

Computer Digest KVS & Super TET Exam

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Computer Awareness Digest-2018

Dear readers,

This Digest is a complete docket of important fundamentals and basics of Computer Application. This Digest is useful for KVS and UP Assistant Exam.

Basics & Fundamentals of Computer

Computer: A **computer** is a truly amazing machine that performs a specified sequence of operations as per the set of instructions (known as **programs**) given on a set of data (**input**) to generate desired information (**output**).

A complete computer system consists of four parts:

>	Hardware: Hardware represents the physical and tangible components of the computer.	>	User: The computer operators are known as users.
A	Software: Software is a set of electronic instructions consisting of complex codes (Programs) that make the computer perform tasks.		Data: Consists of raw facts, which the computer stores and reads in the form of numbers.

Hardware :

Input Devices	Processing Devices	Output Devices	Storage Devices
Keyboard	Mother board	Monitor	Magnetic Disk
Microphone	Processor	Printer	Optical Disk
Mouse	RAM	Speaker	Flash Memory
Web camera	ROM		Magnetic Tape
Touch Screen	SMPS		
Light Pen			

The following features characterize this electronic machine:

- ✓ Speed
- ✓ Accuracy
- ✓ Storage and Retrieval
- ✓ Repeated Processing Capabilities
- ✓ Reliability
- ✓ Flexibility
- ✓ Low cost

Software

Utility Software	Application Software	System Software (OS)	
Utility	Utility Text		Multi User
Tools			
Customized	Graphics	DOS	Unix
Software	-		
	Multimedia	Mac-OS	Windows Server
	Language	Windows xp,7,8.1	
	Accounting		



Computer hardware consists of the following components:

1. CPU (Central Processing Unit): CPU is considered as the brain of the computer. It performs all types of data processing operations, stores data, intermediate results and instructions (program). It controls the operation of all parts of computer.

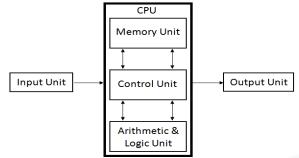


Fig: The relationship between different hardware components

[A] CPU itself has following three components:

- ✓ ALU (Arithmetic Logic Unit): When the control unit encounters an instruction that involves mathematical calculation or decision/logic, it passes the control to the second component, i.e., the arithmetic logic unit (ALU). The ALU includes a group of registers memory locations built directly into the CPU that are used to hold data that are being processed by the current instruction.
- Registers: The register is the smallest high-speed storage area in the CPU. All data must be represented in a register before it can be processed.
- Control Unit: This unit controls the operations of all parts of computer but does not carry out any actual data processing operations

[B] Primary memory consists of mainly two types of memories:

- ✓ Random Access Memory (RAM): RAM is the internal memory of the CPU for storing data, program and program result. It is read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.
- ✓ RAM is volatile, i.e. data stored in it is lost when we switch off the computer or if there is a power failure. Hence a backup uninterruptible power system (UPS) is often used with computers. RAM is small, both in terms of its physical size and in the amount of data it can hold.

There are mainly three types of RAM available:

✓ Dynamic Random Access Memory (DRAM): A type of physical memory used in most personal computers. The term dynamic indicates that the memory must be constantly refreshed2 (reenergized) or it loses its contents. This type of memory is more economical.

- Static Random Access Memory (SRAM): A type of memory that is faster and less volatile than DRAM, but requires more power and is more expensive. The term static is derived from the fact that it does not need to be refreshed like DRAM.
- ✓ Synchronous Dynamic Random Access Memory (SDRAM): A type of DRAM that can run at much higher clock speeds.
- Read Only Memory (ROM): The memory from which we can only read but can not write on it . This type of memory is **non-volatile**. The information is stored permanently in such memories during manufacture. A ROM, stores such instructions that are required to start a computer. This operation is referred to as bootstrap.

There are mainly three types of ROM available:

- ✓ MROM (Masked ROM): The very first ROMs were hard-wired devices that contained a preprogrammed set of data or instructions. These kinds of ROMs are known as masked ROMs which are inexpensive.
- ✓ PROM (Programmable Read only Memory): PROM is read-only memory that can be modified

only once by a user. The user buys a blank PROM and enters the desired contents using a PROM program

 EPROM (Erasable and Programmable Read Only Memory): The EPROM can be erased by exposing it to ultra-violet light for a duration of up to 40 minutes. Usually, an EPROM eraser achieves this function.

✓ EEPROM (Electrically Erasable and Programmable Read Only Memory): The EEPROM is programmed and erased electrically. It can be erased and reprogrammed about ten thousand times. Both erasing and programming take about 4 to 10 ms (milli second).

Memory

A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in computer where data is to be processed and instructions required for processing are stored. The memory is divided into large number of small parts called cells. Each location or cell has a unique address which varies from zero to memory size minus one.

			Mer	nory
H	Primary Memory			Secondary Memory
Cache Memory Main Memory			 Magnetic Disk(HDD) Optical Disk (CD, DVD,BRD) Flash Memory(Memory card, Pen Drive) 	
Registers	Registers RAM		ROM	
	SRAM	DRAM	PROM	
			EPROM	
			EEPROM	

Memory is primarily of three types

- Cache Memory: It is a very high speed semiconductor memory which can speed up CPU. It acts as a buffer between the CPU and main memory.
- Primary Memory/Main Memory: Primary memory holds only those data and instructions on which computer is currently working. It has limited capacity and data is lost when power is switched off.
- Secondary Memory: This type of memory is also known as external memory or non-volatile. It is slower than main memory. These are used for storing data/Information permanently.
- 2. Secondary Storage (External Storage Devices) : Floppy diskettes, hard disk, tapes and optical disks come under the category of external storage devices or ancillary storage devices. These devices are very sensitive to environmental conditions (humidity and temperature) as well as to external magnetic fields and need to be stored carefully.
 - ✓ Floppy Disk : Floppy disks are primarily used on PCs. Information on a floppy disk is recorded in the magnetized states of particles of iron oxides evenly placed upon concentric circles known as tracks.
 - ✓ Hard Disk: It is a non-removable enclosed magnetic disk included in most PCs. It contains a stack of metal platters, each coated with iron oxide, that spin on a spindle and the entire unit is encased in a sealed chamber.
 - Magnetic Tape: This is plastic tape, usually made of Mylar that is coated with iron oxide, thereby enabling the introduction (writing); retention (memory) and reading of magnetically recorded information. The best use of tape storage is for data that you do not use very often.
- **3. Peripherals:** Peripheral devices are devices connected to the computer externally. If a peripheral device is disconnected, the computer will still be able to work; only functions performed by this peripheral device will not be available.

