INFORMATION PROCESSING & TECHNOLOGY

Volume-I

(FOR CLASS - 6)

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Preface

'Vidya Bharti' is committed for holistic development of students. Computer has become the need of the day and a tool for learning. 'Bhartiya Shiksha Samiti U.P.' decided to meet the challenge of learning from 6th to 12th standard and this series of books from VI to X will meet the needs of the Computer and Information Technology as a tool of education.

We are moving into an information age and are influenced by technology. It is shaping our work pattern. This series of five books will enable students free access to technology and guidance in the responsible use of Information.

The educational boards keep reviving their syllabi so as to meet the changing needs. This second edition of VI to VIII will have many changes from the first one and the first edition of IX and X is an innovation to adopt learning by doing. This will encourage and provide opportunity to the student for obtaining more practical knowledge.

This edition owes a debt of gratitude to Honorable Brahmdev Sharma 'Bhai ji' Patron, Sri Yatindra Sharma Ji- Akhil Bhartya Sah-Sangathan Mantri and Sri Shiv Kumar Ji-Rastriya Mantri Vidya Bharti.

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Sharda Prakashan

Saraswati Kunj, Nirala Nagar,

Lucknow.

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Learning Objective

Learning objectives

As we know computer is a tool by which we can get various details about the things required in our daily life.

This book has been prepared for the student who doesn't have basic knowledge about computer.

- Awareness about internal and external components and their usage.
- Use of computers in various fields (education, entertainment, environment, securities etc)
- To prepare documents, home budgets, future plans through the computer.
- Storage of the document for a long period.
- Internal working system of computer number system.

CHAPTER 1

COMPUTER : AN INTRODUCTION AND EVOLUTION

INTRODUCTION

Today, computers are being used in each and every field of life. They have become an important part of our day-to-day activities. It is used in various organizations like railways, airlines, banks, universities, hospitals etc.

WHAT IS A COMPUTER?

A computer is an electronic device, which accepts data and instructions as input, processes and stores the data, and gives the result as output.

Computer can access and process data millions of times faster than human beings. Computer can do a lot of different task such as playing games, railway reservation, weather forecasting, error detection and controlling the flight space aircraft etc.

A computer is used as a data processor. The terms data and information are very commonly used.

Data: Data in computer terminology mean raw facts and figures. For example 'Sumit','1983','A', 165.39, and 68.2 are data. Data are processed to form information.

Information: Organized collection of data is known as information. It means what we get after processing data (meaningful data). For example "SUMIT" whose roll number is 1983 has got grade 'A' is information.

COMPUTER SYSTEM

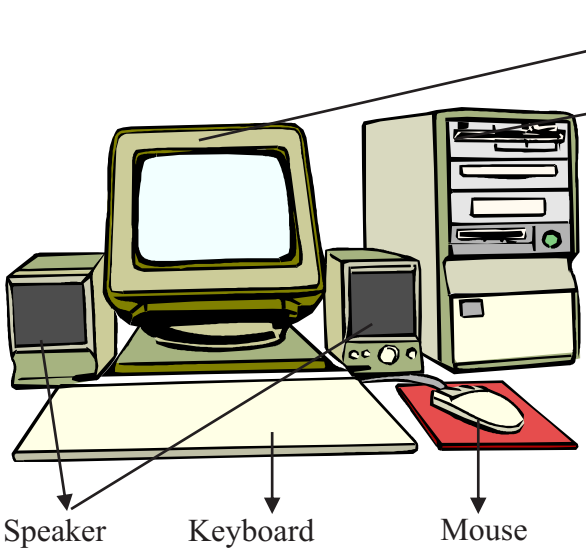


Fig 1.1 A

A computer system consists of a group of electronic devices used to perform a variety of operations. This group of devices can be divided into three basic units.
The three basic units forming a computer system are:

1. INPUT UNIT
2. CENTRAL PROCESSING UNIT
3. OUTPUT UNIT

Some major application of computers

1. Business
2. Medicine and health care
3. Communication
4. Education
5. Science, Research and engineering
6. Law enforcement by police
7. Music
8. Military
9. Government
10. Theatre, film and Television
11. Computers at home
12. Manufacturing

EVOLUTION OF COMPUTER

Introdution -

In older days it was difficult for big calculation. Earlier human was calculated by piece of stone and draw line on the wall. Decimal number system was developed. Development was on the basis of the whole number. The calculator and computer invented for calculation in development process.

Fig 1.1 Older days medium of calculation

ABACUS -

Many centuries ago when started to count the number, he thought of a device which can trace the numbers and thus came the existence of ABACUS. Abacus was the first calculating device. It developed in China about 3000 years ago. It was made of wooden frame with columns of wire

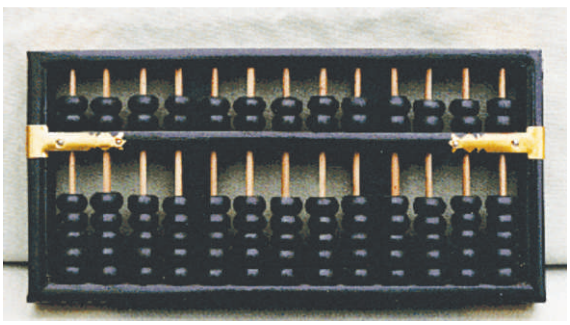


Fig 1.2 A Abacus

having beads on them. Wooden frame is divided into two parts. First part is called Heaven. Second Part is called Earth. It is used for calculation and counting purpose with the help of beads.

Fig 1.2 B Abacus

Fig (1.3) Blaise Pascal

Fig (1.4) Pascaline or Adding machine

PASCALINE -

A French mathematician Blaise Pascal made first mechanical calculator Pascaline in 1642. The other name of this machine is Adding machine. This machine can do addition and subtraction. This machine based on watch and Odometer.

DIFFERENCE ENGINE -

English Mathematician Charles Babbage developed first automatic calculating machine in 1822. This machine called Difference Engine.

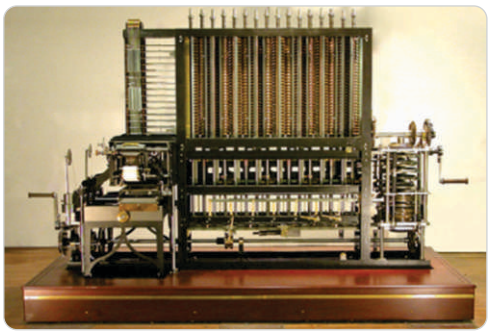


Fig (1.5) Difference Engine

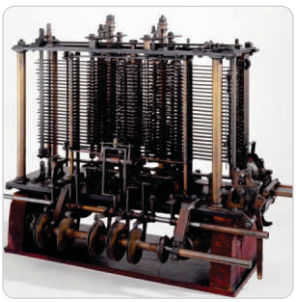


Fig (1.6) Analytical Engine

Fig (1.7) Charles Babbage

ANALYTICAL ENGINE -

English Mathematician Charles Babbage made Analytical Engine in 1833. This was a revised and advance form of Difference Engine. This machine was similar to modern age computer. Charles Babbage has greatly contributed to the development of Computer. So Charles Babbage is called Father of Computer.

LADY ADA AUGUSTA -

Lady Ada Augusta stored instruction in Analytical Engine. So she called first programmer in the world.

