32,767 characters
Characters in a header or footer	255
Maximum number of line feeds per cell	253
Sheets in a workbook	Limited by available memory (default is 1 sheet)
Unique cell formats/cell styles	64,000
Unique font types	1,024 global fonts available for use; 512 per workbook

Feature	Maximum limit
Hyperlinks in a worksheet	66,530 hyperlinks
Panes in a window	4
Zoom range	10 percent to 400 percent
Fields in a data form	32

Workbook and Worksheet

An Excel worksheet is a single spreadsheet that contains cells organized by rows and columns. A worksheet begins with row number 1 and column A. Each cell can contain a number, text or formula. Excel Workbook comprises number of worksheets. Many new sheets can be added to a workbook using adding worksheet command which is present at the bottom.

Formula and Function

Formulas enable you to enter calculations in a worksheet. Using Excel for calculations gives you the ability to change the data (or values) of the cells, and have the program automatically update the recalculate the value of the output based on the new numbers.

Here are some most frequently used functions in Excel:

Function	Description
SUM function	Use this function to add the values in cells.
IF function	Use this function to return one value if a condition is true and another value if it's false.
LOOKUP function	Use this function when you need to look in a single row or column and find a value from the same position in a second row or column.
MATCH function	Use this function to search for an item in a range of cells, and then return the relative position of that item in the range. For example, if the range A1:A3 contains the values 5, 7, and 38, then the formula <code>=MATCH(7,A1:A3,0)</code> returns the number 2, because 7 is the second item in the range.

CHOOSE function	Use this function to select one of up to 254 values based on the index number. For example, if value1 through value7 are the days of the week, CHOOSE returns one of the days when a number between 1 and 7 is used as index_num.
DATE function	Use this function to return the sequential serial number that represents a particular date. This function is most useful in situations where the year, month, and day are supplied by formulas or cell references. For example, you might have a worksheet that contains dates in a format that Excel does not recognize, such as YYYYMMDD. Use the DATEDIF function to calculate the number of days, months, or years between two dates.
DAYS function	Use this function to return the number of days between two dates.
FIND, FINDB functions	FIND and FINDB locate one text string within a second text string. They return the number of the starting position of the first text string from the first character of the second text string.

Freeze Panes in Excel

If you wish to see a particular area of a worksheet visible or multiple rows and columns while you scroll to another area of the worksheet, you can use Freeze Panes (available under view tab).

Tabs in MS Excel 2016

The ribbon in Excel and other Office Suite's Application has Tabs. In Excel 2016 there are 8 tabs followed by a new feature of "Tell me what you want to do" arranged in a horizontal fashion. The tabs are as follows: File, Home, Insert, Page Layout, Formulas, Data, Review, and View.

Following are the groups of Commands available under tabs of Excel 2016:

Home: Clipboard, Font, Alignment, Number, Style (for Conditional Formatting of table), Cells (to insert, delete and format cells), Editing (AutoSum, Sort & Filter, Find & Select)

Insert: Tables (Pivot Table, and Tables); Illustrations (Pictures, Online Picture, shapes and Icon); Add-ins;

Charts; Tours (3D Map); Sparklines (Line, Column, Win/Loss); Filters; Links; Text; Symbols
Page Layout: Themes; Page Setup (Margin, orientation, page size, print area, breaks, background and print titles); Scale to fit; Sheet Options (Gridline, headings); Arrange

Formulas: Insert Function; Function Library; Defined Names; Formula Auditing; Calculation

Data: Get external Data; Get & Transform (New query, show queries, from table, recent sources); Connections; Sort and Filter; Data Tools; Forecast (what-if analysis, forecast sheet); Outline

Review: Proofing (Spelling, Thesaurus); Accessibility; Insights-smart lookup; Comments; Changes (Protect sheet, protect workbook, share workbook, allow users to edit ranges, track changes)

View: Workbook Views (Normal, Page Break Preview, Page Layout, Custom Views); Show (gridlines, ruler, formula bar, headings); Zoom; Window; Macros

EXCEL 2016 SHORT CUT KEYS

Frequently used shortcuts Keys

To do this	Press
Close a spreadsheet	Ctrl+W
Open a spreadsheet	Ctrl+O
Go to the Home tab	Alt+H
Save a spreadsheet	Ctrl+S
Copy	Ctrl+C
Paste	Ctrl+V
Undo	Ctrl+Z
Remove cell contents	Delete key
Choose a fill color	Alt+H, H
Cut	Ctrl+X
Go to Insert tab	Alt+N
Bold	Ctrl+B
Center align cell contents	Alt+H, A, then C
Go to Page Layout tab	Alt+P
Go to Data tab	Alt+A
Go to View tab	Alt+W
Open context menu	Shift+F10, or Context key
Add borders	Alt+H, B
Delete column	Alt+H,D, then C
Go to Formula tab	Alt+M
Hide the selected rows	Ctrl+9
Hide the selected columns	Ctrl+0

Format in cells: keyboard shortcuts

To do this	Press
Move to the previous cell in a worksheet or the previous option in a dialog box.	Shift+Tab
Move one cell up in a worksheet.	Up Arrow key
Move one cell down in a worksheet.	Down Arrow key
Move one cell left in a worksheet.	Left Arrow key
Move one cell right in a worksheet.	Right Arrow key
Move to the edge of the current data region in a worksheet.	Ctrl+arrow key
Enter End mode, move to the next nonblank cell in the same column or row as the active cell, and turn off End mode. If the cells are blank, move to the last cell in the row or column.	End, arrow key
Move to the last cell on a worksheet, to the lowest used row of the rightmost used column.	Ctrl+End
Extend the selection of cells to the last used cell on the worksheet (lower-right corner).	Ctrl+Shift+End
Move to the cell in the upper-left corner of the window when Scroll Lock is turned on.	Home+Scroll Lock
Move to the beginning of a worksheet.	Ctrl+Home
Move one screen down in a worksheet.	Page Down
Move to the next sheet in a workbook.	Ctrl+Page Down
Move one screen to the right in a worksheet.	Alt+Page Down
Move one screen up in a worksheet.	Page Up
Move one screen to the left in a worksheet.	Alt+Page Up
Move to the previous sheet in a workbook.	Ctrl+Page Up
Move one cell to the right in a worksheet. Or, in a protected worksheet, move between unlocked cells.	Tab

