

1

Fundamental

FUNDAMENTAL

- C - Common
- O - Operating
- M - Machine
- P - Program/Purpose
- U - Use of
- T - Technical
- E - Educational
- R - Research

Que.1 Who was the father of the Computer?

Ans. Charles Babbage was father of the Computer.

Que. 2 Who was the first Programmer?

Ans. Lady ada lave lac was the first Programmer.

Que. 3 What is Computer?

Ans. Computer is an Electronic Machine. In which we can feed data,; desire data and find meaningful output from the Computer. It consists different types of electronics parts. It has no minded, but drive from human intelligence. It does not know any language. (**English, Hindi, Punjabi etc.**). Else, machine language.

Machine Language - 0 (Zero) and 1 (One)

0 = off

1 = on

Binary Language

Low level language.

To perform any work, Computer follows the following steps:-

1. Accept data from the user (**Input**).
2. Accept Instructions from the user (**Input**).
3. Convert the data into information according to the given instruction. (**Processing**).
4. Give the result (**Output**).

INPUT

PROCESSING

OUTPUT

On the basis of Input, Computer is classified into three categories-

1. Analog Computer

A Computer, which Accept signals as, input automatically.

For Example-

Speedo Meter

Thermos meter

These type of Computer are mostly used in the field of Automobile engineering and medical to make their related instructions.

2. Digital Computer

A Computer which Accept Alphabets (a to z), digits (0 to 9), and some Special symbols (+, -, *, /) as Input.

These types of Computer mostly used in business.

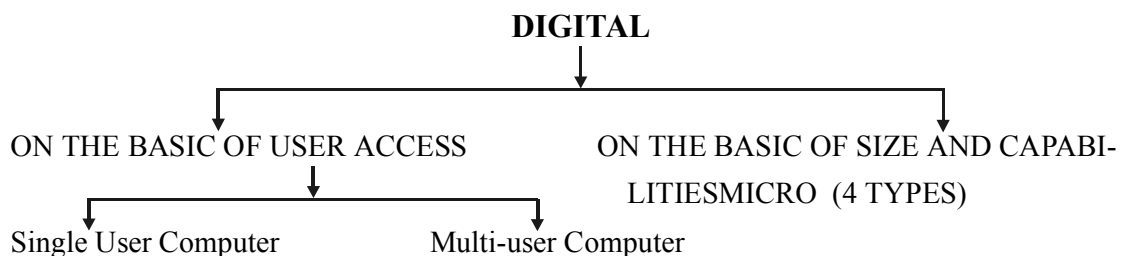
3. Hybrid Computer

A computer, which work like analog as well as digital. It is mostly used to perform complicated job.

Example-

ICU (Intensive Core Unit)

Coal Mines.



ON THE BASIC OF SIZE AND CAPABILITIES:-

1. Micro Computer (Business) :-

Micro Computer or PC Computer are cheaper, smaller, and contains less memory than other computers. Unlike the large computer, only one person generally uses a single microcomputer at a time. It is used in Business.

2. **Mini Computer (Same as Multi-user):-**

These are next step down, being smaller and less expensive, and containing somewhat less memory and processing capabilities. They are usually used in small and medium sized business, and they can serve several users simultaneously. Same as Multi user.

3. **Mainframe Computer (Research) Computer:-**

These Computers are cheaper and not as powerful as super computer. They are used as the traditional computers for a company where many users at separate workstations share the same computer. These types of computer are used in Research/scientist.