Fig 1.8 Ada Augusta

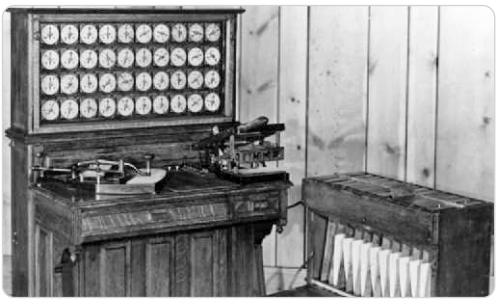


Fig (1.9) Census Tabulator

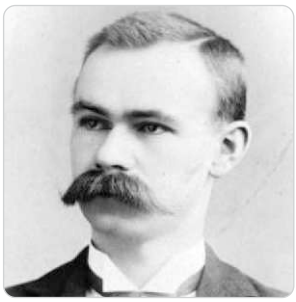


Fig (1.10) Harman Hollerith

HOLLERITH CENSUS TABULATOR -

Dr. Harman Hollerith made a calculating device. The name of this device is Census tabulator Punched Cards is used to represent data in this machine.

This machine run by electricity. US census had completed in three year with the help of this machine.

AIKEN AND MARK-I -

Scientist Howard Aiken and top four engineers Of IBM (International Business Machine) developed a machine in 1939. The name of this machine was Mark I. Mark I was first Electro mechanical Computer in the World. This computer can do multiply in 6 second and division in 12 second.

Fig (1.11) Howard Aiken with Mark I

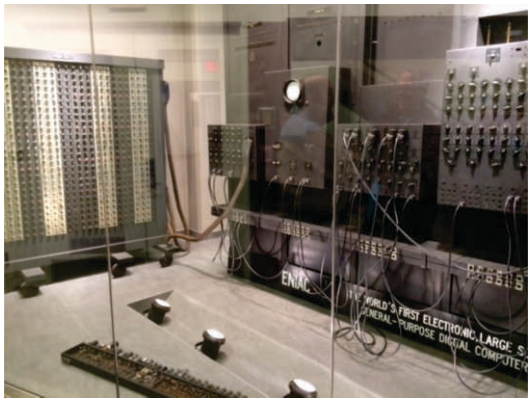


Fig (1.12) Eniac

ENIAC -

Electrical engineer Sir J.P. Ecort and John Mitchell made a computer in 1946. The name of this computer is ENIAC (Electronic Integrator and calculator). ENIAC was first electronic computer in the world.

COMPUTER GENERATION

Generation in computer terminology is a change in technology a computer is being used. There are five computer generations known till date. Following are the main five generations of computers -

1- First Generation -

The period of first generation was 1946-1958. Computers of first generation used **Vacuum tubes.** Computers used **Magnetic Drum** for memory. These computers were very big.

The main features -

- Vacuum tube technology
- Supported machine language only
- Very costly
- Generated lot of heat
- Slow input and output devices
- Very big size
- Consumed lot of electricity

Fig (1.13) Vacuum Tube

Fig (1.14) First Generation Computer

Main computers.

- ENIAC
- EDVAC
- UNIVAC

2- Second Generation -

The period of second generation was 1959-1965. Computers of second generation used transistor. Transistors were cheaper, consumed less power, more compact in size. Computers were faster than the first generation machines made of vacuum tubes.

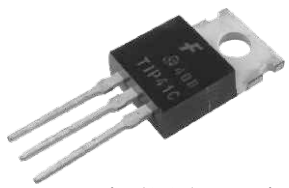


Fig (1.15) Transistor

The main features -

- Transistors technology.
- **Magnetic cores** were used as primary memory.
- **Magnetic tape** and **magnetic disks** were used as secondary storage devices.
- **Assembly language** and high-level programming languages like **FORTRAN, COBOL** were used.
- The computers used batch processing and multiprogramming operating system.

Fig (1.16) Second Generation Computer

Main computers.

- IBM 1620
- IBM 7094
- CDC 1604
- CDC 3600
- UNIVAC 1108

Fig (1.17) Second Generation Computer

3- Third Generation -

The period of third generation was 1965-1971. Computers of third generation used **IC (integrated circuits)** in place of transistors. The IC was invented by jack Kilby.

The main features -

- IC used
- Smaller size
- Generated less heat
- Faster
- Still costly
- Supported high-level language like Basic

Fig (1.18) I.C.


Fig (1.19) Jack Kilby

Main computers.

- IBM-360 series
- Honey well-6000 series
- PDP (Personal Data Processor)


Fig (1.20) Third Generation Computer

4- Fourth Generation -

The period of fourth generation was 1971-1980. The computers of fourth generation used **VLSI (Very Large Scale Integrated)** circuits. VLSI circuits having about 5000 transistors and other circuit elements and their associated circuits on a single chip. So it is called Microprocessor.

The main features -

- VLSI technology used
- Very cheap
- Portable and Reliable
- Very small size
- Pipeline processing
- Concept of internet was introduced

Fig (1.21) VLSI

Main computers.

- DEC 10
- STAR 1000
- CRAY-1 (Super Computer)


Fig (1.22) Fourth Generation Computer

5- Fifth Generation -

The period of fifth generation was 1980-till date. The Computer of fifth generation used **ULSI (Ultra Large Scale Integration)** technology. This generation is based on parallel processing hardware and **AI (Artificial Intelligence)** software.

Fig (1.23) U.L.S.I.

The main features -

- ULSI technology
- Development of true artificial intelligence
- Development of Natural language processing
- Very cheap.
- More user friendly interfaces with multimedia features
- very powerful
- Roboties
- Neural networks
- Game Playing

Fig (1.24) Fifth Generation Computer

Main computers.

- Desktop
- Laptop
- Note Book
- Ultra Book
- Chorme Book

Types of Computer

Computer depending on the purpose, work and size of various types.

Types of computers based on size

Computer can be four types based on size -

i. Micro Computer
ii. Mini Computer
iii. Mainframe Computer
iv. Super Computer

i. Micro Computer -

The development of computer is started from 1946. The microprocessor was invented in **1970.** Microprocessor was developed by Intel. The name of first microprocessor was **Intel 4004**. Microprocessor used in computer. This computer is called **Micro computer.**

These are based on the microprocessor technology. These are the smallest size of computer. The computer can be placed on a desk or briefcase. These are used for personal use in school, home or office. So they are called **PC (Personal computer).**

Fig (1.25) Micro Computer

ii. Mini Computer -

These are mid size computer. Mini computer has more work capacity than Micro computer. Mini computers are costly than micro computers. Mini computers are used in banks, share market, server etc. Multiple users can work on Mini computer. Mini computer has more than one CPU. PDP-8 was the first Mini computer. Size of PDP-8 was as Refrigerator.

Fig (1.26) Mini Computer

iii. Mainframe Computer -

Mainframe computer is very large in size. Mainframe computer has very large storage capacity. Mainframe computer executes many programs in one time. Mainframe computers are used in companies, share market or Government as server computer. Multiple users can work on Mainframe computer. IBM 4381, ICL 39 are example of Mainframe computer.