Format in cells: keyboard shortcuts

To do this	Press
Open the Format Cells dialog box.	Ctrl+1
Format fonts in the Format Cells dialog box.	Ctrl+Shift+F or Ctrl+Shift+P
Edit the active cell and put the insertion point at the end of its contents. Or, if editing is turned off for the cell, move the insertion point into the formula bar. If editing a formula, toggle Point mode off or on so you can use arrow keys to create a reference.	F2
Add or edit a cell comment.	Shift+F2
Open the Insert dialog to insert blank cells.	Ctrl+Shift+Plus (+)
Open the Delete dialog box to delete selected cells.	Ctrl+Minus (-)
Enter the current time.	Ctrl+Shift+colon (:)
Enter the current date.	Ctrl+semi-colon (;)
Switch between displaying cell values or formulas in the worksheet.	Ctrl+grave accent (`)
Copy a formula from the cell above the active cell into the cell or the Formula Bar.	Ctrl+apostrophe (')
Move the selected cells.	Ctrl+X
Copy the selected cells.	Ctrl+C
Paste content at the insertion point, replacing any selection.	Ctrl+V
Open the Paste Special dialog box.	Ctrl+Alt+V
Italicize text or remove italic formatting.	Ctrl+I or Ctrl+3
Bold text or remove bold formatting.	Ctrl+B or Ctrl+2
Underline text or remove underline.	Ctrl+U or Ctrl+4
Apply or remove strikethrough formatting.	Ctrl+5
Switch between hiding objects, displaying objects, and displaying placeholders for objects.	Ctrl+6

To do this	Press
Apply an outline border to the selected cells.	Ctrl+Shift+ampersand (&)
Remove the outline border from the selected cells.	Ctrl+Shift+underscore (_)
Display or hide the outline symbols.	Ctrl+8

Work with data, functions, and the formula bar: keyboard shortcuts

To do this	Press
Select an entire PivotTable report.	Ctrl + Shift + asterisk (*)
Edit the active cell and put the insertion point at the end of its contents. Or, if editing is turned off for the cell, move the insertion point into the formula bar. If editing a formula, toggle Point mode off or on so you can use arrow keys to create a reference.	F2
Expand or collapse the formula bar.	Ctrl+Shift+U
Cancel an entry in the cell or Formula Bar.	Esc
Complete an entry in the formula bar and select the cell below.	Enter
Move the cursor to the end of the text when in the formula bar.	Ctrl+End
Select all text in the formula bar from the cursor position to the end.	Ctrl+Shift+End
Calculate all worksheets in all open workbooks.	F9
Calculate the active worksheet.	Shift+F9
Display the Function Arguments dialog box when the insertion point is to the right of a function name in a formula.	Ctrl+A
Insert argument names and parentheses when the insertion point is to the right of a function name in a formula.	Ctrl+Shift+A

Invoke Flash Fill to automatically recognize patterns in adjacent columns and fill the current column	Ctrl+E
Cycle through all combinations of absolute and relative references in a formula if a cell reference or range is selected.	F4
Insert a function.	Shift+F3
Create a chart of the data in the current range in a separate Chart sheet.	F11
Define a name to use in references.	Alt+M, M, D
Paste a name from the Paste Name dialog box (if names have been defined in the workbook.	F3
Move to the first field in the next record of a data form.	Enter
Create, run, edit, or delete a macro.	Alt+F8

FILE EXTENSIONS:

Word

XML file type	Extension
Document	.docx
Macro-enabled document	.docm
Template	.dotx
Macro-enabled template	.dotm

Excel

XML file type	Extension
Workbook	.xlsx
Macro-enabled workbook	.xlsm
Template	.xltx
Macro-enabled template	.xltm
Non-XML binary workbook	.xlsb
Macro-enabled add-in	.xlam

PowerPoint

XML file type	Extension
Presentation	.pptx
Macro-enabled presentation	.pptm
Template	.potx
Macro-enabled template	.potm
Macro-enabled add-in	.ppam
Show	.ppsx
Macro-enabled show	.ppsm
Slide	.sldx
Macro-enabled slide	.sldm
Office theme	.thmx



DATABASE MANAGEMENT SYSTEM

DBMS is the acronym of **Data Base Management System**. DBMS is a collection of interrelated data and a set of programs to access this data in a convenient and efficient way. It controls the organization, storage, retrieval, security and integrity of data in a database.

Types of Database Model: Network Database Model, Hierarchical Database model, Relational Database Model and Object-Oriented Database Model.

Architecture of DBMS-The generalized architecture of DBMS is called ANSI/ SPARC model. The architecture is divided into three levels:

- **External view or user view/View Level**- It is the highest level of data abstraction. This includes only those portions of database of concern to a user or Application program. Each user has a different external view and it is described by means of a scheme called external schema.
- **Conceptual view/Logical Level**- All the database entities and the relationship among them are included. One conceptual view represents the entire database called conceptual schema.
- **Internal view/Physical Level**- It is the lowest level of abstraction, closest to the physical storage method. It describes how the data is stored, what is the structure of data storage and the method of accessing these data. It is represented by internal schema.

Data model: A data model is a plan for building a database. The model represents data conceptually, the way the user

sees it, rather than how computers store it. Data models focus on required data elements and associations.

- Entity – Relationship Model
- Relational Model

Entity: A thing (animate or inanimate) of independent physical or conceptual existence and distinguishable. In the University database context, an individual student, faculty member, a class room, are entities.

Attributes: Each entity is described by a set of attributes/properties.

SQL (Structured Query Language) is a database computer language designed for the retrieval and management of data in relational database.

Constraints: In SQL, we have the following constraints-
NOT NULL- Indicates that a column cannot store NULL value
UNIQUE - Ensures that each row for a column must have a unique value

CHECK - Ensures that the value in a column meets a specific condition

DEFAULT - Specifies a default value for a column

Primary Key uniquely identifies a record in a table.

A **candidate key** is a single field or the least combination of fields that uniquely identifies each record in the table.

A **foreign key** is generally a primary key from one table that appears as a field in another.

DDL: Data Definition Language is used for specifying the database schema. It contains commands to create tables, alter the structure, delete tables or rename tables. E.g. Create

DML: Data Manipulation Language is used for accessing and manipulating data in a database. E.g. Select, Update

DCL: Data Control Language is used for granting and revoking user access on a database.