Mainly there are following types of peripheral devices:

- **1. Input Devices (How to tell it what to do):** This unit makes link between user and computer. The input devices translate the information into the form understandable by computer.
 - > Keyboard
 - > Mouse
 - Joy Stick
 - > Light pen
 - Track Ball
 - Scanner

- > Digitizer
- > Microphone
- > Magnetic Ink Card Reader (MICR
- > Optical Character Reader (OCR)-
- > Bar Code Reader
- Optical Mark Reader (OMR)





- 2. Output Devices: (How it shows you what it is doing) Output devices translate the computer's output into the form understandable by users.
 - > Monitors
 - > Printer

Language Processors:

- Assembler: This language processor converts the program written in assembly language into machine language.
 Interpreter: This language processor converts a HLL(High Level Language) program into machine language by converting and executing it line by line.
- ✓ **Compiler:**-It also converts the HLL program into machine language but the conversion manner is different. It converts the entire HLL program in one go, and reports all the errors of the program along with the line numbers.

Classification of Computers:

Computers can be broadly classified by their speed and computing power:

Sr. No.	Туре	Specifications
1	PC (Personal Computer)	It is a single user computer system having moderately powerful microprocessor.
2	WorkStation	It is also a single user computer system which is similar to personal computer but have more powerful microprocessor.
3	Mini Computer	It is a multi-user computer system which is capable of supporting hundreds of users simultaneously. Software technology is different from minicomputer.
4	Main Frame	It is a multi-user computer system which is capable of supporting hundreds of users simultaneously. Software technology is different from minicomputer.
5	Supercomputer	It is an extremely fast computer which can execute hundreds of millions of instructions per second.

Following are the main memory storage units:

S.No.	Unit	Description
1	Bit(Binary	A binary digit is logical 0 and 1 representing a passive or an active state of a
	Digit)	component in an electric circuit.
2	Nibble	A group of 4 bits is called nibble .
3	Byte	A group of 8 bits is called byte . A byte is the smallest unit which can represent a
		data item or a character. (1 byte = 8 bits)
4	Word	A computer word, like a byte, is a group of fixed number of bits processed as a unit which varies from computer to computer but is fixed for each computer. The length of a computer word is called word-size or word length and it may be as small as 8 bits or may be as long as 96 bits. A computer stores the information in the form of computer words.

Few higher storage units are following:

S.No.	Unit	Description
1	Kilobyte (KB)	1 KB = 1024 Bytes
2	Megabyte(MB)	1 MB = 1024 KB
3	GigaByte (GB)	1 GB = 1024 MB
4	TeraByte (TB	1 TB = 1024 GB
5.	PetaByte (PB)	1 PB = 1024 TB

Software



Software: software represents the set of programs that govern the operation of a computer system and make the hardware run. **There are two types of software**

- System Software: The system software is collection of programs designed to operate, control, and extend the processing capabilities of the computer itself. System software are generally prepared by computer manufactures. System software serves as the interface between hardware and the end users. Examples: Operating System, Compilers, Interpreter, Assembler etc.
- > **Application Software:** It is the set of programs necessary to carry out operations for a specified application.

Application software can subdivide into three categories:

- > Packages
- > Utilities
- Customized Software

Following are the main five generations of computers:

S. No.	Generation & Description
1	First Generation (1946-1959) Vacuum tube based
2	Second Generation (1959-1965) Transistor based
3	Third Generation (1965-1971) Integrated Circuit based
4	Fourth Generation (1971-1980) VLSI microprocessor based
5	Fifth Generation (1980-onwards) ULSI microprocessor based

Boot: When computer starts, the operating system is first loaded (as it is essential for running all other programs), this process is known as booting.

Motherboard: The motherboard serves as a single platform to connect all of the parts of a computer together. A motherboard connects CPU, memory, hard drives, optical drives, video card, sound card, and other ports and expansion cards directly or via cables. It can be considered as the backbone of a computer. **Combinational Circuit:** It consist of AND,OR,

NOT,NAND,NOR Gate. Output will depend on input and there is no time gap between input and output There are different type of combination circuit used for different purpose. **Multiplexer**:- It has multiple input and Single output. Multiplexer may be of different type like 4 × 1 MUX,8×1 MUX,16×1 MUX etc.

De Multiplexer:- It perform opposite function of Multiplexer. It has single input line and multiple output line. $n \times 2^{N}$.

Decoder:- It is use to convert one code system to anther like Binary to Octal digit or Binary to Hexadecimal digit.

Adder:- Adder is use to add bits Adder is of to type Half adder and full Adder. Half Adder is use to add two bits and full Adder is use to add three bits.

Encoder : It perform opposite function of Decoder.

Software categories

- > Freeware
- > Shareware
- Commercial
- Private
- > Open Source
- > Proprietary

Number System

When we type some letters or words, the computer translates them in numbers as computers can understand only numbers. A computer can understand positional number system where there are only a few symbols called digits and these symbols represent different values depending on the position they occupy in the number.

A value of each digit in a number can be determined using

- ✓ The digit
- ✓ The position of the digit in the number
- ✓ The base of the number system (where base is defined as the total number of digits available in the number system).
- 1. Decimal Number System: The number system that we use in our day-to-day life is the decimal number system. Decimal number system has base 10 as it uses 10 digits from 0 to 9. In decimal number system, the successive positions to the left of the decimal point represent units, tens, hundreds, thousands and so on.