Fig (1.27) Mainframe Computer

iv. Super Computer -

Super computer have most speed and very large storage capacity in all categories of computers. They work in order to parallel multiple CPU. These computers are very costly. Super computers are used in weather forecasting, scientific simulations, animated graphics, nuclear energy research etc. Param 8000 is a first Indian Super computer. Param 10000 is a very popular India Super computer. Cray 2 and NEC is another example of Super computer.

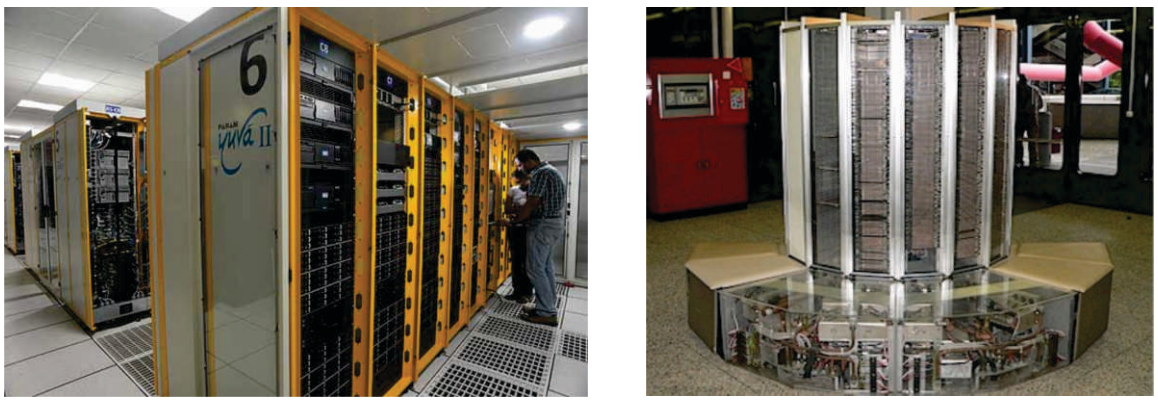


Fig (1.28) Super Computer

Exercise

1. Choose the right answer :

a. What is computer ?

(i) Electronic device (ii) Input device (iii) Storage device (iv) None of these

b. Which device developed in China ?

(i) Digital computer (ii) Abacus (iii) Pascaline (iv) Mark I

c. The period of First Generation was -

(i) 1956-1958 (ii) 1935-1944 (iii) 1988-2000 (iv) None of these

d. Who invented IC ?

(i) Jack Kilby (ii) Lady Ada Augusta (iii) Raman (iv) Charles Babbage

e. The name of first Microprocessor was -

(i) Intel 4005 (ii) Intel 4004 (iii) Intel 4002 (iv) Intel 2005

2. Fill in the blanks.

a. _____ was first automatic calculating device.

b. _____ is called father of computer Science.

c. Abacus is developed in _____

d. English Mathematician Charles Babbage made _____

e. _____ is called first programmer in world.

f. The computers of first generation used _____

g. The computers of second generation used_____ in place of _____

h. Param 10000 is a _____ Super computer.

i. The size of mini computer PDP-8 was as _____

j. _____ are based on the microprocessor technology.

3. Write true or false -

a. The size of first generation computer is equal to the mobile phone.

b. The capacity of fourth generation computer is greater than third generation computer.

c. The computers of second generation used VLIC

d. Micro computer has more than one CPU.

e. The size of first Super computer was near about 90 square feet room.

f. Abacus was the first Calculating Device in the World.

g. Difference Engine was Invented in 1642.

h. A French mathematician Blaise Pascal made Pascaline.

i. Eniac was made by Engineer of IBM.

j. Microprocessor was invented in 1970.

4. Match the following.

a.	First Generation	VLSI
b.	Third Generation	Vacuum Tube
c.	Fourth Generation	IBM 1620
d.	Micro Computer	IC
e.	Second Generation	PC
f.	Microprocessor	1833
g.	Analytical Engine	Micro Computer
h.	Mark I	Eniac
i.	JP Ecort	3000 Years
j.	Abacus	1939

5. Give answer of the following questions -

a. What is Computer ?

b. When was microprocessor invented ?

c. When was Mark I made ?

d. Who was first programmer in the world ?

e. Who is called father of computer Science ?

f. How many types of generations of the computers ?

g. Write the difference between second Generation and third Generation.

h. What is the main features of First Generation ?

i. Write the definition of Micro computer.

j. What is computers used for memory in First Generation ?

CHAPTER 2

COMPUTER SYSTEM ORGANIZATION

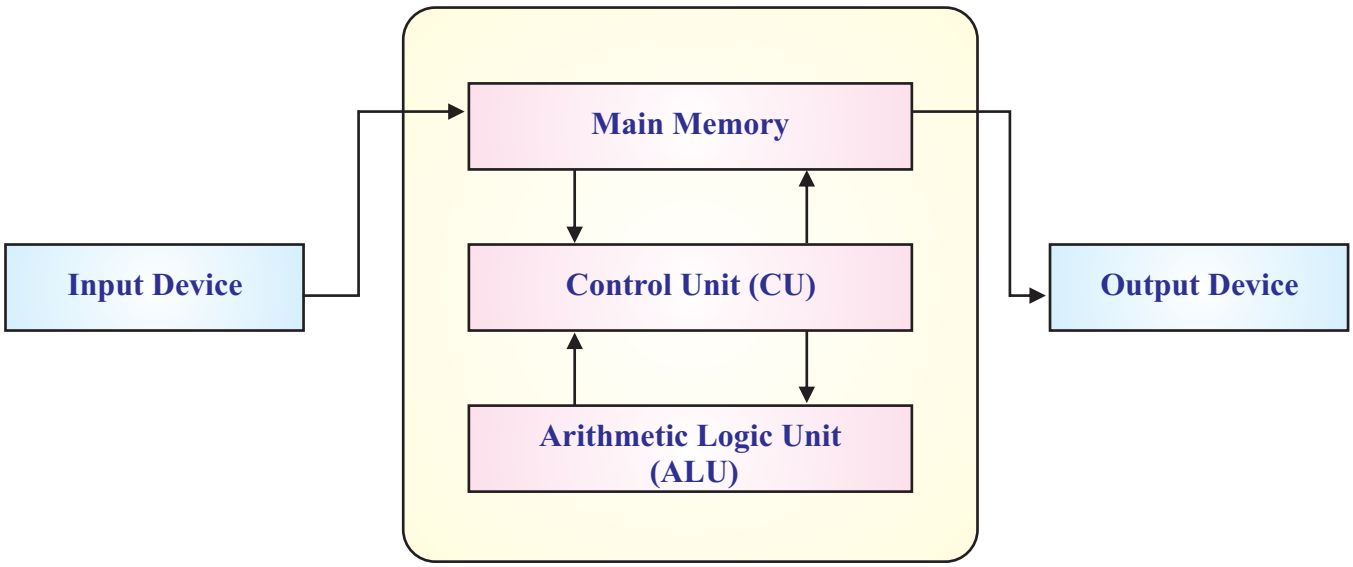


Fig 2.1

BLOCK DIAGRAM OF COMPUTER SYSTEM

Functional units of computer system

1. **Input unit:** The input unit consists of input devices. These are the devices that are used to input data into a computer. Keyboard and mouse are the most common input devices. Scanner, Joystick, Light pen, OCR, MICR, Digital camera etc. are other examples of input devices.