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FULL FORMS & ABBREVIATIONS

TCP	Transmission Control Protocol	TFTP	Trivial File Transfer Protocol
FTP	File Transfer Protocol	SFTP	Secure File Transfer Protocol

SMTP	Simple Mail Transfer Protocol
HTTP	Hyper Text Transfer Protocol
HTTPS	Hyper Text Transfer Protocol Secure
UDP	User Datagram Protocol
ARP	Address Resolution Protocol
Tel Net	Telecommunication Networking
POP3	Post Office Protocol Version3
BGP	Border Gateway Protocol
P2P	Point to Point Protocol
PPP	Peer to Peer Protocol
IP	Internet Protocol
SNMP	Simple Network Management Protocol
NTP	Network Time Protocol
SIP	Session Initiation Protocol
DHCP	Dynamic Host Configuration Protocol
IMAP4	Internet Message Access Protocol Version 4
RARP	Reverse Address Resolution Protocol
SSH	Secure Shell
MIME	Multipurpose Internet Mail Extension
SMIME	Secure MIME
ALGOL	Algorithmic Language
ANSI	American National Standard Institute
ATM	Asynchronous Transfer Mode
AS	Autonomous System
BASIC	Beginners All Purpose Symbolic Instruction Code
BIOS	Basic input Output System
BPS	bit Per Second
DNS	Domain Name Server
EDI	Electronic Data Interchange
URL	Uniform Resource Locator
GIF	Graphics Interchange Format
ASCII	American Standard Code for Information Interchange
ASP	Active Server Pages
BCC	Blind Carbon Copy
CC	Carbon copy
CAD	Computer Aided Design
CDMA	Code Division Multiple Access
GSM	Global System for Mobile Communication
CMOS	Complementary Metal Oxide Semi-Conductor
CMYK	Cyan Magenta Yellow Black
GPS	Global Positioning System
GUI	Graphical User Interface
HDMI	High Definition Multimedia Interface
GIGO	Garbage in Garbage Out
LIFO	Last In First Out
FIFO	First In First Out
PING	Packet Internet Gopher
HDD	Hard Disc Drive
NIC	Network Interface Controller/Cord
HDTV	High Definition Television
ISP	Internet Service Provider
JPEG	Joint Picture Expert Group
LCD	Liquid Crystal Display
LED	Light Emitting Diode

TFT	Thin Film Transistor
CRT	Cathode Ray Tube
MIDI	Musical Instrument Digital Interface
MPEG	Moving Picture Expert Group
PDA	Personal Digital Assistants
PDF	Portable Document Format
ARPANET	Advanced Research Projects Agency Network
SQL	Structured Query Language
USB	Universal Serial Bus
VIRUS	Vital Information Resource Under Siege
VOIP	Voice Over Internet Protocol
IVR	Interactive Voice Response
WIFI	Wireless fidelity
WIMAX	Worldwide Interoperability for Microwave Access
ADSL	Asymmetric Digital Subscriber Line
API	Application Program Interface
ARP	Address Resolution Protocol
RARP	Reverse ARP
ICANN	Internet Corporation of Assign Names & Numbers
DPI	Dots Per Inch



DSL	Digital Subscriber Line
FAT	File Allocation Table
MANET	Mobile Ad-Hoc Network
MIPS	Million Instruction Per Second
BIPS	Billion Instruction Per Second
TIPS	Trillion Instruction Per Second
NAT	Network Address Translation
IEEE	Institute of Electrical and Electronic Engineer
IMAP	Internet Message Access Protocol
ISDN	Integrated Servers Digital Network
ISO	International Standard Organization/ International Org for Standardization
DHTML	Dynamic Hyper Text Markup Language
MAC	Media Access Control

CAN	Campus Area Network	PCB	Printer Circuit Board
PAN	Personal Area Network	SRAM	Static RAM
SAN	Storage Area Network	DRAM	Dynamic RAM
CNM	Circulatory Network Mode	PROM	Programmable ROM
IPV4	Internet Protocol Version 4	EPROM	Electrically PROM
IPV6	Internet Protocol Version 6	EEPROM	Electrically Erasable PROM
DBMS	Data Base Management System	HDD	Hard Disc Drive
MODEM	Modulator Demodulator	FDD	Floppy Disc Drive
RAM	Random Access Memory	CD	Compact Disc
ROM	Read Only Memory	DVD	Digital Video/Versatile Disc
SMPS	Switch Mode Power Supply	BRD	Blu Ray Disc
OMR	Optical Mark Reader / Recognition	HVD	Holographic Versatile Disc
OCR	Optical Character Reader / Recognition	ACID	Atomicity Consistency Isolation Durability
BCR	Bar Code Reader	WYSIWYG	What you see is what you get
MICR	Magnetic Ink Character Reader / Recognition		

PROGRAMMING LANGUAGE

PROGRAMMING LANGUAGE

Programming Language are coded language are coded language used by programmer to write instructions that a computer can understand to what the Programmer want.

Following are the major categories of Programming Languages –

- Machine Language
- Assembly Language
- High Level Language
- System Language
- Scripting Language

Pseudo code -

Pseudo code is a simple way of writing programing code in english.

For example – Task – Add two Numbers ---

- Start
- Get two numbers
- Add them
- Print the answer
- End

Flow chart

A flow chart is a graphical or symbolic representation of a process. Each step in the

process is represented by a different symbol and contains a short description of the process step. Different flow chart symbols have different meanings. The most common flow chart symbols are:

- Terminator: An oval flow chart shape indicating the start or end of the process.
- Process: A rectangular flow chart shape indicating a normal process flow step.
- Decision: A diamond flow chart shape indication a branch in the process flow.
- Connector: A small, labeled, circular flow chart shape used to indicate a jump in the process flow. (Shown as the circle with the letter "A", below.)
- Data: A parallelogram that indicates data input or output (I/O) for a process.
- Document: Used to indicate a document or report (see image in sample flow chart below).

What is Algorithm

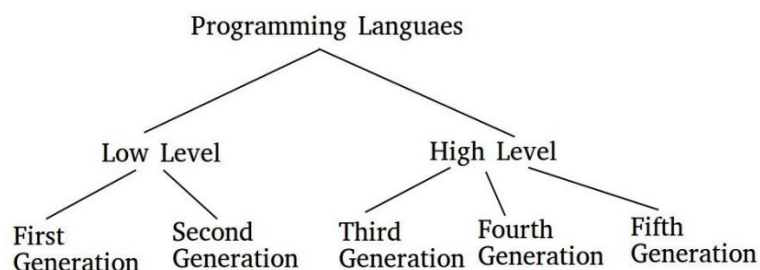
An algorithm is a well-defined procedure that allows a computer to solve a problem. Another way to describe an algorithm is a sequence of unambiguous instructions. ... In fact, it is difficult to think of a task performed by your computer that does not use algorithms.

Sequence of program -

- Algorithm
- Flowchart
- Program (source code)
- Compiling
- Object code

What is syntax - way to write any instruction in any programming language with the help of some special symbols and character.

Types of Programming Language



• **Machine language**

Machine language is written in binary language. It consists of 0s and 1s. Machine language is dependent programming language. It is first generation programming language. It does not require translator. Machine Language is easy to understand for computer but difficult to programmer. The program is written in machine is called object code.

It has two part -

Opcode - Operation code - an opcode is a single instruction that can be executed by the CPU.