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- Binary Number System: Uses two digits, 0 and 1, also called base 2 number system. Each position in a binary number represents a 0 power of the base (2). Last position in a binary number represents a x power of the base (2).
- **3.** Octal Number System: Uses eight digits, 0,1,2,3,4,5,6,7, also called base 8 number system, Each position in an octal number represents a 0 power of the base (8).
- **4.** Hexadecimal Number System: Uses 10 digits and 6 letters, 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F. Letters represents numbers starting from 10. A = 10. B = 11, C = 12, D = 13, E = 14, F = 15. Also called base 16 number system .Each position in a hexadecimal number represents a 0 power of the base (16).

DBMS – Data Base Management System

DBMS: DBMS is the acronym of Data **B**ase **M**anagement **S**ystem. 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.

Keys in DBMS:

super key of an entity set is a set of one or more attributes whose values uniquely determine each entity.

candidate key of an entity set is a set of fields from which primary key can be selected. It is an attribute or a set of attributes that can act as a primary key for a table to uniquely identify each record in a table.

Primary key is a candidate key that is most appropriate to become main key of the table. It is a key that uniquely identifies each record in the table

LOGIC GATES

Logic gate : is an elementary building block of a digital circuit. Most logic gates have two inputs and one output. At any given moment, every terminal is in one of the two binary conditions low (0) or high (1)

There are seven basic logic gates: AND, OR, XOR, NOT, NAND, NOR<mark>, XNOR</mark>

Networking

Network: Computer Networks means interconnected set of autonomous system that permit distributed processing to information.

- ✓ Sender Computer
- ✓ Sender equipment (Modem)
- Five components: ✓ Receiver Equipment(Modem)
 - ✓ Receiver Computer

geographical area.

Wide Area Network (WAN): A wide Area

Technology, provides **no limit** of distance.

Network (WAN) is a group Communication

✓ Communication Channel (Telephone Cables)

Classified on the basis of Geographical Coverage: connectivity within a campus or small

Local Area Network (LAN): A local area network is relatively smaller and privately owned network with the maximum span of 10 km.

Metropolitan Area Network (MAN) : MAN is defined for less than 50 Km and provides regional

Types of Network

- 1. **Point to Point Network**: When a packet is sent from one router to another intermediate routers, the entire packet is stored at each intermediate router, stored there till the output line is free and then forwarded. A subnet using this principle is called **point to point** or **packet switched network**.
- 2. **Broadcast Networks:** Broadcast networks have a single communication channel that is shared by all the machines on the network.

Transmission Media

- Network Cables
- > Distributors

- Repeaters
- Bridge

- > Routers
- Internal Network Cards

- > External Network Cards
- Universal Serial Bus (USB)
- Modem (Modulator –DE Modulator)

Operating System:-

An Operating system is a program, which acts as an interface between a user and the hardware.

Characteristics of Operating System:

- ✓ Memory Management
- ✓ Processor Management
- ✓ Device Management
- ✓ File Management
- ✓ Security
- ✓ Job accounting

- ✓ Control over system performance
- ✓ Interaction with the operators
- ✓ Error-detecting aids
- ✓ Coordination between other software and users

MS - Window

MS-Windows is a GUI based operating system. In Windows Operating system multiple applications can be simultaneously run in different windows.

- In MS-Windows, the screen upon which icons, windows, too are displayed is known as desktop.
- An icon is a graphic symbol that represents a window element like, file, folder, or shortcut.
- Loading up of operating system files into the computer's memory in called **booting up**.
- The taskbar is a bar, which is usually located at the bottom of the screen.
- My computer is helpful for viewing the contents of a single folder or drive.
- Windows Explorer is another way of seeing what is on your computer. Windows Explorer shows the computer's contents as a hierarchy.
- **File:** A program or document stored on a disk.

- Toolbar: A set of button you click to perform common tasks.
- A folder is a location in which you can store files and other folders.
- To create a new folder, File—New—Folder commands are clicked in My Computer windows.
- To find files or folders, Start---Find----Files or Folder commands are clicked.
- To create a **shortcut** to a file, firstly select the file or folder, whose shortcut is to be created. Then drag the file icon through right mouse button to desired location where shortcut to be placed, and then select create shortcut(s).
- To shut down the computer, Start—Shut Down commands are clicked.

MS-Word

- ✓ A word processor is a package that processes textual matter and creates organized and flawless documents.
- ✓ The world processor offers very useful features like speed, powerful editing and formatting features, permanent storage, Graphics, object linking and embedding, spell check and mail merge etc.
- ✓ The word processor automatically fits the typed text within the specified left and right margins. This feature is called word wrapping.
- ✓ Margins can be four type viz. left, right, top and bottom.
- ✓ The distance between text boundaries and page margins is called indent. The indent can be positive, negative or hanging indent.
- ✓ The text layout
- ✓ In Word, paragraphs can be formatted through Paragraph option of Format menu and the

borders can be applied through Borders and shading option of Format menu.

- ✓ The page formatting in Word can be controlled through Page Setup ... option of File menu. The header and footer can be created and formatted using Header and Footer option of the view menu.
- ✓ In word, the document can either be printed through print button of standard toolbar or through the Print.. option of **File** menu. The help is available in Word through the Help menu.
- ✓ In word, spelling and grammar can be checked either through the spelling and Grammar option of Tools menu.
- ✓ The Autocorrect feature of Word converts shorthand into longer strings. You can create your own Autocorrect entries by clicking to Autocorrect command to Tools menu.



- ✓ Tables can be inserted in a Word document through Table button of Standard toolbar and can be manipulated through the table drop menu.
- ✓ In MS-Word, the mail merge involves two files Main document and data source file to produce
- the merged document. The main document and data source can handled through Mail Merge option of Tools menu.