2. **Output unit:** This unit consists of the devices that are used to give the output i.e. the processed information to the user. Such devices are known as output devices. Monitor and printer are the most commonly used output devices.

3. **Central Processing Unit:** Central Processing Unit, commonly known as CPU, is the most important unit, where all the processing jobs take place. CPU is the control centre of the computer and hence it is said to be the "brain" of the computer.

Main Components of CPU

1. Arithmetic and Logic Unit
2. Control Unit
3. Memory Unit

Arithmetic and Logic Unit (ALU)

This part of CPU performs all the arithmetic operations like addition (+), multiplication (*), subtraction (-), division (/). It is also performing logical decisions like comparing two numbers whether they are equal or not. It can also compare alphabetic data to check whether they are same or not. So all the logical operations like less than (<), greater than (>), equal to (=), not equal to () etc, are also carried out by the ALU.

ALU perform all arithmetic and logical operations.

CONTROL UNIT (CU)

This device controls all the operations taking place in the system. It controls the flow of data and information from one unit to other.
Specially, CPU perform the following functions

1. Direct the flow of data and instructions from input device to memory.
2. Direct the data and instructions from memory to ALU as and when required by the program.
3. Transfer the information/processed data from ALU to memory.
4. Transfer the information/processed data from memory to output unit

CU (Control Unit) control and co-ordinates all operations taking place in the system.

MEMORY UNIT

To execute a program, data and instructions need to be stored temporarily. This storage is done in the memory unit of CPU.
The data and instructions are retrieved from the memory unit by the control unit for supplying to ALU as and when required by the program.

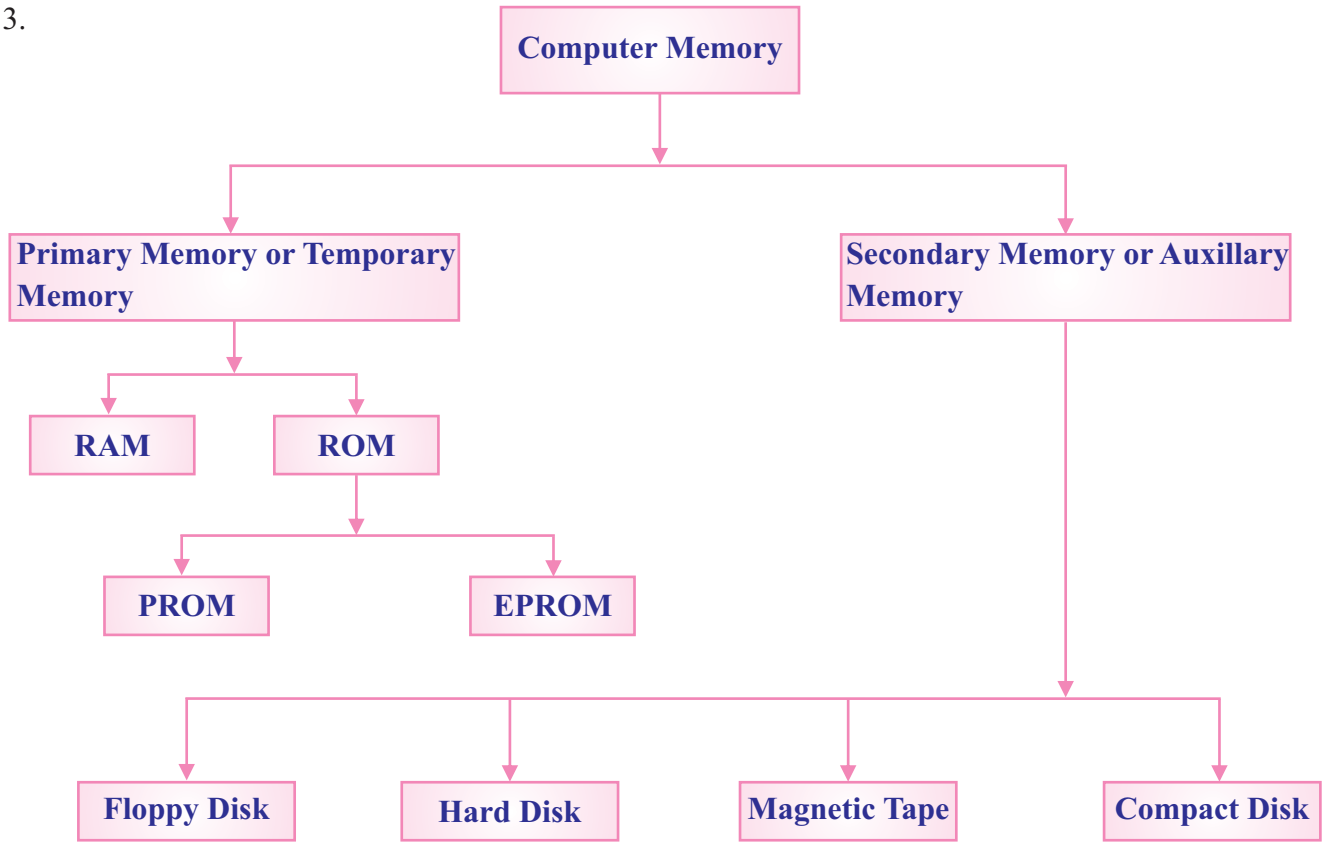
MU (Memory Unit) provides temporary storage for data and instructions.

MEMORY IN COMPUTER SYSTEM

In a computer system memory is required to store the data and instructions entered from input device, as well as result of processing given by the CPU. Memory divided into two parts.

1. Primary Memory
2. Secondary Memory

3.



Memory is an important component required to store data and instructions. A computer system has two types of memory i.e. Primary Memory, Secondary Memory.

PRIMARY MEMORY

Primary memory is the internal memory that can be directly accessed by the control unit of CPU. It provides temporary storage for data and instructions being processed and information produced by ALU. The primary memory is of two types.

1. RAM (Random Access Memory)

Fig 2.2

It is volatile memory and allow read and write operations. The data stored in this memory get lost when computer is switched off.

2. ROM (Read Only Memory)

ROM is non-volatile memory and allows read operations only.

Fig 2.3

TYPES OF ROM

There are many types of ROM like PROM, EPROM etc.

PROM (Programmable Read Only Memory)

In PROM the information is stored by programmer once after its manufacturing. It can't be altered or erased later on.

EPROM (Erasable Programmable Read Only Memory)

It is similar to the PROM but its information can be erased later on by ultra violet light and it can be re-programmed.

CACHE MEMORY

It is a small high-speed memory, which is used to increase the speed of processing by sending current programs and data to the CPU.

SECONDARY MEMORY

Secondary memory is used to store large amount of data and information permanently. This memory is also known as External memory or Auxiliary memory. Some secondary memories are Floppy disk, CD-ROM, and Hard disk etc.

HARD DISK

Fig 2.4

A hard disk is a permanent storage device that can store large amount of data. It consists of circular metallic disks coated with a magnetic material on both sides of disk. Data is read or written to hard disk with the help of read/write heads.

DVD(DIGITAL VERSATILE-DISK)

Fig 2.5

DVD-ROM is used to store digital data permanently. The surface of a DVD is covered with a transparent plastic coat.