Operand (address part) - operands are manipulated by opcode

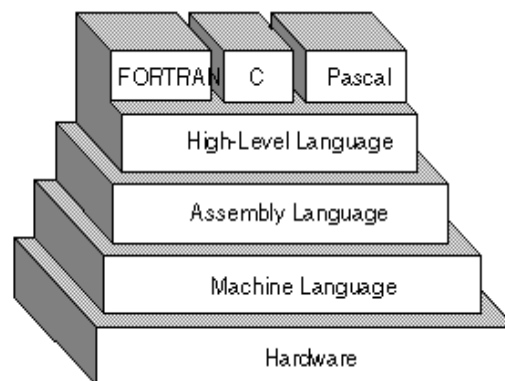
• **Assembly Language -**

Assembly language used mnemonic code in place of binary language. It is second generation programming language. An assembly language is a low-level programming language designed for a specific type of processor. Assembly languages generally lack high-level conveniences such as variables and functions.

• **High level Language -**

A high-level language (HLL) is a programming language such as C, FORTRAN, or Pascal that

enables a programmer to write programs that are more or less independent of a particular type of computer. It is independent programming language. It is third Generation programming language. The program is written in high level is called source code. FORTRAN was first high level language.



➤ **FORTRAN**

Full form Formula Translation. It was first high-level language. It was introduced by John Backus in 1957. It is used for scientist and engineers.

➤ **ALGOL**

ALGOL is short for algorithmic language. It is an early high-level computer programming language devised to carry out scientific calculations. ALGOL was used as the standard method for creating algorithms. First appeared in 1958. ALGOL language designed by: Friedrich L. Bauer, Hermann Bottenbruch

➤ **COBOL**

The name COBOL stands for Common Business-Oriented Language. COBOL is a programming language that was developed in the year 1959. It was one of the first computer programming languages used for commercial. It was introduced by Grace Hopper.

➤ **BASIC(Beginner's All-purpose Symbolic Instruction Code)**

BASIC. Stands for "Beginner's All-purpose Symbolic Instruction Code". BASIC is a computer programming language that was developed in the mid-1960s to provide a way for students to write simple computer programs. In 1964, John G. Kemeny and Thomas E. Kurtz designed the original BASIC language at Dartmouth College.

➤ **Pascal**

Pascal is an imperative and procedural programming language, designed by Niklaus Wirth as Apollo Computer used Pascal as the systems programming language for its operating systems beginning in 1980. It is named in honor of the French mathematician, philosopher and physicist Blaise Pascal.

➤ **C Language**

C is a general-purpose, procedural computer programming language supporting structured programming, lexical variable scope, and recursion, while a static type system prevents unintended operations. C was developed at Bell Labs by Dennis Ritchie for the Unix Operating System in the early 1970s. It is also called middle level language.

➤ **C++ Language**

C++ is a High-level programming language developed by Bjarne Stroustrup starting in 1979 at Bell Labs. C++ runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX. This C++ tutorial adopts a simple and practical approach to describe the concepts of C++ for beginners to advanced software engineers. C++ fully supports object-oriented programming, including the four pillars of object-oriented development.

➤ **JAVA**

Java is a programming language and a platform. Java is a high level, robust, object-oriented and secure programming language. Java is introduced by James Gosling. Java is used many application like

1. Desktop Applications such as acrobat reader, media player, antivirus, etc.
2. Web Applications such as irctc.co.in, javatpoint.com, etc.
3. Enterprise Applications such as banking applications.
4. Mobile
5. Embedded System
6. Smart Card
7. Robotics
8. Games, etc.

➤ **PERL(Practical Extraction and Reporting Language)**

Perl is a general-purpose programming language originally developed for text manipulation and now used for a wide range of tasks including system administration, web development, network programming, GUI development, and more. Perl was originally developed by Larry Wall in 1987. Stand for "Practical Extraction and Reporting Language"

➤ **Python**

Python is a general purpose and high level programming language. You can use Python for developing desktop GUI applications, websites and web applications. It is introduced by Guido van Rossum.

➤ **C# Language**

C# can be used to create almost anything but is particularly strong at building Windows desktop applications and games. C# can also be used to develop web applications and has become increasingly popular for mobile development too. It is developed by Microsoft. C# is an object-oriented programming language used with XML-based Web services on the .NET platform and designed for improving productivity in the development of Web applications.

Scripting Language

Scripting languages are server-side scripting languages that manipulate the data, usually in a database, on the server. Scripting languages came about largely because of the development of the Internet as a communications tool.

Html, Xml, JavaScript, ASP, JSP, PHP, Perl, Tcl and Python are examples of scripting languages.

Language Translator –

Language translator is a program which is used to translate instructions that are written in the source code to object code i.e. from high-level language or assembly language into machine language.

There are 3 different types of translators as

- 1. Assembler-** Assembler are used to convert assembly language code into machine code. Assembler convert mnemonic code in to object code.
- 2. Compiler-** Compiler translate high level language in machine language. It read the entire program. It finds the syntax error. Error in a program is called bug. Compiler convert source code into object code.
- 3. Interpreter-** An interpreter translates high-level instructions into an intermediate form, which it then executes. It reads the program line by line. In contrast, a compiler translates high-level instructions directly into machine language. Compiled programs generally run faster than interpreted programs.



Important Questions Based on Microsoft Office:

- 1. Microsoft Office is a _____.**
A) Shareware B) Public-domain software
C) Opensource software D) An application suit
E) Firmware
- 2. Which term is not related with font?**
A) Font face B) Font size C) Font color
D) Fontgrammar E) None of these
- 3. The valid format of MS Word is _____.**
A) .jpeg B) .png C) .doc
D) .exe E) None of these
- 4. Which of the following option may be used to change page-size and margins?**
A) Page Layout B) View C) Tools
D) Data E) None of these
- 5. To justify the selected text, the shortcut key is _____.**
A) Ctrl + 1 B) Ctrl + J C) Ctrl + U
D) Ctrl + Alt + K E) None of these
- 6. Workbook is a collection of _____ in MS Excel?**
A) page set-up B) buttons C) diagrams
D) charts E) worksheets
- 7. In order to move from one worksheet to another in MS-Excel workbook. One should click _____.**
A) active cell B) scroll bar C) sheet tab
D) tab button E) None of these
- 8. In a spreadsheet, a _____ is a number you will use in a calculation.**
A) label B) cell C) field
D) value E) None of these
- 9. In Power Point, which of the following will not advance the slides in a slide show view?**
A) Esc key B) The spacebar
C) The Enter key D) The mouse button
E) None of these
- 10. In Microsoft PowerPoint, two kinds of sound effects files that can be added to the presentation are**
A) .wav files and .mid files
B) wav files and .gif files C) wav files and .jpg files
D) jpg files and .gif files E) None of these
- 11. Which PowerPoint view displays each slide of the presentation as a thumbnail and is useful for rearranging slides?**
A) SlideSorter B) Slide Show C) Slide Master
D) Notes Page E) Slide Design
- 12. If you want to insert a chart to your slide then go to _____.**
A) Insert – Chart B) Home – Chart C) Format – Chart
D) Table – Chart E) None of these
- 13. Which of the following is not a type of Microsoft access database object?**
A) Table B) Worksheets C) Modules
D) Macros E) None of these
- 14. Row in an Access table is also known as _____.**
A) field B) record C) data
D) type E) None of these
- 15. Queries in Access can be used as _____.**
A) View, change and analyse data in different ways
B) A source of records for forms and reports
C) to access internet D) Both a and b
E) None of these
- 16. Pressing F8 key for three times selects**
A) A word B) A sentence C) A paragraph
D) Entire document E) None of these
- 17. What happens if you press Ctrl + Shift + F8?**
A) It activates extended selection
B) It activates the rectangular selection
C) It selects the paragraph on which the insertion line is.
D) Both (A) and (C) E) None of these