Shortcuts

Shortcut	Description
Ctrl+W	Close the active window / document
Ctrl+Z	Undo an action
Ctrl+Y	Redo the last action or repeat an action
Ctrl+S	Save a document
Ctrl+P	Print a document
Ctrl+K	Insert a hyperlink.
Alt+Right.	Arrow Go forward one page.
Ctrl+C	Copy selected text or graphics to the Office Clipboard.
Ctrl+V	Paste the most recent addition to the Office Clipboard.
Ctrl+Shift+A	Format all letters as capitals.
Ctrl+B	Applies or removes bold formatting.
Ctrl+I	Applies or removes italic formatting.
Ctrl+=	Apply subscript formatting (automatic spacing).
F1	Open Help
F4	Repeat the last action performed(Word 2000+)
F5	Open the Find, Replace, and Go To window in Microsoft Word
F7	Spellcheck and grammar check selected text or document
F12	Save As

Some of the valid file names are as follows:

Type of File	File name and Extension
Notepad File	Type.txt
Paintbrush File	Painting.bmp
Word	Document.doc
Excel	Book.xls
PowerPoint	Presentation.ppt
Database	Db1.mdb
Executable	Game.exe

MS-EXCEL

- ✓ A spreadsheet is a software tool that lets one enter, calculate, manipulate and analyze set of numbers.
- ✓ A Worksheet is a grid of cells made up of horizontal rows and vertical columns.
- ✓ A workbook is a group of worksheets.
- Three types of data can be entered in a worksheet
 (i) number (ii) Text (iii) Formulas.
- ✓ Cell can be referenced in three ways (i) relative
 (ii) absolute (iii) mixed
- ✓ A cell can be edited either by overwriting or by partially modifying the cell contents.
- ✓ A **range** can selected using mouse or keyboard.
- ✓ A range can be either through copy and paste operations or by dragging the fill handle.

- ✓ A range can be moved either through cut and paste operations or by dragging the range border.
- ✓ A range can be cleared through Edit--Clear command.
- ✓ To erase everything from a worksheet ,select all the cells in the worksheet and then use Edit— Clear—All.
- ✓ To save a workbook use **File- Save** command.
- ✓ To open a workbook use **File—Open** command.
- ✓ To insert cells, rows or columns in worksheet, use Insert---Cells----, Insert-----Rows or Insert-----Column command respectively.
- ✓ General arrangement of data is known as formatting.
- ✓ Formatting does not affect the actual cell value only the appearance change.



- ✓ Formatting is performed in MS-Excel through options available in Format menu.
- ✓ Charts are the pictorial representation of worksheet data.
- Various chart types in MS- Excel are area chart, column chart, bar chart, line chart, pie chart, XY(Scatter) chart.
- ✓ Chart in MS-Excel saved in two ways : (i) embedded chart (ii) chart sheet
- Embedded chart is a chart object that is placed on a worksheet and saved with that work sheet.
- ✓ Chart sheet is a sheet in workbook that contains only a chart.
- ✓ Charts are created using chart wizard.

Powerpoint

- ✓ The application software that can create professional looking visual aids is called Presentation Graphics Software.
- ✓ MS-PowerPoint can be started by clicking at Start—Program---Microsoft PowerPoint.
- ✓ A slide can contain one or more of these components: Titles, Graphs, Drawing objects, ClipArt and Pictures.
- ✓ The slide components that are used for reference are: Handouts, Notes ,Outlines.
- A new presentation can be created through one of these methods:(i) Auto content Wizard (ii)
 Design Templates (iii) Sample Presentation and (iv) Blank Presentation
- ✓ A new side can be added by either clicking at Common Tasks options of Formatting toolbar and then selecting New Slide option, by clicking at Insert menu's New Slide option.
- ✓ A presentation in PowerPoint can viewed in any of these views: Normal, Outline, Slide, Slide Sorter, Slide Show and Notes Page View.
- ✓ To apply new design to slides, click either at Apply Design Template option of Common Tasks options of Formatting toolbar, or at Format

- menu's Apply Design Template option or ever from the shortcut menu.
- ✓ A color scheme is a combination of various colors used for text and other presentation elements.
- ✓ A color scheme can be changed by clicking at Slide Color Scheme option of Format menu.
- ✓ Background color can be changed by clicking at Format----Background command or even through slide's shortcut menu.
- ✓ You can change text font and style by using Format---Font command.
- Header and Footer information can be viewed and changed by clicking at View---Header and Footer option.
- ✓ The slide ---shorter view in useful for viewing the slides in miniature forms and for rearranging them.
- ✓ Movies (Vedio) & Sound can be inserted by using Insert—Movies & Sounds command.
- While creating slide shows you can add transitions to slides by using Slide Show --- Slide Transition command.
- To add animation, you can use Slide **Show-----Custom** Animation commands.

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 also known as **"network of networks"** that consists of millions of private, public, academic, business, and government networks.

Various Applications of Internet are:

- ✓ Exchange messages using e-mail (Electronic mail).
- ✓ Transfer files as well as software.
- ✓ Browse through information on any topic on web.
- ✓ Communicate in real time (chat) with others connected to the Internet.

- ✓ Search databases of government, individuals and organizations.
- ✓ Read news available from leading news groups.
- ✓ Send or receive animation and picture files from distant places.
- ✓ Set up a site with information about your company's products and services.
- The **World Wide Web** commonly known as the Web or www developed founded by **Tim Berners Lee** in 1989, is a system of interlinked hypertext documents that are accessed via the Internet. These multimedia pages are ever-changing.
- 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.