Data is stored on a DVD-ROM in the forms of tiny pits that are burned out with the help of laser beam into a thin coating on its surface. To read the data from a DVD, a DVD-ROM drive is needed which uses a laser beam to read the data on the DVD. Storage capacity of DVD-ROM stores 4.7 GB of data.

STORAGE UNITS

Memory units	Equivalent Unit
1 Nibble	4 bits
1 B (Byte)	8 bits
1 KB (Kilo Byte)	1024 Bytes
1 MB (Mega Byte)	1024 KB
1 GB (Giga Byte)	1024 MB
1PB (Peta Byte)	1024GB
1XB (Exa Byte)	1024PB
1ZB (zolta Byte)	1024XB

INPUT DEVICES

Input devices is used to input data from the user, some commonly used input devices are discussed below:

KEYBOARD

Fig 2.6

Keyboard has many keys, which are used to enter the data into the computer. A keyboard contains the following different types of keys.

- Alphabetic keys - A-Z
- Numeric keys - 0-9
- Function keys - F1-F12
- Arrow keys - 
- Special keys - Shift, Alt, Ctrl etc.

MOUSE

Fig 2.7

A mouse has two or three buttons. The left button activates any program by clicking its icon and right button opens a shortcut menu of commands.

SCANNER

Fig 2.8

A scanner works like a Xerox machine using laser beams and display the scanned image on the monitor. The scanned image can be stored in a file to again access or edit it.

JOYSTICK

Fig 2.9

A joystick is an input device mainly used for video games. It sends the signals to the game programs to enjoy the games by moving the cursor and objects in them in the desired direction.

LIGHT PEN

Fig 2.10

It is pen like photosensitive instrument and senses a position on the monitor when it is positioned at screen.

OCR (Optical Character Reader)

This technique is used to read the printed characters directly and convert them into an appropriate code before storing into the computer. It may be used for validating the examination papers and applications forms. It does not require any special type of ink for reading but can recognize many different OCR fonts as well as typewriter and computer printed characters. An advance OCR system can recognize (read) hand made letters and numbers.

MICR (Magnetic Ink Character Reader)

This device is widely used in banks to process a number of cheques written daily. Each cheque has a pre coded bank number, account number and cheque number at the bottom with the special ink consisting of magnatizable particles of iron oxide. When a cheque is presented for payment, this same ink is again used by bank to encode the amount in the lower right corner.

Each cheque is inserted into an MICR reader, which sends the cheque information including the amount of the cheque to a computer for processing.

OUTPUT DEVICES

Some commonly used output devices are discussed below:

Monitor

A monitor is an essential output device, which is also called a screen, VDU (Visual Display Unit) or CRT (Cathode Ray Tube). It is just like a T.V. screen that displays the text and graphics on its screen. It displays everything, which is typed through keyboard and also produces the results of the programs and calculations performed on computer.

Monitor

Fig 2.11

Printer

This device is used to produce hard copy. Any type of data i.e. text or graphics displaying on the monitor can be printed on paper by the printer. There are two distinct categories of the printers impact and non-impact printers.

Impact Printers

These printers have the mechanical contact between their printer head and paper. The pins available in print head are physically hit against the ink ribbon and hit characters formed by the dots of pins are printed on the paper. Such printers are less expensive.

Example. Daisy Wheel Printer (Character Printer), DMP (Dot Matrix Printer), Line Printer

Non-Impact Printers

Not-Impact printers do not have pins and ribbons. They do not also have any mechanical contact between the print head and paper. These printers use thermal, chemical electrostatic and inkjet technologies and spray the colors by holes or laser beams. Such printers produce the best quality output.

Examples: Ink-Jet Printers, Laser Printer etc.

Speaker

It is an output device and gives the output in the form of sound.

Exercise

1. Choose the right answer :

a. Keyboard is a -

(i) Electronic device (ii) Input device (iii) Output device (iv) None of these

b. A Joystick is used for -

(i) Video games (ii) Songs (iii) Pointing (iv) OCR

c. A hard disk is a -

(i) Input device (ii) Storage device (iii) Output device (iv) None of these

d. 1 Nibble -

(i) 6 bits (ii) 4 bits (iii) 104 bytes (iv) 8 bits

e. Which is a small high speed memory -

(i) Cache memory (ii) RAM (iii) ROM (iv) CD

2. Fill in the blanks.

a. A _____ is a group of eight bits.

b. A Light Pen is an _____ device.

c. EPROM stands for _____ Programmable Read Only Memory.

d. A Secondary Memory also called _____ memory

e. An output produce by printer called _____ copy.

f. A hard disk is a _____ storage device.

g. All the arithmetic and logical operations perform in _____

h. A computer is an_____device.

3. State True or False:

a. Joystick is an output device.

b. Primary memory is also known as temporary memory.

c. Laser printer is an Impact Printer.

d. Light Pen is an Input device.

e. Speaker is a output device,

f. CPU only does calculations.

g. One GB equals to 1024 Bytes.

4. Write the full form of:

a. VDU _____

b. ALU _____

c. MU _____

d. CU _____

e. ROM _____

f. PROM _____

g. CPU _____

h. MICR _____

i. OCR _____

j. DVD _____

k. EPROM _____

l. PB _____

m. EB _____

n. ZB _____

5. Answer to the questions given below:

a. Write down main components of computer system

b. Differentiate between Input and Output devices.

c. Explain the different types of Primary Memory.

d. Differentiate between Primary and Secondary memory.

e. Explain the function of printer.

f. Differentiate between Impact and Non-Impact printers.

g. Explain the working of Light pen.

h. Differentiate between PROM and EPROM.

i. Why we use Cache memory?

j. Draw the Block diagram of the computer system.

CHAPTER 3

INTRODUCTION TO COMPUTER HARDWARE AND SOFTWARE

Hardware: Hardware refers to any physical component of a computer. For example, CPU, Monitor, Keyboard, Hard Disk, Floppy Disk, etc.

Software: Software refers to the programs, which are required to operate the computer. For example, MS-DOS (Microsoft Disk Operating System), BASIC, COBOL, dBASE, an accounting software, etc.

Difference between Hardware and Software:

The difference between hardware and software is explained in the following table:

Hardware	Software
1. Hardware is physical component of computer.	1. Softwares are instructions given to the computer.
2. You can touch hardware.	2. You cannot touch software.
3. Examples: Keyboard, CPU, and Floppy etc.	3. Examples: Windows, MS WORD etc.

Both hardware and software are dependent on each other. CPU, Memory Unit, Hard Disk, etc. are useless unless they are provided with instructions and data for storage and processing. Similarly, Windows or MS WORD has no importance unless they are used along with various hardware components of the computer.