18. How can you disable extended selection mode?
 A) Press F8 again to disable
 B) Press Del to disable
 C) **Press Esc to disable**
 D) Press Enter to disable
 E) It cannot be disabled
19. What does EXT indicator on status bar of MS Word indicate?
 A) It indicates whether the external text is pasted on document or not
 B) It indicates whether extended add-ons are installed on MS Word or not
 C) **It indicates whether Extended Selection mode is turned on or off**
 D) Both (A) and (B)
 E) None of these
20. What is the maximum number of lines you can set for a drop cap?
 A) 3
 B) **10**
 C) 15
 D) 20
 E) 50
21. What is the default number of lines to drop for drop cap?
 A) **3**
 B) 10
 C) 15
 D) 20
 E) 7
22. What is the shortcut key you can press to create a copyright symbol?
 A) Alt+Ctrl+C
 B) Alt+C
 C) Ctrl+C
 D) Ctrl+Shift+C
 E) None of these
23. How many columns can you insert in a word document in maximum?
 A) 35
 B) **63**
 C) 55
 D) 65
 E) 60
24. What is the smallest and largest font size available in Font Size tool on formatting toolbar?
 A) **8 and 72**
 B) 8 and 64
 C) 12 and 72
 D) 10 and 40
 E) None of these
25. Select all the text in MS Word document by:
 A) Ctrl+S
 B) Ctrl+1
 C) Shift+A
 D) **Ctrl+A**
 E) None of these
26. MS Word is _____ software.
 A) System
 B) **Application**
 C) Programming
 D) Compiler
 E) None of these
27. The shortcut key for paste selected text/picture in MS Word is _____.
 A) Ctrl+X
 B) Ctrl+C
 C) **Ctrl+V**
 D) Ctrl+Z
 E) None of these
28. Using Print Preview is useful. When you want to
 A) colour the document
 B) save the document
 C) delete the document
 D) copy the document
 E) **view how the document will appear when printed**
29. To indent the first paragraph of your report, you should use this key.
 A) Space bar
 B) Return key
 C) **Tab key**
 D) Shift key
 E) None of these
30. In Excel, the contents of the active cell are displayed in the _____.
 A) footer bar
 B) tool bar
 C) task bar
 D) menu bar
 E) **formula bar**
31. _____ appear at the bottom of the Excel Window.
 A) **Worksheet tabs**
 B) Name box
 C) Formula bar
 D) Title bar
 E) None of these
32. In MS excel _____ are numbered from 1 to onwards and _____ are numbered from A to onwards.
 A) Columns, rows
 B) Rows, slides
 C) Slides, rows
 D) **Rows, columns**
 E) None of these
33. What is the default column width of MS Excel?
 A) 5.5
 B) 2.98
 C) **8.43**
 D) 6.49
 E) None of these
34. To insert a new slide go to _____ tab, in the Slides group, click New Slide.
 A) **Home**
 B) View
 C) Animations
 D) Slide show
 E) None of these
35. Times new Roman, Cambria, Arial are the example of _____.
 A) **Font face**
 B) Themes
 C) SmartArt
 D) Clipart
 E) None of these
36. In Access a _____ is the collection of data items of all the fields pertaining to one entity.
 A) field
 B) **record**
 C) form
 D) report
 E) None of these
37. A table of how many columns can you insert in a word document in maximum.
 A) 55
 B) 42
 C) 32
 D) **63**
 E) As you wish
38. In MS Access a _____ name must be unique within a database.
 A) Field
 B) Record
 C) **Table**
 D) Character
 E) None of these
39. The minimum number of rows and columns in MS Word document is
 A) **1 and 1**
 B) 2 and 1
 C) 2 and 2
 D) 3 and 3
 E) None of these
40. Thesaurus tool in MS Word is used for
 A) Spelling suggestions
 B) Grammar options
 C) **Synonyms and Antonyms words**
 D) All of the above
 E) None of these
41. Why Drop Caps are used in document?
 A) To drop all the capital letters
 B) To automatically begin each paragraph with capital letter
 C) **To begin a paragraph with a large dropped initial capital letter**
 D) To drop the numbers
 E) None of these
42. A bookmark is an item or location in document that you identify as a name for future reference. Which of the following task is accomplished by using bookmarks?
 A) To add anchors in web page
 B) To mark the ending of a paragraph of document
 C) **To quickly jump to specific location in document**
 D) To add hyperlinks in webpage
 E) None of these
43. A word processor would most likely be used to do
 A) Keep an account of money spent
 B) Do a computer search in media center
 C) Maintain an inventory
 D) **Type a biography**

E) Maintain records of database

44. Which of the following is not valid version of MS Office?

- A) Office XP **B) Office Vista** C) Office 2007
D) Office 2010 E) None of these



45. You cannot close MS Word application by

- A) Choosing File menu then Exit submenu
B) Press Alt+F4
C) Click X button on titlebar
D) From File menu choose Close submenu
E) None of these

46. The key F12 in MS Word opens a

- A) **Save As dialog box** B) Open dialog box
C) Savedialog box D) Close dialog box
E) Opens help menu

47. What is the short cut key to open the Open dialog box?

- A) F12 B) Shift F12 C) Alt + F1
D) Ctrl + F12 E) None of these

46. Which of the following symbol sets would be most likely to contain a mathematical symbol such as a degree sign, greater than or equal to, or a Greek letter?