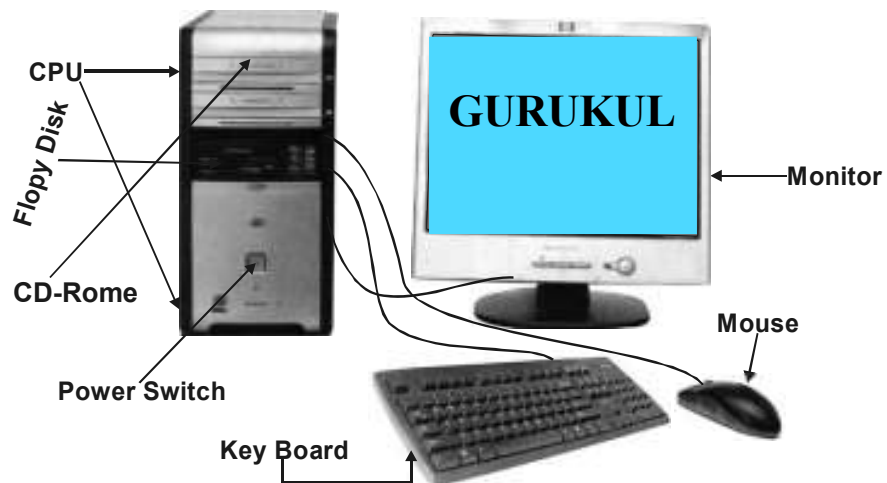
4. **Super Computer**

These computers are the most expensive and most powerful computers they are used where primarily government agencies, scientists, and large corporation must manipulate vast quantities of data.

ON THE BASIC OF USER ACCESS-

Single user Computer-

On a single user computer at a time one person can work or only work can be performed at a time. In this system, one keyboard/mouse and a monitor are attached with a CPU



(Figure No. 1.1)

1. **Multi user computer**

On a multi-user computer at a time more than one user can work or more than one work can be performed at once. In this system more than one terminal (Keyboard / mouse + monitor) are attached with a CPU.

No. Of Terminal are depend on the capacity of CPU

Example.

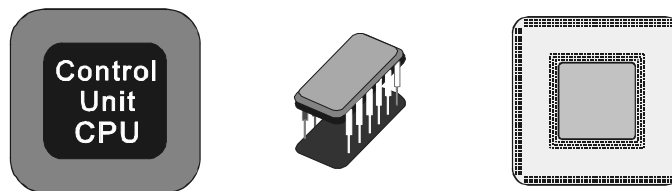


(Figure No. 1.2)

MULTI USER COMPUTER

MICROPROCESSOR OR CPU-

It is a main part of microcomputer. The heart and brain of the computer system responsible for storing the data to be processed in its main memory unit. In microprocessor, control unit and ALU are fused together. In common technology microprocessor is also called CPU (Central processing unit).



(Figure No. 1.3)

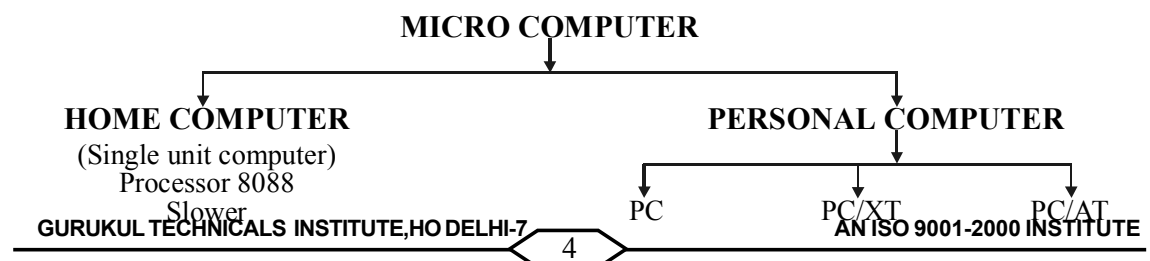
MICRO PROCESSOR OR CPU

ARITHMETIC AND LOGIC UNIT (ALU):-

The Arithmetic and logic unit (ALU) is part of CPU where all mathematical and logical functions are performed. The basic mathematical functions include, subtraction, multiplication and division. Software can combine these four basic math function to perform logarithmic, trigonometric and other mathematical functions. A logic function is one where numbers or conditions are compared to each user, e.g. greater than, less than, equal to, not equal to, greater than or equal to, and less than or equal to.

CONTROL UNIT:-

The control Unit interprets any instruction it receives from memory, directs the sequence of events necessary to execute the instruction, and establishes the timing of these events.



- I. **PC (Personal computer)**
 - (a) Micro Processor-8088.
 - (b) Secondary Storage-Floppy.
 - (c) Memory low- 256KB
 - (d) Slower.

- II. **PC/XT (Personal Computer Extended Technology)**
 - (a) Micro Processor-Same (8088)
 - (b) Storage-Floppy and Hard Disk
 - (c) Memory Increase - 4 MB
 - (d) Faster.