Hardware Components of a Microcomputer (Desktop)

In today's computer industry, a wide variety of hardware components are available for microcomputers. The hardware components of a microcomputer can be classified into the following types:

Fig 3.1

1. Input Devices
2. Output Devices
3. Storage Devices
4. Cards
5. Ports and Cords
6. Power Supply
7. Cabinet
8. Motherboard and CPU

Motherboard

Motherboard is the most important hardware component of a microcomputer. Motherboard contains CPU and other chips of computer system. So, it is also called **System Board.**

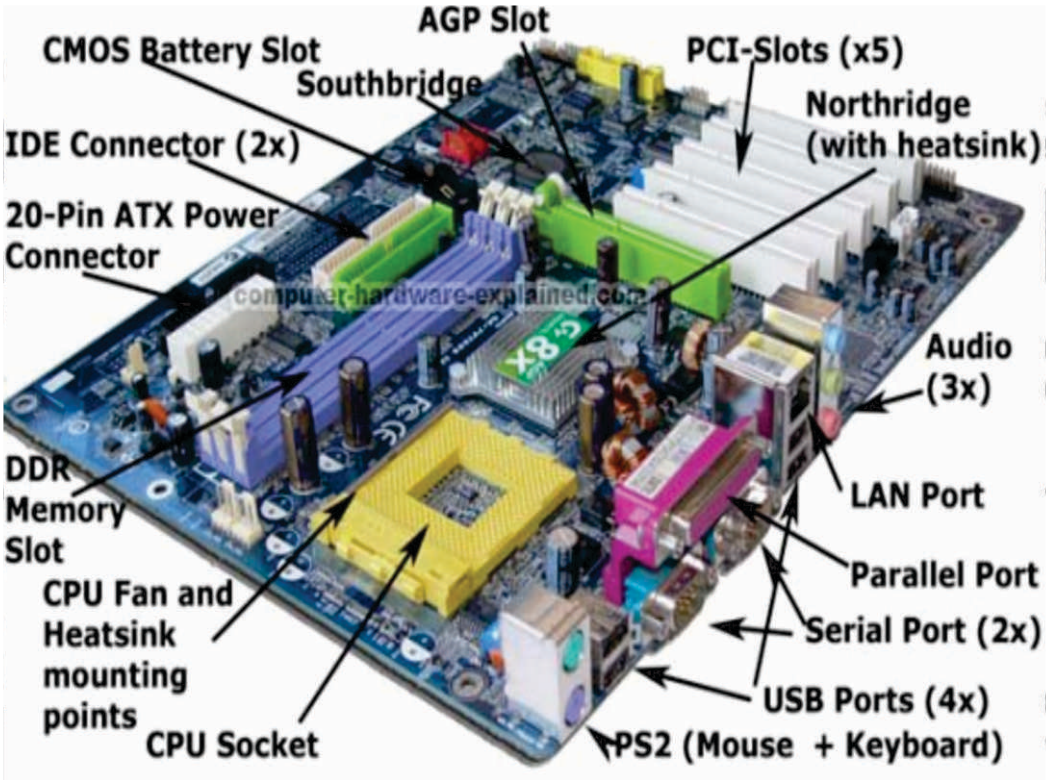


Fig 3.2

Cards

Cards are the printed circuit boards used to hold the chips (integrated circuits). A common example of card is sound card that generates the sound in a PC.

Ports and Cards

Besides the important hardware discussed above, the computer has several components, which are used as pathway for flow of data. The rear of a PC has many empty holes or external sockets called Ports or Connectors.

Cards are the cables used to plug into the ports. There are different types of cables for connecting different types of input, output and storage devices. The important cards used in a PC are keyboard cards, power cards, monitor cards and printer cards.

Power Supply

Power supply considered as the 'Heart' of a PC. Power supply is that important hardware, which provides the power source to a computer. Power supplies vary in size and power (in watt).

Cabinet

All the hardware components of a PC except Input and Output devices are placed inside a metallic box, called a Cabinet. Many designs of cabinets with different sizes are available for PCs.

Types of Software

Software are broadly classified into following two types:

A. System Software
B. Application Software

A. System Software : Software that is required to control the working of hardware and help in execution of applications are called System Software. This software performs a variety of functions like file management, storage management, I/O management, etc. System Software is developed by computer professional called **System Programmers**.

Examples: MS DOS (Microsoft Disk Operating System), Windows 95, Windows 98, Windows 2000, UNIX etc.

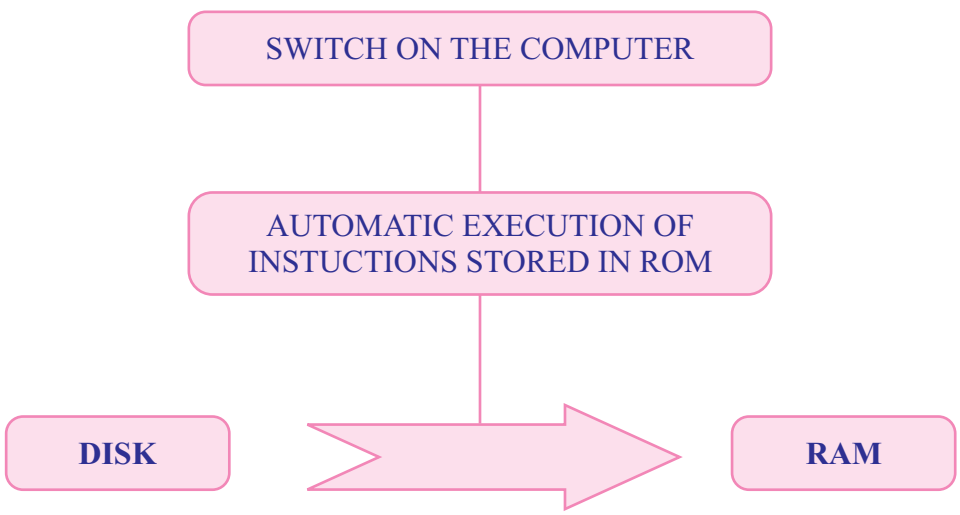
Computer Languages

A computer language is a set of commands, understandable by computer directly or after translating. A program is a set of instructions written in a computer language.

System Software includes:

(i) Operating System
(ii) Language Translator (Language Processor)

(i) Operating System : An operating system is the most essential system software that manages the operation of a computer. Without an operating system, it is not possible to use the computer. An operating system is software, which makes the computer ready to use by a process called booting.



LOADING OF OPERATING SYSTEM (BOOTING)

(ii) Language Translators : Regardless of the programming language used (except machine language), the symbolic instructions have to be executed by computer. The software, which converts the codes of other languages into machine code, are collectively called Language Translators.

Language Translators are categorized into three types:

(i) Assemblers
(ii) Interpreters
(iii) Compilers

(i) Assemblers : Assemblers translate assembly language code (source program) into machine language code (object program). The Microsoft assembler program (MASM) and Borland Turbo assembler program (TASM) are two popular assemblers.

(ii) Interpreters : Instructions of a high level language are coded in many statements. At the time of their execution they are converted into machine code, statement by statement, by using system software, called Interpreters.

Example : BASICA or GWBASIC interpreters execute programs written in BASIC language.

(iii) Compilers : In contrast to interpreters, compilers provide faster execution speed. Compilers do not translate and execute the instructions at the same time. They translate the entire program (source code) into machine code (object code). Compilers are widely used in translating codes of high level languages e.g. COBOL, FORTRAN, PASCAL, Turbo/ Quick BASIC, Turbo/Microsoft C etc.

B. Application Software : Software those are required for general and special purpose applications like word processing, accounting, etc. are called Application Software. Application software are developed using system software by computer professionals called **Application programmers**.

Examples **:** MS WORD, MS EXCEL and Paint.

Types of Application Software:

Application software are classified into following types:

(a) General Purpose Application Software
(b) Special Purpose Application Software
(c) Utility Software

(a) General Purpose Application Software : Whenever an organization purchases computers, besides and operating system, certain application software are also required to be purchased. These software are needed for general purpose like word processing, database management, spreadsheets, etc. Delete are known as general purpose software.