- A) Wingdings B) Wingdings 3 C) Webdings
D) Symbol E) Arial

47. When assigning a shortcut key to a symbol, you should always try to select a key or key combination

- A) Unassigned
B) Located on the ten-key pad section of your keyboard.
C) Assigned to another task.
D) From the same font family as the symbol.
E) None of these

48. Suppose you wanted to create an AutoCorrect entry that would type the words 'We regret to inform you that your submission has been declined' of the following choices, which would be the best name you could assign to this entry?

that is:

- A) Regret **B) Subdual**
C) We regret to inform you that your submission has been declined
D) 11 E) None of these

49. If you want to convert a symbol or several lines of text into an AutoCorrect entry, you should:

- A) **Insert the symbol or type the text in a Word document first. Then, select the text or symbol and go to the AutoCorrect dialog box.**
B) Click the Tools menu and choose AutoCorrect Options. Then, click the Insert menu and choose Symbol (or click the Format menu and choose Paragraph) to add the symbol or paragraph to AutoCorrect.
C) AutoCorrect can only accommodate one line of text. It is not possible to convert a symbol or multiple lines of text into an AutoCorrect entry.
D) Insert the symbol or type the text in a Word document first. Then, select the text or symbol and click the Edit menu followed by Paste Special. Select New AutoCorrect Entry and then click OK.
E) None of the above

50. AutoCorrect was originally designed to replace _____ words as you type.

- A) Short, repetitive B) Grammatically incorrect
C) Misspelled words D) Incorrect Image
E) None of the above

51. Which of the following is the second step in creating a macro?

- A) Start recording
B) Using your mouse or keyboard, perform the task you want to automate
C) Assign a keyboard shortcut to the macro
D) Give the macro a name
E) None of these

52. If you will be displaying or printing your document on another computer, you'll want to make sure and select the _____ option under the 'Save' tab.

- A) Embed Fonts **B) Embed True Type Fonts**
C) Save True Type Fonts D) Save Fonts
E) Font Face

53. In Word, the mailing list is known as the _____.

- A) Data sheet B) Source **C) Datasource**
D) Sheet E) Hyperlink

54. To delete 3-D rotation from the shape, point to 3-D Rotation, and then click _____.

- A) Non Rotation B) Not Rotation C) None Rotation
D) No Rotation E) None of these

55. In Microsoft Office Power-Point 2007, a _____ is a

connection from one slide to another slide in the same presentation or to a slide in another presentation, an e-mail address, a Web page, or a file.

- A) Hyphenation B) Header C) Footer
D) Hyperlink E) None of these

- | | |
|--|--|
| <p>56. In PowerPoint, which of the following is the default page setup orientation for notes pages, outlines and handouts?
 A) Vertical B) Landscape C) Portrait
 D) All of these E) None of these</p> <p>57. In slide layout panel, how many layouts are available for next layout by default?
 A) 4 B) 7 C) 12
 D) 15 E) None of these</p> <p>58. In Access, this operation copies a backup file from the storage medium back onto the computer :
 A) Restore B) Recreate C) Copy
 D) Structure E) None of these</p> | <p>59. In the Form Wizard dialog box, the fields from the selected table are displayed in which list box?
 A) All fields B) All Records
 C) Available Records D) Available Fields
 E) None of these</p> <p>60. Which control does access use to link data access page components to access data?
 A) Microsoft Office Data Source Control
 B) Microsoft Dynamic Data Control
 C) Microsoft Data Connection Control
 D) Microsoft Default Connection Control
 E) None of the above</p> |
|--|--|

Miscellaneous Questions on Computer Knowledge

- | | |
|--|---|
| <p>1. CD-ROM is a _____ ?
 (a) Semiconductor memory (b) Memory registers
 (c) Magnetic memory (d) Cache Memory
 (e) None of the above</p> <p>2. Actual execution of instructions in a computer takes place in?
 (a) ALU (b) Control Unit (c) Storage unit
 (d) Control bus (e) None of the above</p> <p>3. Modem stands for _____.
 (a) A type of secondary memory
 (b) Modulator demodulator
 (c) Mainframe operating device memory
 (d) Multiprocessing device
 (e) None of the above</p> <p>4. _____ Controls access to the resources on a network.
 (a) Server (b) Client
 (c) Both ((a) and (b)) (d) Memory
 (e) None of the above</p> <p>5. The wider the bus, the _____ the transfer of data
 (a) Greater the number of transfer steps required and the slower
 (b) Greater the number of transfer steps required and the faster
 (c) Fewer the number of transfer steps required and the slower
 (d) Fewer the number of transfer steps required and the faster
 (e) None of the above</p> <p>6. What does 'GIF' Stands for?
 (a) Graphics Interchange Format
 (b) Geo Interchange Format
 (c) Graphical Interconnection Format
 (d) Graphics Interlace Format
 (e) Graphics Interchange File</p> <p>7. Cache and main memory will lose their contents when the power is off. They are _____.
 (a) dynamic (b) static (c) volatile
 (d) non-volatile (e) faulty</p> <p>8. How can the user determine what programs are available on a computer ?
 (a) Checking the hard disk properties</p> | <p>(b) Viewing the installed programs during the booting process
 (c) Checking the operating system for a list of installed programs
 (d) Checking the existing files saved on the disk
 (e) None of these</p> <p>9. Processing involves _____.
 (a) inputting data into a computer system
 (b) transforming input into output
 (c) displaying output in a useful manner
 (d) providing relevant answers
 (e) None of these</p> <p>10. Which process checks to ensure the components of the computer are operating and connected properly?
 (a) Booting (b) Processing (c) Saving
 (d) Editing (e) None of these</p> <p>11. What kind of programming language is Java?
 (a) Object-oriented programming language
 (b) Relational programming language
 (c) Sixth-generation programming language
 (d) Database management programming language
 (e) None of these</p> <p>12. Formatting a disk results in all the data being?
 (a) Saved to the disk (b) Copied from the disk
 (c) Deleted from the disk
 (d) All of the above (e) None of the above</p> <p>13. What type of web technology creates an online community where people can make statements and others can read and respond to those statements?
 (a) I-Journal (b) Podcast (c) ASP
 (d) Blog (e) None of these</p> <p>14. What is a common medium used for thieves to steal others' identities?
 (a) Telephone (b) Pick pocketing
 (c) Burglary (d) Email
 (e) None of the above</p> <p>15. Application software?
 (a) Is used to control the operating system
 (b) Is designed to help programmers
 (c) Performs specific task for computer users
 (d) Is used for making design only
 (e) All of the above</p> |
|--|---|