- III. **PC/AT (Personal Computer Advance technology)**
 - (a) Micro Processor-80286, 80386, 80486, 80586.....PIV 1.7GH
 - (b) Storage-Increased. (Floppy Disk, Hard Disk)
 - (c) Memory Increased (128 mb)
 - (d) Faster.

Bytes:- Is the measuring unit of Computer memory.

0, 1=Bit

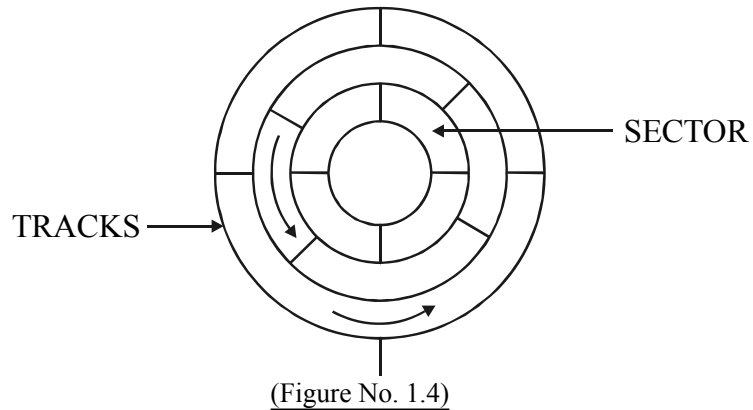
- 8 Bit = 1 Byte
- 1 Byte = 1 Character
- 1024 Byte = 1 Kilo Byte (KB)
- 1024 KB = 1 Mega Byte (MB)
- 1024 MB = 1 Giga Byte (GB)
- 1024 GB = 1 Tera Byte (TB)

STORAGE OF FLOPPY

5.25"	TRACK	SECTOR	BYTE	SIDE	CAPACITY
DSDD	40	9	572	2	360 kb
DSHD	80	15	572	2	1.2 MB

3.5"	TRACK	SECTOR	BYTE	SIDE	CAPACITY
DSDD	40	18	512	2	720 KB
DSDD	80	19	512	2	1.44 MB

Each side of media is divided into tracks. Each track is divided into sectors. Each sector has a fix number of bytes.



FLOPPY DISK-

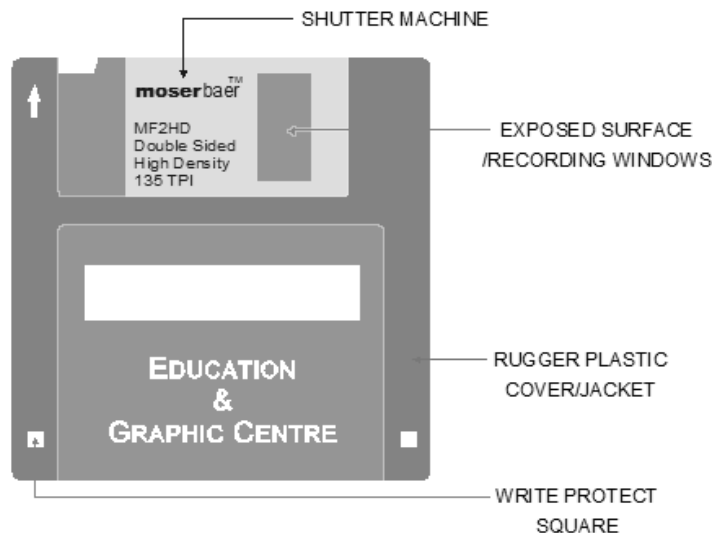
A floppy disk also called simply a diskette, as disk is a small, flexible, mailer disk coated with iron oxide on which data is stored. It is available in two sizes. The 3½" microfloppy, and the 5¼" disks.

The hub ring is where the disk drives (I/O device) hold the disk to rotate it. The elongated read/write window allows the read/write heads of the drive to write data on, or read data from the floppy disk. The small hole next to the hub ring is the Index hole through which the Computer determines the relative position of the disk for Locating data. The cutout on the side of the floppy disk is the writes protect notch. By covering this opening with a piece of tape, data on the disk are protected from being erased or written over.

The 3½" disk has a hard plastic covering and protective metal piece that covers read/write window when the disk is not in use. This additional protection makes the disk safe enough to damage from handing, dust or other contaminants. The 3½" disk is growing in popularity.