Examples : Microsoft WORD, Microsoft EXCEL and Microsoft ACESS.

(b) Special Purpose Application Software : Besides general purpose application software, some organizations also need software for special applications such as Desktop Publishing (DTP), graphics, multimedia, animations, financial accounting, sales and marketing, inventory, export documentation, etc. These softwares are collectively known as Special Purpose Application Software.

Examples : Adobe PageMaker, Corel Draw and Tally etc.

(c) Utility Software : Utilities are those helpful programs that ensure the smooth functioning of the computer. Utilities are meant to assist your computer. Some utilities help you backup data, some help remove outdated files or recover data that has been accidentally erased etc. Utility are those application programs that assist the computer by performing housekeeping functions like backing up disk or scanning/cleaning viruses etc.

Some important utilities are:

(i) Text Editor
(ii) Backup Utility
(iii) Data Compression Utility
(iv) Disk Defragmenter
(v) Antivirus Software

Exercise

1. Fill in the blanks:

a. _____ refers to any physical component of a computer.
b. Motherboard is also called _____.
c. _____ are the printed circuit boards use to hold the chips.
d. _____ is considered as a heart of PC.
e. The software that are required to control the working of hardware and aid the effective execution of a general user's applications are called _____ software.

2. Write True of False for the following statements:

a. You can touch software.
b. Motherboard contains CPU and other chips.
c. The rear of a PC has many empty holes of external socket called cords.
d. MS-Word is special purpose application software.
e. Assembler is a language translator.

3 Classify the following components of a computer into Hardware and Software:

a. Keyboard:_____ b. Floppy Disk :_____
c. MS-Dos :_____ d. Printer Cord :_____
e. An accounting program:_____ f. Paint :_____
g CPU :_____ h. Sound card :_____
i Windows 98 :_____ j. MS-excel :_____

4. Answer to the question given below :

a. What is difference between Hardware and Software?.
b. What is the difference between System Software and Application Software?
c. What is language translator? Name three types of language translators.
d. What is the difference between interpreter and compiler? Give an example of each.
e. Name four types of utilities.

CHAPTER 4

FEATURES OF WINDOWS

Windows is one of the most popular operating system of today's world. It has got some very useful features that makes it user friendly. e.g. windows 98, windows Me, windows XP etc.

Let us learn about them one by one:

1. Desktop

The screen in which icons, windows etc. are displayed is known as desktop.

The desktop may contain a background, one or more active or inactive windows, a taskbar and icons. You can see in figure.

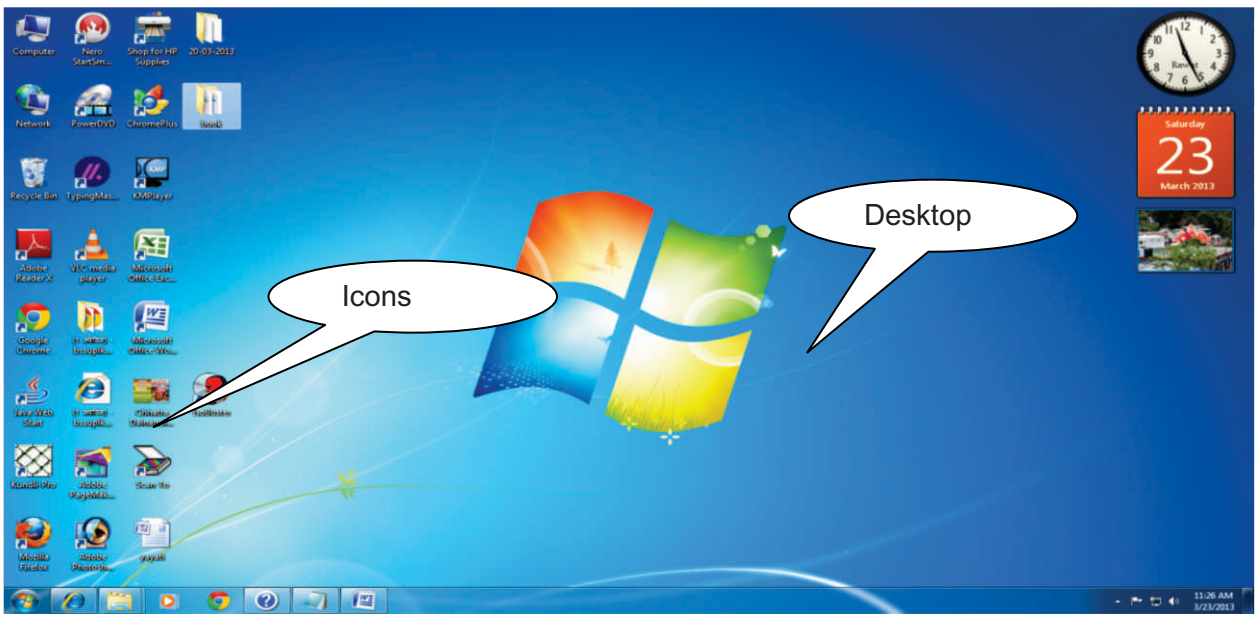


Fig 4.1 **The desktop**

2. The Icons

Icons are the pretty pictures representing windows elements like files, folders, shortcuts etc. or in other words icon is a graphic symbol representing a window elements. You can see in fig.

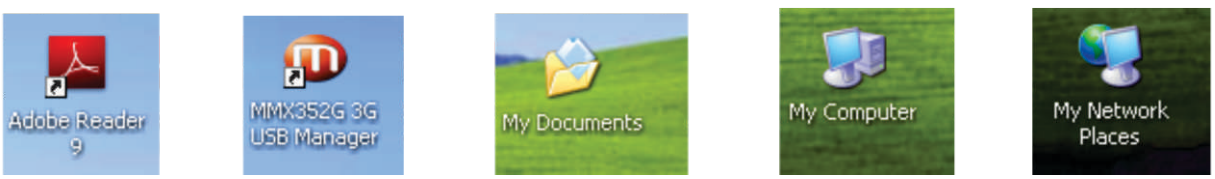


Fig 4.2

Various types of icons.

3. The Task Bar and Start button

We can use the taskbar and start button to navigate through windows.

❖ The Taskbar

The bar that is generally found at the bottom of screen.

The taskbar contains start button, clock, some toolbars (a toolbar is a bar containing icons for various tools) and the buttons corresponding to all open windows. See in fig.

Fig 4.3

❖ Start Menu

When we need to start a program or application click on the start button. A vertical menu will appear at the bottom on the desktop. See in fig.

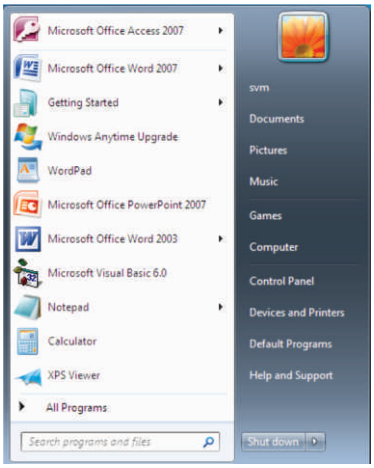


Fig 4.4

Files and Folders

To understand this take an example of a library where books are arranged subject wise in different cabinets. Similarly, in a computer one would like to arrange data topic wise. The cabinet of the library can be referred to as a folder and books as files.