Various features of a Web Browser are:

- ✓ Menu bar: The menu bar, located at the very top of the screen, can be accessed using the mouse. Actions that are in black can be performed, while actions that cannot be performed will be in gray or lightened.
- Tool bar: The tool bar is located at the top of the browser; it contains navigational buttons for the Web. Basic functions of these buttons include:

<u>Command</u>	Function
Home	Opens or returns to starting page
Back	Takes you to the previous page
Forward	Takes you to the next page
Print	Prints current page
Stop	Stops loading a page
Reload	Refresh/redisplays current page
Search	Accesses search engine

- Location bar: The location bar, below the tool bar, is a box labelled "Location," "GoTo," or "Address." You can type in a site's address, and press the Return or Enter key to open the site.
- ✓ Status bar: The status bar is located at the very bottom of the browser window. You can watch the progress of a web page download to determine if the host computer has been contacted and text and images are being downloaded.
- ✓ Scroll bar: The scroll bar is the vertical bar located on the right of the browser window. You can scroll up and down a web page by placing the cursor on the slider control and holding down the mouse button.
- ✓ A **website** is a set of related web pages served from a single web domain.
- ✓ The Uniform Resource Locator, abbreviated as URL is the Address for web sites. Most of them begin with http (Hyper Text Transfer Protocol), followed by a colon and two slashes.. In most web browsers, the URL of a web page is displayed on top inside an address bar. An example of a typical URL would be "http://www.gradestack.com".
- ✓ A Home page, index page, or main page is a page on a website. A home page usually refers to:
- ✓ A Hyperlink is a reference to data that the reader can directly follow either by clicking or by hovering or that is followed automatically.
- ✓ **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 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. The first email was sent by Ray Tomlinson to himself in 1971.
- CC (Carbon Copy) in e mail indicates those who are to receive a copy of a message addressed primarily to another. The list of CCed 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.
- ✓ Hotmail, a free e-mail service provided by Microsoft which was established in 1995 was co founded by an Indian American entrepreneur Sabeer Bhatia along with Jack Smith in July of 1996.
- ✓ 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.
- ✓ Top-level domain: Each part of a domain name contains certain information. The first field is the host name, identifying a single computer or organization. The last field is the top-level domain, describing the type of organization and occasionally country of origin associated with the address. For e.g. .com Commercial, .edu Educational

Computer Viruses:

A virus is a parasitic program that infects another legitimate program, which is sometimes called the host. To infect the host program, the virus modifies the host so that it contains a copy of the virus.

Boot sector viruses: A boot sector virus infects the boot record of a hard disk. The virus allows the actual boot sector data to be read as through a normal start-up were occurring.

Cluster viruses: If any program is run from the infected disk, the program causes the virus also to run. This technique creates the illusion that the virus has infected every program on the disk.



Worms: A worm is a program whose purpose is to duplicate itself.

Bombs: This type of virus hides on the user's disk and waits for a specific event to occur before running.

Trojan Horses: A Trojan Horses is a malicious program that appears to be friendly. Because Trojan Horses do not make duplicates of themselves on the victim's disk. They are not technically viruses.

Stealth Viruses: These viruses take up residence in the computer's memory, making them hard to detect.

Micro Viruses: A macro virus is designed to infect a specific type of document file, such as Microsoft Word or Microsoft Excel files. These types of documents can include macros, which are small programs that execute commands.

Commonly Used Computer Terms

- ✓ Abort: To stop a program or function before it has finished.
- Algorithm: A set of instructions that provides a solution to a given problem.
- ✓ Animation: A simulation of movement created by displaying a series of pictures, or frames. For example, cartoons on television.
- ✓ ANSI: American National Standards Institute, a powerful industry association of USA, promoting Programming language standards.
- ✓ Antivirus: Program A utility that searches a hard disk for viruses and removes any, that is found.
- ✓ Architecture: A design. It can refer to either hardware or software or to a combination of hardware and software. The architecture of a system defines its broad outlines.
- ✓ ASCII: American Standard Code for Information Inter change. This is a seven/eight bit code widely used in computers for the transfer of data.
- ✓ Bandwidth: The amount of data that can be transmitted in a fixed amount of time. It is usually expressed in bits per second (bps) or bytes per second.
- Bit: The smallest unit of information in computer system. Bit is short for binary digit; either a "1" or a "0".
- ✓ Boot: The process of getting the computer started.
- ✓ Byte: A byte is made up of 8 bits. The amount of memory it takes to store a single character.
- Cache: A separate area of Primary Memory (RAM) where the computer stores a copy of frequently used information for quick access. This is meant to speed up the operation of the hard disk.
- ✓ CD-ROM: Compact Disk-Read Only Memory. This is a permanent storage device used to store large quantities of information that need not be changed.
- ✓ CGA: Color Graphics Adapter. Low-resolution screen (640x200 pixels) with color capability.
- Character: A number, letter, symbol, or punctuation mark.
- ✓ Chip: A small piece of silicon containing thousands or millions of electrical elements. Also called an Integrated Circuit (IC).

- ✓ Compatible: The ability of one device or program to work with another device or program. For example, a printer and a computer are said to be compatible if they can be connected to each other.
- Conventional Memory: The first 640K of electronic Memory (RAM) in a computer used to run OS and applications.
- ✓ Debug: In computer related systems, fixing software related problem is known as debugging.
- Digitize To scan a piece of artwork in very fine detail and store it in a form that computer understands.
- ✓ DOS: It stands for Disk Operating System. It is a single user operating system.
- ✓ **DVD:** Digital Versatile Disc or Digital Video Disc
- Dynamic: Refers to actions that take place at the moment they are needed rather than in advance.
- ✓ **EDP:** Electronic Data Processing.
- E-Mail: Electronic Mail. A facility to send electronic messages to another person on a computer network.
- End-User: The end user is the individual who uses the product after it has been fully developed and marketed.
- ✓ EPROM: Erasable Programmable Read Only Memory. A type of ROM that can be programmed or reprogrammed usually by exposing a normally covered sector to UV-Light.
- ✓ Extended Memory: Memory in addition to conventional memory used to run and manage applications; together with expanded memory, it helps PCs to address increased amounts of data in memory.
- ✓ Fax/Facsimile: A way of transmitting copies of documents over telephone lines. Fax is short for Facsimile.
- ✓ Gigabyte: Abbreviated as GB, is equal to 1024 MB. GUI Graphical User Interface. A user interface that works visually and is based on the selection of actions using a mouse or a similar pointing device to click on icons or to pick options from menus; see also icon.
- ✓ Hertz: A unit of frequency that means Cycles per Second.
- High Density: The amount of information a disk can hold. High Density disks hold more information than Double Density disks.