(A) 3½" -INCH DISKETTE

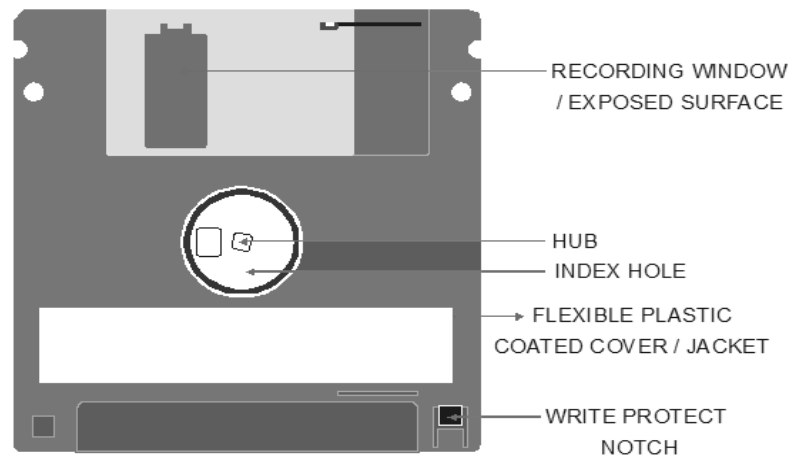
SIDE 1:-



(FIGURE No. 1.5)

(B) 5 1/4" FLOPPY

SIDE 2:-



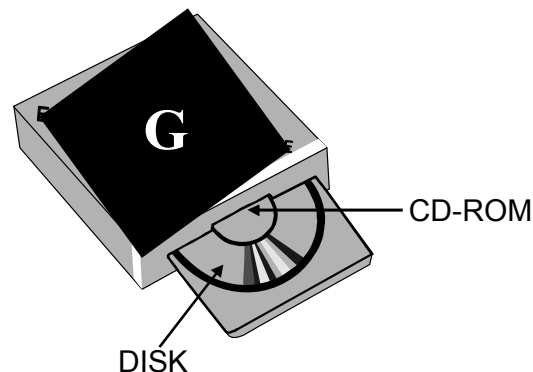
(FIGURE No. 1.6)

Hard Disk-

A hard disk is hard and inflexible and it made from materials such as aluminum instead of mailer. The I/O device that transfers data to and from a hard disk is called a hard disk drive. The hard disk has several advantage over a floppy disk. Its rigid constructions allow it to rotate at 3,600 rpm compared to a floppy disk at 360 rpm. Thus data can be transferred much faster to or from a hard disk because it takes less time to find the storage location. Also because of its hard construction, more data can be placed in a smaller area giving the hard disk more storage capacity than a floppy disk of the same size.

CD-ROM (Compact Disk Rom)-

It is a non-erasable disk and used for storing data permanently. The data can not be moved deleted.



(FIGURE No. 1.7)

COMPACT DISK ROM

MEMORY UNITS-

The memory unit is the place where the programs and instruction or data are stored before and after the processing each character and numeric are stored in a call having M-U its unique address. These are two kinds of memory in MU.

1- Primary Memory (Ram)

2- Secondary Memory (Rom)

RAM (Random Access Memory)

Ram is used for holding the programs & their data while the computer is working with them. The programs can read the data in ram and also change if it is required for this reason it is called read/ write. Ram is volatile, Its contents are lost when the electricity is turned off ram is temporary memory ram has less capacity.

Rom (Read Only Memory)

This memory contains instructions which are permanently stored in to the memory it cannot be changed rom is non-volatile its contents remains same ever when power is switched Off. ROM is permanent memory it has high capacity.

Key Board-

This device is also known as input devices. Keyboard is used to feed the data in to computer as contains **101** or **104** key.



(FIGURE No. 1.8)

KEY BOARD

Monitor-

Computer display useful information on the monitor it is also known as VDU (visual display unit) it is commonly used output devices. It consists of a television like screen having 25 row and 80 columns thus providing 2000 cells on the screen.



(FIGURE No. 1.9)

MONITOR

There are two types of Monitor.

(A) Monochrome Monitor-

In a monochrome monitor display comes in a single color (Black & White) four types of monochrome Monitor.