16. A set of instruction telling the computer what to do is called?
(a) Mentor (b) instructor (c) compiler
(d) **program** (e) debugger
17. A _____ is anything that can cause harm.
(a) vulnerability (b) redundancy (c) Spam
(d) **threat** (e) None of the above
18. A _____ is a small program embedded inside of a GIF image.
(a) **web bug** (b) cookie (c) spyware application
(d) spam (e) None of the above
19. When you save an Microsoft Access project, what file format do you use?
(a) **.adp** (b) .Xml (c) .mbd
(d) All of these (e) None of the above
21. To select a column the easiest method is to?
(a) double click any cell in the column
(b) drag from the top cell in the column to the last cell in the column
(c) **click the column heading**
(d) click the row heading
(e) None of the above
22. 30,000 bytes is equal to
(a) **30 KB** (b) 3 MB (c) 3 GB
(d) 3 TB (e) None of these
23. Terminal is a:
(a) device to give power supply to computer
(b) **Point at which data enters or leaves the computer**
(c) The last instruction in a program
(d) any input /output device
(e) None of these
24. Which part of a computer cannot be touched?
(a) Mouse (b) Monitor (c) Hardware
(d) **Software** (e) None of these
25. Manipulation of data in computer is called
(a) Boot (b) **Processing** (c) Simplification
(d) Format (e) Clean disk
26. Which computer bus connects the main memory to the memory controller in computer systems?
(a) Data Bus (b) **Memory Bus**
(c) I/O Bus (d) Both (b) and (c)
(e) None of these
27. _____ and _____ are the two types of computer memory.
(a) RAM and CPU (b) ROM and CPU
(c) **RAM and ROM** (d) RAM and BIOS
(e) BIOS and ROM
28. What is the full form of CRT?
(a) **Cathode Ray Tube**
(b) Computer Resolution and Transparency
(c) Cathode Resolution and Transparency
(d) Computer RAM Trash
(e) None of these
29. Which among the following is not hardware?
(a) Motherboard (b) **Operating system**
(c) CPU (d) Keyboard
(e) Hard disk drive
30. Which of the following is software?

- (a) Motherboard (b) CPU
(c) **Microsoft Windows**
(d) RAM (e) All of these
31. In computing, a _____ is a directive to a computer program order to perform a specific task.
(a) Hard boot (b) Hibernation (c) **Command**
(d) Warm boot (e) Format
32. Which of the following is/are modifier keys in a computer?
(a) Ctrl (b) Alt (c) Shift
(d) Both 2 and 3 (e) **All of the above**
33. Which among the following is associated with Internet Mail?
(a) **Inbox** (b) Server (c) Trash
(d) Drop Box (e) One Drive
34. What is a cursor?
(a) It is an indicator
(b) It shows the position on a computer monitor
(c) Cursor is Latin for 'runner'.
(d) Both 1 and 2
(e) **All of the above**
35. Which among the following is not legitimate type of computer virus??
(a) Boot Virus (b) File infector Virus
(c) Resident Virus (d) **Hangout Virus**
(e) Macro Virus
36. 30,000 bytes is equal to
(a) **30 KB** (b) 3 MB (c) 3 GB
(d) 3 TB (e) None of these
37. The main folder on a storage device is called
(a) Platform (b) Interface (c) **Root Directory**
(d) Device Driver (e) None of these
38. **ISDN stands for**
(a) Integral Service Dynamic Network
(b) International Subscriber Dialup Network
(c) International Service Digital Network
(d) **Integrated Service Digital Network**
(e) None of these



39. Which technology is used by cell phones to access the internet?
(a) Cloud computing (b) Neural Networks
(c) XML language (d) **micro browser software**
(e) None of the above
40. Which of the following scrambles a message by applying a secret code?
(a) Audits (b) **Encryption** (c) UPS
(d) Firewalls (e) Encapsulation
41. What type of monitoring file is commonly used on and accepted from Internet sites?
(a) Smartware (b) Phishes (c) **Cookies**
(d) Trojans (e) None of the above
42. The software that secretly collects information about the web client's internet habits?
(a) Detectware (b) Spam (c) **Spyware**
(d) Pharming (e) All of the above
43. Which register is used as a working area in CPU?
(a) Program counter (b) Instruction registers
(c) Instruction decoder
(d) Parity generator (e) **Accumulator**
44. Which of the following is the valid subnet mask for class B IP Address?
(a) 251.254.25.5 (b) **255.255.0.0**
(c) 155.151.12.9 (d) 255.0.0.0
(e) 255.255.255.0
45. Repeaters function in which layer?
(a) **Physical layer** (b) Data link layer
(c) Network layer (d) Both (a) and (b)
(e) Session layer
46. Name the input device from the given options, that cannot be used to work in MS Office?
(a) Scanner (b) Mouse (c) Keyboard
(d) **Joy stick** (e) All of the above
47. Select the odd one out :
(a) Interpreter (b) **operating system**
(c) Compiler (d) Assembler
(e) both (a) and (d)
48. Name the first widespread computer virus for MS-DOS?
(a) **Brain** (b) Handshake (c) Code Red
(d) Melissa (e) Sasser
49. What is ICMP (Internet Control Message Protocol)?
(a) a protocol that manages memory
(b) a protocol used to monitor computers
(c) **a protocol that handles error and control messages**
(d) both (a) and (b) (e) None of these
50. What is Loading Operating System into main memory called?
(a) Printing (b) Saving (c) Storing
(d) Staring (e) **Bootting**
51. What is a group of computers and associated devices that share a common communications line or wireless link to a server within a small geographic area are called?
(a) **LAN** (b) WAN (c) MAN
(d) both (a) and (b) (e) None of these
52. _____ is created when two tables are joined on attributes that are neither primary keys nor foreign keys.
(a) Relation (b) Cardinality (c) **Spurious tuple**
(d) Candidate Key (e) None of the above
53. What does SQL stand for?
(a) **Structured Query Language**
(b) Structured Questioning Logistics
(c) Simplified Query Logic
(d) Simple Questioning Language
(e) Structured Query Logic
54. From where to where is a multicast message sent?
(a) From one source to one destination
(b) From multiple source to multiple destination
(c) From multiple sources to one destination
(d) **From one source to multiple destinations**
(e) None of the above
55. Using the direct broadcast address,
(a) a host sends a packet to all other host on the network.
(b) **a router sends a packet to all other hosts on the network.**
(c) a host sends a packet to a specific host on the network.
(d) a host sends a packet to all routers on the network.
(e) none of the above
56. In computing, a WYSIWYG editor is a system. What does WYSIWYG stands for?
(a) **what you see is what you get**
(b) when you see is where you get
(c) when you see is what you get
(d) where you see is when you get
(e) None of the above
57. What is the Global Access shortcut key for Opening a new database in MS Access?
(a) Cntrl+A (b) Cntrl+F (c) Cntrl+S
(d) Cntrl+O (e) **Cntrl+N**
58. What is the latest version of MS Office available?
(a) **Office 2016** (b) Office 10 (c) Office 300
(d) Office 250 (e) None of the above
59. Which of the following is an operating system?
(a) **Compiler** (b) Plotter (c) **Mac**
(d) Both 1 and 2 (e) All of the above
60. Which of the following is the name of an application similar to MS Office?
(a) Libre Office (c) Open Office (c) Neo Office
(d) Free Office (e) **All of the above**
61. What is the full form of UNIVAC?
(a) **Universal Automatic Computer**
(b) Universal Array Computer
(c) Unique Automatic Computer
(d) Unvalued Automatic Computer
(e) None of these
62. The process of converting analog signals into digital signals so they can be processed by a receiving computer is referred to as
(a) **Modulation** (b) Demodulation
(c) Synchronizing (d) Digitizing (e) Transmission