- ✓ Hypertext: A method of presenting information so the user can view it in a non-sequential way, regardless of how the topics were originally arranged. It has now evolved as a flexible software technology to create electronic books provides fast and flexible access to search criteria and provides quick access to information in large documents.
- ✓ HTML: Hyper Text Markup Language. A markup or structuring language used to describe Web and Intranet documents. It is used to define structure, appearance and placement of HTML elements including, fonts, graphics, text, hypertext links to other sites and many more details.
- ✓ IBM: International Business Machines, a USA based multinational Company.
- Icon: A graphical screen element that executes one or more commands when selected with a mouse or other pointing device
- ✓ IDE: Integrated Device Electronics, a standard used for connecting hard drive to a computer. IDE hard drives are very common and relatively inexpensive.
- ✓ Intel: The manufacturer of the most popular microprocessors or CPUs.
- ✓ Intelligent: Printer combining laser, computer and photocopying technology.
- ✓ Internet: The world's largest computer network that links many of the scientific, research and educational computers as well as commercial networks. The internet uses TCP/IP protocols, and computers on Internet can run on any operating system, like, several variations of UNIX, Windows NT, and VMS etc.
- ✓ Intranet: In the most general sense, a private corporate network that uses Internet technology based software and TCP/IP protocol standards. Many companies use intranets for tasks as simple as distributing a company letter and for tasks as complex as posting and updating technical support bulletins to service personnel worldwide. An intranet does not always include permanent connection to Internet.
- ✓ Kilobyte (K, KB) Approximately one thousand characters; actually 1024bytes.
- ✓ LAN An acronym for local area network. A system of PCs that are located relatively near to each other and connected by wire so that individual users can cooperatively process information and share resources; see also WAN.
- Laptop Computer: A portable computer, small enough to be held on a lap,but slightly larger than a notebook computer.
- ✓ LED: Light Emitting Diode. An electronic device that lights up when electricity is passed through it.
- ✓ Light Pen: An input device that allows a user to write on or point to a special pad or the screen of a penbased computer, such as a PDA.
- ✓ Macintosh: A PC based on a Motorola microprocessor employing GUI. Apple Macintosh has been in use since late eighties.



- Macro: A symbol, name, or key that represents a list of commands, actions or keystrokes.
- Math co-processor: Part of the microprocessor; a companion chip designed to perform complex calculations.
- ✓ Megabyte (M, MB): Approximately one million characters; actually 1,048,576 bytes. A measure of memory or storage.
- Megahertz (MHz): A measure of processing speed.
 The higher the value, the faster a computer can work.
- ✓ Microprocessor: A single chip containing all the elements of a computer's CPU.
- ✓ MIPS: Million Instructions Per Seconds, a unit for measuring the speed of a computer.
- Mother Board: The main circuit board of a computer, which carries electrical signals to and from various parts of the computer.
- ✓ Multimedia: A computer system that combines text, graphics, animation, music, voice and video media; may include stereo speakers as an output device.
- ✓ Multiprocessing: It refers to a computer system's ability to support more than one process at the same time. It is also called multitasking.
- ✓ Nibble: Half a byte i.e. 4bits.
- Non-Volatile Memory: This is data storage that does not lose its contents on power off; for example, ROM.
- ✓ Notebook Computer: A portable computer, approximately 8½ by 11 inches, that fits inside a briefcase.
- Numeric keypad: The part of a keyboard that looks like an adding machine, with 10 digits and mathematical operators; usually located on the right side of the keyboard.
- ✓ **Office-Automation:** The use of computer systems to execute a variety of office operations, such as word processing, accounting and Email.
- Parallel Port: An outlet on a computer used to attach a device, such as a printer. A parallel port sends data (bits) down the wire side by side (parallel to each other).
- ✓ Pentium: The fifth generation of microprocessors. The Pentium is 2 to 3 times faster than the 80486, the fourth generation of microprocessors.
- ✓ Peripheral: Any piece of hardware attached to the outside of a computer. Examples are printers and modems.
- ✓ Pixel: Short for "Picture Element". A Pixel is the smallest dot the computer can control on the screen.
- ✓ Portable computer: A small computer that usually runs on batteries. In the categories of portable computers are laptop, notebook, sub-notebook and palmtop.
- Protocol: In networking and communications, the formal specification that defines the procedures to follow when transmitting and receiving data. Protocol defines the format, timing, sequence and error checking used on the network.

- **Resolution:** The size and quantity of dots that make up a printed page, screen or scanned image.
- Runtime: Error An error that occurs during the execution of a program.
- Scanner: An input device used to copy a printed document into a computer's memory in digital form, without requiring manual keying.
- SCSI: Small Computer System Interface. A standard for connecting a hard drive to a computer.
- Serial Port: An outlet on a computer used to attach a device, such as a modem. A serial port sends data (bits) down the wire one at a time (in a series).
- ✓ Service Pack: It is an update to a software version that fixes an existing problem, such as a bug or
- ✓ provides enhancements to the product that will appear in the next version of the product.
- ✓ TCP/IP: Transmission Control Protocol / Internet Protocol is a set of communication protocols that encompass media access, packet transport, session communications, file transfer, e-mail, and terminal

emulation. TCP/IP is supported by a large number of H/W and S/W vendors and is available on many computer systems, from PCs to mainframes.

- ✓ Troubleshoot: To isolate the source of a problem and fix it. In case of computer systems, troubleshoot is usually used when the problem is hardware related.
- ✓ **UNIX**: A multi user operating system.
- ✓ Upgrade: A new version of a software or hardware product designed to replace an older version of the same product.
- ✓ UPS: Uninterruptible Power Supply. It is a power supply that includes a battery to maintain power in the event of a power cut for several minutes to some hours.
- ✓ Utility: A program that performs a very specific task, usually related to managing system resources.