1. **CGA (Colour graphic adapter)**
2. **MGA (Monochrome graphic adapter)**
3. **VGA (Video graphic adapter)**
4. **HGA (Harculus graphic adapter)**

(B) Colour Monitor-

The Display in color monitor is multi-colored usually 16 or more Color. It is of two types.

1. **S.V.G.A. (Super video graphic adapter)**
2. **M.G.A. Monochrome graphic adapter)**

Type specification and classification of Computer

TYPE OF COMPUTER

- 1- PC-Personal computer
- 2- PC/XT -Personal computer extended technology
- 3- PC/AT -Personal computer advanced technology
- 4- Pentium

SPECIFICATION OF COMPUTER

Types	Speed	Size of database	Up	Configuration
PC	4-8	8 Bit	8088	Drive 5.25"
PC/XT	8-12	8 Bit	8088	Drive 5.25"
PC/AT286	12-25	16 Bit	80286	20 MB HDD
PC/AT 386	25-33	16 Bit	80386	20-120 MB HDD
PC/AT 486	40-100	32 Bit	80486	120 MB HDD
PENTIUM	16-100	64 Bit	Pentium	20-120 MB HDD

SYSTEM UNIT-

It is main physical part of computer which loads the computer and make ready all the part of computer which are attached to System Unit, all the processing part came under it. This unit consists of System Unit.

POWER SUPPLY

It is the part of system unit which helps the user to on\off the switch of the computer it basically takes the electrically and supply

I SMPS (Switch Mode Power Supply)

It is that part of power supply, which avoids or control all fluctuations it work like a stabilizer.

II UPS (Uninterrupted Power supply)

It is that part of power supply which supply power to computer without any interruption in case of power failure it works like on inverters

MOTHER BOARD-

In a personal computer (PC) motherboard is the most important electronics card which contains the microprocessor chip it is a place of the system unit where all the part of the computer are attached to each other.

SLOTS-

Slots are part of the SU (System Unit) which are located on the motherboard and connects all the hardware parts with the system unit There are 3 & 8 slots present on the motherboard.

INTERFACE (PORT)-

The place where the printer can be connected is known as port

BUFFER-

Buffer is an area or a place where the data to be printed is stored temporary memory area of printer.

PRINTER-

Printer is an output device connected to computer sends information or result to a printer, which is printed on paper.

TYPES OF PRINTERS-

1. DOT MATRIX PRINTER

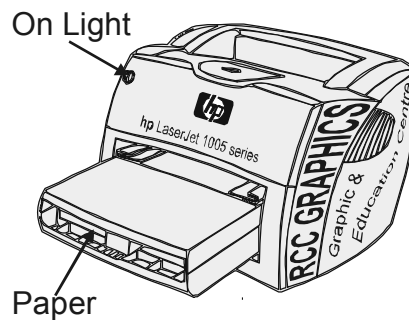
It is known as character printer in dot-matrix printers each character is made up of small dots. The speed of this printer can be measure in character/sec the speed is 10 c/s to 600 c/s print quality.

2. INKJET PRINTER

The inkjet printer is called as a line printer because it print the character on the paper in line formed. It speed is 2.26 page per minutes.

3. LASER PRINTER

It is the most commonly used printer speed of this printer can be measure in PPM (page per minutes) speed in 4 PPM to 17 PPM.



(FIGURE No. 1.10)

LASER PRINTER

INPUT DEVICE

The device, which is used to feed the data into the computer memory by the user, is called input device the example of input device

- 1- Keyboard
- 2- Mouse
- 3- Mic
- 4- Scanner
- 5- Floppy disk
- 6- Hard disk

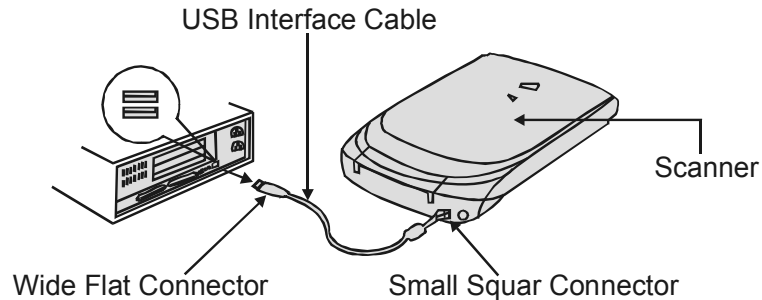
OUTPUT DEVICE-

These devices are responsible for presenting the final output that is the processed data to the computer user the example of output device

- 1- Monitor
- 2- Printer
- 3- Plotter
- 4- Speaker
- 5- Floppy disk
- 6- Hard disk

SCANNER UNIT-

Scanner is an input device which is used to scanning the images.