64. Which of the following memory has stored data in large number?
 (a) RAM (b) ROM (c) Cache memory
 (d) Hard Disk (e) None of these
65. Generally, web address is located by
 (a) Hyperlink (b) HTTP (c) URL
 (d) Locator (e) Browser
66. Which of the following is more than TB ?
 (a) MB (b) KB (c) PB
 (d) Bit (e) Bytes
67. A web address is a unique name that identifies a specific _____ on the internet.
 (a) URL (b) HTML (c) CSS
 (d) Website (e) None of these
68. If you wish to extend the length of the network without having the signal degrade, you would use a
 (a) Gateway (b) Router (c) Modem
 (d) Repeater (e) Resonator
69. The _____ button on the Quick Access Toolbar allows you to cancel your recent commands or activities.
 (a) Search (b) Cut (c) Undo
 (d) Redo
70. Which of the following is not a binary number?
 (a) 110010 (b) 201020 (c) 101010
 (d) 100001 (e) 1011101
71. Which of the following is a base of hexadecimal number?
 (a) 8 (b) 2 (c) 10
 (d) 16 (e) 24
72. A web address is a unique name that identifies a specific _____ on the internet.
 (a) URL (b) HTML (c) CSS
 (d) Website (e) None of these
73. What do you call the programs that are used to find out possible faults and their causes?
 (a) Operating system extensions (b) Cookies
 (c) Diagnostic software (d) Boot diskettes
 (e) None of the above
74. What is Adwords ?
 (a) Advertising Service by Microsoft
 (b) Advanced Search Engine
 (c) Advertising Service by Google
 (d) Automatic words Search Engine by Yahoo
 (e) Advertising Service by Yahoo
75. Given the following URL - <http://www.example.com:80/path/to/myfile.html>, here, 'www.example.com', ':80' stand for _____ and _____ respectively.
 (a) IP and source (b) Domain Name and Port
 (c) File name and Path (d) Path and Port
 (e) IP and Locator
74. Which of the following is a recent version of operating systems?
 (a) Windows XP (b) Windows 7 Basic
 (c) Windows 8 (d) Windows 10
 (e) Windows 2013
75. What is the full form of SMTP?
 (a) Swift Mail Transmission Program
 (b) Simple Mail Transfer Protocol
 (c) Swift Mail Transfer Program
 (d) Spam Mail Trash Program
 (e) None of these
76. A high speed device used in CPU for temporary storage during processing is called
 (a) Register (b) Bus (c) Compiler
 (d) Translator (e) Bus
77. Which of the following is used for establishing connection to other document or locations within a website?
 (a) Hyperlink (b) Web link (c) CSS
 (d) Java query (e) HTML Link
78. When a computer is turned on, where does it get the first instructions that it loads into RAM?
 (a) From RAM (b) From ROM
 (c) From the Hard Disk
 (d) From a CD (e) None of these
79. _____ is designed to communicate instructions to a machine, particularly a computer. It can be used to create programs to control the behavior of a machine or to express algorithms.
 (a) PROM (b) Programming language
 (c) Microcontrollers (d) EPROM
 (e) None of the above
80. Which of the following groups contains all graphical file extensions?
 (a) JPG, GIF, BMP (b) GIF, TCF, WMF
 (c) TCP, JPG, BMP (d) ADP, GIF, PPT
 (e) JPG, CPX, GCM
81. What type of technology allows you to verbally speak with someone over the Internet?
 (a) Wiki (b) Social network
 (c) E-phone (d) VoIP (e) Blog
82. In PowerPoint, what is the function of Alt+N in navigating the ribbon with only the keyboard?
 (a) Open the Transitions tab (b) Open the Home tab
 (c) Open the Insert tab (d) Open the Review tab
 (e) Open the Tell me box
83. What is it called when you are rerouted from your requested internet site to another, undesired site?
 (a) Phishing (b) Pharming (c) Redirecting
 (d) Hijacking (e) Trojan
84. The coding language used to create documents for use on the Internet is _____.
 (a) HTML (b) HSMT (c) HLTM
 (d) All of these (e) HTTP
85. The technique in which an attacker convinces an authorized user to pass classified information to an unauthorized person is called .
 (a) dumpster diving (b) reverse social engineering
 (c) shoulder surfing (d) social engineering
 (e) Cracking
86. In which generation did multi-programming start?
 (a) First generation (b) Second generation
 (c) Third generation
 (d) Fourth generation (e) Fifth generation

87. FORTRAN is a programming language. It is more suitable for which purpose?
 (a) business applications (b) marketing applications
(c) scientific applications
 (d) statically calculative applications
 (e) Commercial application
88. Speed of supercomputer measured in:
 (a) Kbps (b) Mbps **(c) FLOPS**
 (d) MIPS (e) CPS
89. Which of the following is used to open file menu options in current program?
 (a) Ctrl+F (b) Shift+F **(c) Alt+F**
 (d) Alt+Ctrl+F (e) Tab+F
90. By which of the following symbol all Excel formula start?
 (a) % (b) + (c) -
(d) = (e) @
91. Which IEEE standard used to define the specification for a wireless LAN?
 (a) IEEE 802.5 (b) IEEE 802.3 **(c) IEEE 802.11**
 (d) IEEE 802.4 (e) IEEE 802.6
92. Which of the following data functions would you use to hide all rows in a worksheet except those that meet some criteria you specify?
 (a) Sort (b) Query **(c) Custom Filter**
 (d) Conditional Formatting
 (e) Conditional specification
93. How many layers are in the TCP/IP model?
(a) 4 layers (b) 6 layers (c) 5 layers
 (d) 7 layers (e) 3 layers
94. Which of the following is a video format?
 (a) JPEG (b) GIF **(c) FLV**
 (d) PNG (e) BMP
95. Commands at the top of a screen such as File-Edit, Format and Tools to operate and change things are incorporated in _____.
(a) Menu bar (b) Tool bar (c) User friendly
 (d) Word processor (e) Graphics
96. The basic input/output system (BIOS) is stored in:
(a) RAM **(b) ROM** (c) ALU
 (d) Peripherals (e) DRAM
97. Which of the following diagrams graphically represents an inter-relationship among entities in a database?
(a)

Entity-relationship diagram

- (b) Data flow diagram
 (c) Control flow diagram
 (d) Sequence diagram
 (e) Data relationship diagram
98. Which of the following device enabling data transfer between two different networks?
 (a) Bridge (b) Router **(c) Gateway**
 (d) Repeater (e) Modem
99. Which of the following number system has base-8?
 (a) Unary number system (b) Binary number system
(c) Octal number system
 (d) Hexadecimal Number System
 (e) Decimal number system
100. What is a note or an annotation that an author or reviewer adds to a document?
(a) Comment (b) Caption (c) Footer
 (d) Header (e) Underline

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