Some expected and important questions of Computer Awareness :

- 1. Vacuum Tube is the inventiongeneration.
 - A. 1st generation
 - B. 2nd gen
 - C. 4th gen
 - $D. \quad 5^{th} \, gen$

Ans: A

In **first Generation** (1940-1956), the first computers used **vacuum tubes** for circuitry and magnetic drums for memory and were often enormous, taking up entire rooms.

- 2. The computer size was very large in ____
 - A. First Generation
 - B. Second Generation
 - C. Third Generation
 - D. Fourth Generation

Ans: A

First generation computers used **1000s of vacuum tubes** that required **lot of space** made them gigantic in size. **Single transistor** could replace 1000 vacuum tubes and a single IC chip replaced **1000s of transistors** made computers smaller and more speedy.

- 3. _____ is responsible for overall control and co-ordination of instruction execution.
- A. CPU
- B. ALU
- C. RAM
- D. Control Unit
- Ans: D

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 , **input** and **output** devices how to respond to a program's instructions.

- 4. Which of the following is the fastest type of computer?
 - A. Mini computer
 - B. Mainframe computer
 - C. Supercomputer
 - D. Digital computer





Ans: C

A **supercomputer** is a computer with great **speed** and **memory**. supercomputer channels all its power into executing a few **programs** as fast as possible.

- 5. Who among the following is the odd one____?
 - A. Mouse
 - B. Scanner
 - C. Printer
 - D. Keyboard

Ans: C

Except Printer (Output device) all are examples of input devices (keyboards, mouse, scanners).

- 6. Which is not a storage device?
 - A. Printer
 - B. CD
 - C. Hard disk
 - D. Floppy Disk

Ans: A

Storage device is a piece of **computer** equipment on which information can be **stored**. But **Printer** is the **External device** that **communicates** with another **digital device** to **print** what a user sees on a **screen**.

- 7. Memory which forgets every thing when you switch off the power is known as_____
 - A. Corrupted
 - B. Volatile
 - C. Non-Volatile
 - D. Non-Corrupted

Ans: B

Non-volatile keeps memory when the computers power is switched off. **Volatile** dumps everything in RAM when the computer **loose** power.

- 8. Physical components that make up your computer are known as_____.
 - A. Software
 - B. Operating Systems
 - C. Hardware
 - D. Web Browsers

Ans: C

The most common **hardware** components are Monitor, Keyboard, Mouse, CPU etc.

9. Which of the following is suitable after you install new drivers?

- A. Shut Down
- B. Restart
- C. Sleep
- D. Hibernate

Ans: B

Restart is suitable after you install new drivers.

- 10. Which of the following cannot be shared?
 - A. Printer
 - B. Scanner
 - C. Plotter
 - D. Mouse

Ans:D



Mouse is a **pointing device** that detects two-dimensional motion relative to a surface. **Mouse** cannot be shared.

- 11. A terabyte comprises_____
 - A. 1025 byte
 - B. 1024 byte
 - C. 1024 bits
 - D. 1024 gigabyte
 - E. None of these

Ans: D

A terabyte (TB) is a measure of computer storage capacity approximately 1,024 gigabytes (GB).

12. What does MICR stand for?

- A. Magnetic Ink character Register
- B. Magnetic Ink Code Reader
- C. Magnetic Ink Code Register
- D. Magnetic Ink character Recognition Ans: D

Magnetic Ink Character Recognition (MICR) is a character-recognition technology used mainly by the banking industry to ease the **processing** and clearance of **cheques** and other documents.

- 13. A ______ is a software program used to view Web pages.
 - A. Site
 - B. Host
 - C. Link
 - D. Browser
 - Ans:D

A browser is a software application used to locate, retrieve and display **content** on the **World Wide Web**, including **Web** pages, **images**, **imag**

- 14. Micro-programming introduced by_____
 - A. John Mauchley
 - B. Maurice Wilkies
 - C. William Shockley
 - D. Blaise pascal

Ans: B

In 1951, **Maurice Wilkies** was developed the concept of **microprogramming** from the realization that the **Central Processing Unit** of a computer could be controlled by a miniature, **highly specialised computer program** in high-speed ROM.

- 15. On color monitor each pixel is composed of _____.
 - A. two mini dots
 - B. five mini dots
 - C. six mini dots
 - D. three mini dots

Ans: D

On **color monitors**, each pixel is actually composed of **three** dots **a red**, **a blue** and **a green** one.

16. Numbers and formulae entered in a cell are called _____.

- A. Labels
- B. Numeric entries
- C. Intersection
- D. Text

Ans:B



When **entering numbers** in a **cell** the spreadsheet interprets the **data** as being numbers, which makes

the use of mathematical formulas on the data possible.**By default** the data recognized as being numbers will be **right justified** in the cell.

- 17. Fax machines are used to send documents through a?
 - A. Telephone line
 - B. Modems
 - C. Co-axial wire
 - D. All of these

Ans:A

Fax is the **telephonic transmission** of scanned printed material normally to a telephone number connected to a printer or other output device.

- 18. Date and time are available on the desktop at_____.
 - A. Keyboard
 - B. Recycle bin
 - C. My computer
 - D. Task bar
 - Ans: D

A **taskbar** is an element of a **graphical user interface**. It shows which programs or applications are running on the device as well as provide links or shortcuts to other programs or places, such a **start menu, notification area** and **clock**.

19. To save an existing file with new name at a new location we should use ______ command .

- A. Save
- B. Save and replace
- C. Save as
- D. New file

Ans: C

Choosing "**Save As**" brings up a prompt to save your work as **a file** with a different name. **Just be sure** to **rename** the file **something new** when you choose "**Save As**" or you will overwrite the current saved version.