(FIGURE NO. 1.11)

SCANNER

MOUSE-

Mouse is an input device which is used to point & select an option on the v.d.u it has three buttons moving the mouse move the cursor on the screen and by click the button on the mouse user can select the option a mouse can be move in any direction with the help of a ball present on the bottom surface of the Mouse.



(Figure No. 1.12)

MOUSE

PROCESSING-

Processing is the manipulation of the letter number or graphic symbols that constitute the data and manufacturing of the information.

OPERATING SYSTEM (OS)

It is a software which works like an interface (interpreter) between user and computer it establish the link between user and computer, first of all it start the computer and then managed them properly, it manages memory of the computer all peripherals and used software

E.g. MS-Dos, Windows-95/98/2000/ME/XP/Server, Unix, Linex, oNet



DOS (DISK OPERATING SYSTEM)

Ver-6.2

Dos is the process which start your computer it will takes cake about your secondary storage device it contains three important files to start your system named as 10 sys MS -Dos. Sys command com when you switch to the system it will tell the user to wait some time after that "starting MS-dos" message will be displayed after that user has to enter the current date and time after that the prompt will be appear.

There are Two types of Dos Command.

1. **Internal Command**
2. **External Command**

Internal Command

This type of Command is related with Command.com. It have no need of any extra file.

E.g. Copy, Del, Dir, Type etc.

External Command

This type of Command is also related with Command.com. It have need some extra file.

E.g. Xcopy, Print, Attrib etc.

INTERNAL COMMAND

1. **DIR**

THIS COMMAND IS USED TO DISPLAYS A LIST OF FILES IN A DIRECTORY

E.g. C:\>dir

2. **CLS**

CLEAR THE SCREEN

E.g. C:\>cls ←

3. **DATE**

THE COMMAND IS USED TO SEE THE DATE AND WE CAN FEED NEW DATE AND CHANGE OLD DATE

E.g. C:\>date ←

4. **TIME**

THIS COMMAND IS USED TO SEE THE TIME AND WE CAN CHANGE THE OLD TIME AND FEED NEW TIME

E.g. C:\>time ←

5. **VOLUME**
SEE THE VOLUME NUMBER
E.g. C:\>vol ←
6. **VERSION**
SEE THE VERSION NUMBER
E.g. C:\>ver ←
7. **COPY CON**
THIS COMMAND IS USE TO MAKE A NEW FILE
E.g. C:\>copy con file name ← later Press F6 or Ctrl+Z for save ←
8. **TYPE**
THIS COMMAND IS USED TO SEE THE MATTER OF ANY FILE
E.g. C:\>type file name ←
9. **RENAME**
THIS COMMAND IS USED TO RENAME OR CHANGE THE NAME OF ANY FILE.
E.g. C:\>ren old file name new file name ←
10. **COPY**
THIS COMMAND IS USED TO MAKE A DUPLICATE FILE.
E.g. C:\>copy old file name new file name ←
11. **DELETE**
TO DELETE A FILE
E.g. C:\>del file name ←
12. **DIR/P**
SEE THE DIRECTORY AND FILE PAGE WISE
E.g. C:\>dir/p ←
13. **DIR/W**
SEE THE DIRECTORY WITHOUT SIZE, DATE AND TIME IN THE FILE COLUMNS
E.g. C:\>dir/w ←
14. **DIR/L**
SEE THE DIRECTORY IN LOWER CASE WISE (SMALL LETTERS)
E.g. C:\>dir/l ←
15. **DIR/O**
SEE THE DIRECTORY SERIAL WISE
E.g. C:\>dir/o ←

16. **DIR/S**
SEE THE DIRECTORY & FILE STRUCTURE
E.g. C:\>dir/s ←┐
17. **DIR/AA**
SEE THE LIST ONLY FILES.
E.g. C:\>dir/aa ←┐
18. **DIR/AD**
SEE THE LIST ONLY DIRECTORIES.
E.g. C:\>dir/ad ←┐
19. **DIR/AS**
SEE THE LIST ONLY SYSTEM FILES.
E.g. C:\>dir/as ←┐
20. **DIR/AH**
SEE THE HIDDEN FILES
E.g. C:\>dir/ah ←┐
21. **DIR/AR**
SEE THE READ ONLY FILES
E.g. C:\>dir/ar ←┐
22. **DIR/OD**
SEE THE DIRECTORY DATE WISE IN ASSENDING ORDER.
E.g. C:\>dir/od ←┐
23. **DIR/O-D**
SEE THE DIRECTORY DATE WISE IN DESENDING ORDER.
E.g. C:\>dir/o-d ←┐
24. **DIR/ON**
SEE THE DIRECTORY NAME WISE ASSENDING ORDER (A-Z)
E.g. C:\>dir/on ←┐
25. **DIR/O-N**
SEE THE DIRECTORY NAME WISE DESENDING ORDER (Z-A)
E.g. C:\>dir/o-n ←┐

26. DIR/OE

SEE THE DIRECTORY BY EXTENSION NAME ASCENDING ORDER (A-Z)

E.g. C:\>dir/oe ←

27. DIR/O-E

SEE THE DIRECTORY EXTENSION NAME DESCENDING ORDER (Z-A)

E.g. C:\>dir/o-e ←

28. MD

TO MAKE YOUR OWN DIRECTORY

E.g. C:\>md new dir name ←

29. CD

TO CHANGE DIRECTORY OR GO TO THE PARTICULAR DIRECTORY

a. E.g. C:\>cd file name ←

b. C:\Ram>

30. CD..

TO COME OUT OF ANY DIRECTORY

a. E.g. C:\ram>cd.. ←

b. C:\>

31. CD

DIRECT COME OUT OF ONE OR MORE THAN ONE DIRECTORY AT A TIME

a. E.g. C:\Ram>krishna>cd\ ←

b. C:\>

32. RD (remove directory)

THIS COMMAND IS USED TO REMOVE DIRECTORY FROM DISK THAT ARE NO LONGER NEEDED

E.g. C:\>rd old dir name ←

PROMPT

THIS COMMAND IS USED TO CHANGE THE CURRENT PROMPT WITH THE HELP OF DIFFERENT TYPES OF PROMPT OPTION

THERE ARE TWO TYPES OF PROMPT

1. NATURAL PROMPT

2. ARTIFICIAL PROMPT

1. NATURAL PROMPT-

WHICH IS ALREADY SEEING IN THE SYSTEM

2. ARTIFICIAL PROMPT-

WHICH IS CREATING BY USER WITH THE HELP OF PROMPT OPTIONS.

- A) \$T CURRENT TIME (time)
- B) \$V DOS VERSION (ver)
- C) \$\$ DOLLAR SIGN (\$)
- D) \$D CURRENT DATE (date)
- E) \$N CURRENT DRIVE (any)
- F) \$P CURRENT PATH (C:)
- G) \$G GREATER THAN SYMBOL (>)
- H) \$L LESS THAN SYMBOL (<)
- I) \$Q EQUAL SIGN (=)
- J) \$b VERTICAL BAR (|)
- K) \$P\$G TO RETURN OWN PROMPT (C:>)

FOR PRACTICE-E.g.

- a. C:\> Prompt \$t ← then it shows 10:05:00.08
- b. C:/> Prompt \$D ← then it shows Sat 12-06-2005
- c. C:/> Prompt HK ← then it shows name in first HK

WILD CARDS

WILD CARD CHARACTER ARE THOSE CHARACTER WHICH ARE USED FOR SUBSTITUTING ONE CHARACTER OR SET OF CHARACTER

- 1) WC * (ASTERIK MARK)
- 2) WC ? (QUESTION MARK)

1) ASTERIK MARK (*)

THIS WILD CARD ARE USED FOR A SET OF CHARACTER

- E.g. C:\> dir letter.* ←
C:\> dir r*.* ←
C:\> dir *.* ←

2) QUESTION MARK (?)