20. You can use _____to copy selected text and ______to paste it in a document.

- A. ctrl+c, ctrl+ v
- B. ctrl+ c, ctrl+p
- C. ctrl+ s, ctrl+z
- D. shift+ c, alt+ p

Ans: A

We can use **ctrl+c** to **copy** selected text and **ctrl+v** to **paste** it to the document.

21. A red wavy line under a word indicates that the word_____

- A. Is too long for the line of text
- B. Is not in the dictionary file and therefore might be spelt incorrectly
- C. Is not appropriate for that particular sentence
- D. Is a verb

Ans: B

MS word can check the text for **correctness** and allows you to make **amends**. If there is a **spelling mistake**, the **word** gets **underlined** with a **red color line** indicating the **error**.

22. Windows xp, windows 7, windows 8.1 are known as what?

- A. Processors
- B. Domain names
- C. Modems
- D. Operating system

Ans: D

An **operating system** is system software that manages **computer** hardware and software resources and provides **common services** for computer programs.

- 23. _____ is when the more power-hungry components, such as the monitor and the hard drive are put in idle.
 - A. Hibernation



- B. Power down
- C. Standby mode
- D. The shutdown procedure

Ans: C

When **electronic devices** are receiving power but are not running, they are in **standby mode**. A **computer** in **standby mode** requires a small amount of current called a "**trickle charge**" that keeps the current state of running software saved in the computer's RAM.

24. Video-conferencing requires a microphone, speakers and a _____ attached to your computer.

- A. Mouse
- B. Keyboard
- C. Video camera
- D. Scanner

Ans: C

Video-conferencing is a set of **telecommunication** technologies which allow two or more locations to communicate by simultaneous two-way video and audio transmissions. For a videoconferencing system **video camera**, **computer monitor**, **television**, **projector** are required.

- 25. Which of the following is an operating system?
 - A. Linux
 - B. Debugger
 - C. Mozilla
 - D. Google chrome

Ans: A

Linux is a Unix-like computer operating system assembled under the model of free and open-source software development and distribution.

- 26. What is the base of hexadecimal number system?
 - A. 2
 - B. 8
 - C. 16
 - D. 10

Ans: C

The **hexadecimal numeral system**, is a numeral system made up of 16 symbols (base 16).

27. RTGS stand for____.

- A. Real Time Gross Settlement
- B. Real Time General Settlement
- C. Run Time gross Settlement
- D. Regular Time General Settlement

Ans: A

Real-time gross settlement (RTGS) systems are specialist **funds transfer systems** where transfer of money or securities **takes place** from **one bank** to another on a "**real time**" and on "**gross**" basis.

- 28. What is the name given to the temporary storage area that a web browser uses to store pages and graphics that it has recently opened?
 - A. Niche
 - B. Webspace
 - C. Cache
 - D. Cellar

Ans: C

Images are often stored in a **cache** so the next time you request for that **image** it is obtained locally rather than from the **website**.

- 29. Oracle is an example of _____ application software.
 - A. Database
 - B. Word processing



- C. Project management
- D. Presentation graphics

Ans: A

Database software tools are **primarily** used for **storing**, **modifying**, **extracting** and **searching** for information within a **database**.

- 30. Primary key is a _____?
 - A. Common key
 - B. Unique key
 - C. Input key
 - D. Output key

Ans: B

A **primary key** is a key in **a relational database** that is **unique** for each record. It is a unique identifier, such as a **driver license number**, **telephone number** or **vehicle identification number** (VIN). A relational database must always have one and only **one primary key**.

- 31. Which of the following can be used to select the entire document?
 - A. Ctrl+A
 - B. Alt+F5
 - C. Shift+A

D. Ctrl+K

Ans: A

For **selecting** entire document we use **Ctrl+ A**.

32. Which of the following will you require to hear music on your computer?

- A. Video Card
- B. Sound Card
- C. Mouse
- D. Joy Stick

Ans: B

A sound card is used to generate sound and provides audio output to external devices like speakers and headphones.

33. Father of 'C' programming language

- A. Dennis Ritchie
- B. Prof Jhon Kemeny
- C. Thomas Kurtz
- D. Bill Gates

Ans: A

Dennis Mac Alistair Ritchie was an American computer scientist. He created the C programming language.

- 34. Which of the following is not a method of accessing the web?
 - A. modem
 - B. ISDN
 - C. DSL
 - D. CPU

Ans: D

CPU (central Processing Unit) is a part of the computer. All the others can be used to access the net.

35. Yahoo (www.yahoo.com) is a _____.

- A. Website for Consumers
- B. Portal
- C. Organization that allocates web addresses
- D. Super Computer

Ans: B

Yahoo is one of the **largest portals** in the **world**. A portal is **a website** intended to be a **starting point** for exploring and searching the www.

36. Internet Explorer is a _____.



- A. Web Browser
- B. Graphing Package
- C. News Reader
- D. Any person browsing the net

Ans: A

Internet Explorer (IE) is the most common **web browsers**. **Web Browser** is a program that you use to surf the internet. 37. Disk access times are measured in _____?

- A. minute
- B. Milliseconds
- C. Hours
- D. seconds

Ans: B

Disk access times are measured in milliseconds, often abbreviated as ms.

38. Blaise Pascal has introduced_____?

- A. Adding machine
- B. Abacus
- C. Calculator
- D. difference engine

Ans: A

In 1642, **Balise Pascal** has introduced an **adding machine** that could perform **additions** and **subtractions** directly and multiplication and divisions by repetition.

- 39. Sending an e-mail is similar to _____.
 - A. Petering an event
 - B. Narrating a store
 - C. Writing a letter
 - D. Creating a drawing Ans: C

Creating and sending an e-mail message is in many ways similar to writing a letter without a stamp.

- 40. What is the file extension of MS-Power point ?
 - A. .exe
 - B. .xls
 - C. .ppt
 - D. .pst

Ans: C

.ppt is a **file extension** for a presentation file format used by **Microsoft PowerPoint**, the popular **presentation** software commonly used for office and educational slide shows.