THESE WILD CARD ARE USED FOR ONE CHARACTER

E.g. C:\>dir *.sy? ←

C:\>dir ??r.* ←

PATH COMMAND

1) DIR

E.g. C:\>dir directry name\sub directry name\sub directry name ←

2) TYPE

E.g. C:\>type dir name\subdir name\file name ←

3) DEL

E.g. C:\>del dir name\sub dir name\file name ←

4) COPY

E.g. C:\>copy dir name\sub dir name\old file name ←

C:\>dir name\subdir name\new file name ←

5) Ren

E.g. C:\>ren dir name\subdir name\old file name new File Name ←

EXTERNAL COMMAND

1) EDIT

START A FULL SCREEN TEXT EDITOR

E.g. C:\>edit ←

2) MOVE

THIS COMMAND USED TO CHANGE THE NAME OF ANY DIRECTORY

E.g. C:\>move old dir name new dir name ←

3) XCOPY/E

USED TO MAKE A DUPLICATE DIRECTORY

E.g. C:\>xcopy/e old dir name new dir name ←

4) DELTREE

USED TO DELETE A WHOLE DIRECTORY AT A TIME

E.g. C:\>deltree dir name ←

5) A) ATTRIB +R

USED TO MAKE READ ONLY OF ANY FILE

E.g. C:\> attrib +r file name ←

B) ATTRIB -R

USED TO CLEAR THE ATTRIB READ ONLY OF ANY FILE

E.g. C:\> attrib -r file name ←

C) ATTRIB +H

USED TO HIDE OF ANY FILE

E.g. C:\> attrib +h file name ←

D) ATTRIB -H

USED TO UNHIDE OF ANY FILE

E.g. C:\> attrib -h file name ←

6) SORT

This command is use to display the details of the file in alphabeticaly order.

E.g. C:\> Sort< file Name ←

a) C:\>Sort< file Name ←

File is sorted in assending order.

b) C:\>Sort/r< File Name ←

File is Sorted in desending Order.

c) C:\>Sort>>File Name ←

This command is use to add extra matter in the file.

7) FC

This command is used to Compares two files or sets of files and displays the difference between them.

E.g. C:\> Fc file Name1 file Name2 ←

8) PAUSE

THIS COMMAND IS USED TO STOP A RUNING BATCH FILE (Programme file) and It is use in Batch file.

9) CHKDSK

To Check your system

Or

Analyzes Diagnoses and Optionally Corrects Command Hard Disk Errors Report on the Status of File on the Disk.

E.g. C:\>chkdsk ←↵

10) SCANDISK

Analyses, Repairs Logical, and Physical Disk Errors This Command Is, Available Only In Versions 6.2 and latter

E.g. C:\> scandisk ←↵

11) LABEL

Add or Modifies A Disk Volume Label

E.g. C:\> label name ←↵

12) Doskey

To Repeat the back commands

To repeat the Previous command **Press F8**

To display install Commands **Press F7**

To select the command **Press F9**

To delete the install commands **Press Alt F7**

E.g. C:\> Doskey ←↵

13) Batch file

To Make a shortcut of file (Like a Program file)

E.g. C:\> copy con file name.bat ←↵

14) Floppy Drive (Use of Floppy Drive)

C:\> A: ←↵

A:\> Dir ←↵

15) CD-Rom (Use of CD-Rom)

C:\>E: ←↵

E:\> Dir ←↵

16) Print

To Print a file.

E.g. C:\>Type file name>>prn ←

17) Help (/?)

To See the Help of Dos Commands.

E.g. C:\>dir/? ←

GURUKUL TECHNICALS INST. GRAPHICS
EDUCATION & COMPUTER CENTRE

IMPORTANT NOTES

GURUKUL TECHNICALS INSTITUTE

AN ISO 9001-2000 INSTITUTE, HO-110007

Font- Krishna

1 1 !	2 2 /	3 3 %	4 4 +	5 5 :	6 6 ,	7 7 -	8 8 ,	9 9 ;	0 0 %	- . %	= % .	\ ? %
Q , %	W %	E % %	R % %	T % %	Y % %	U % %	I % %	O % %	P % %	[% %] % %	
A . 	S , %	D % %	F % %	G % %	H % %	J % %	K % %	L % %	; % %	' % %		
Z , %	X % %	C % %	V % %	B % %	N % %	M % %	, % %	. % %	/ % %			