A File is simply a set of data or information referred to by a name.
A folder is used to store a group of files on a disk in an organized mode. A folder can contain files and other folders.

Folders are also called Directories.

Creating folders on the Desktop

To create a new folder on the desktop, place the pointer on the desktop and click the right mouse button.
A pop up menu appears

- Click on the new option. A new folder appears on the screen.
- Type the name of new folder.
- An icon for the folder with the new name appears on the desktop.
- You can also create folders with windows explorer using similar steps.

Start menu Options

➢ Programs

It opens a list of various folders and their programs to choose from to run them.

➢ Documents

It gives you access the documents stored in document folder.

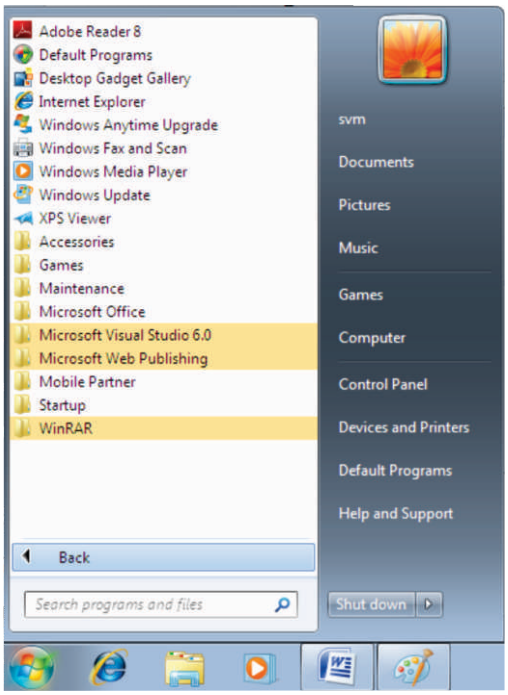


Fig 4.5

➢ Control Panel

It provides access to control panel, Printers, Taskbar and Start button, folder options System and security, Network and Internet, Hardware and sound and other windows settings icon.

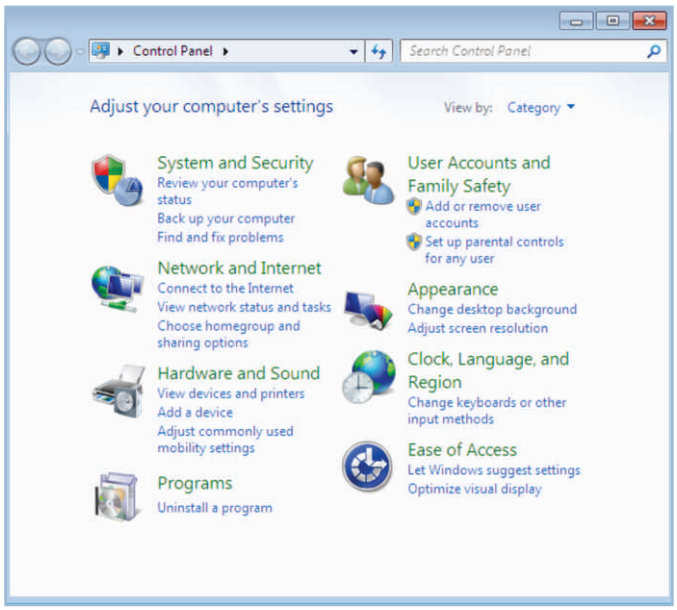


Fig 4.6

➢ Help and Support

It opens another window, which help you to provide information regarding windows problems. Pressing F1 can open help.

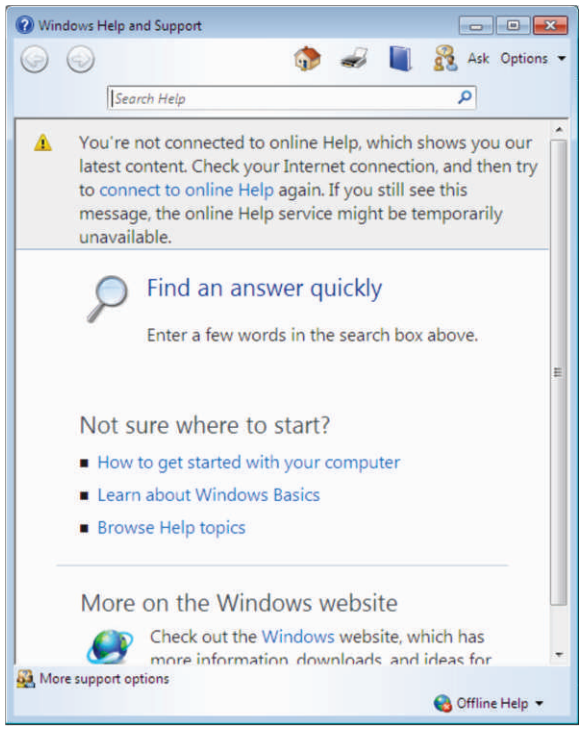


Fig 4.7

➢ Search

Using this you can search for a file, folder, of a computer. You can make Specific search of file and folders date wise, name wise, file type wise and content wise.

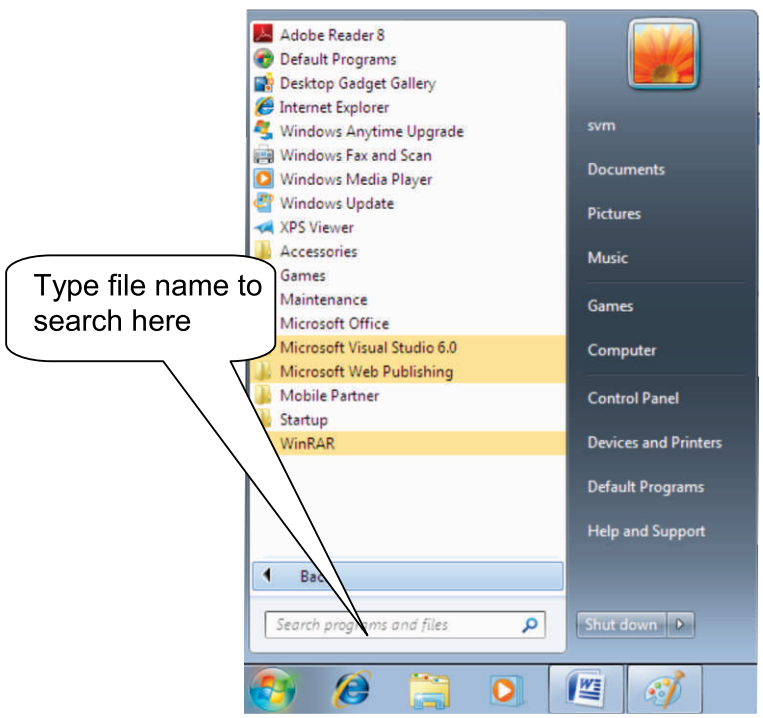


Fig 4.8

➢ Shut down

Shut down is used to close or restart the system properly. You can shut down your computer using these steps:

- Click on Start button on the task bar.
- Click on the Shut down.

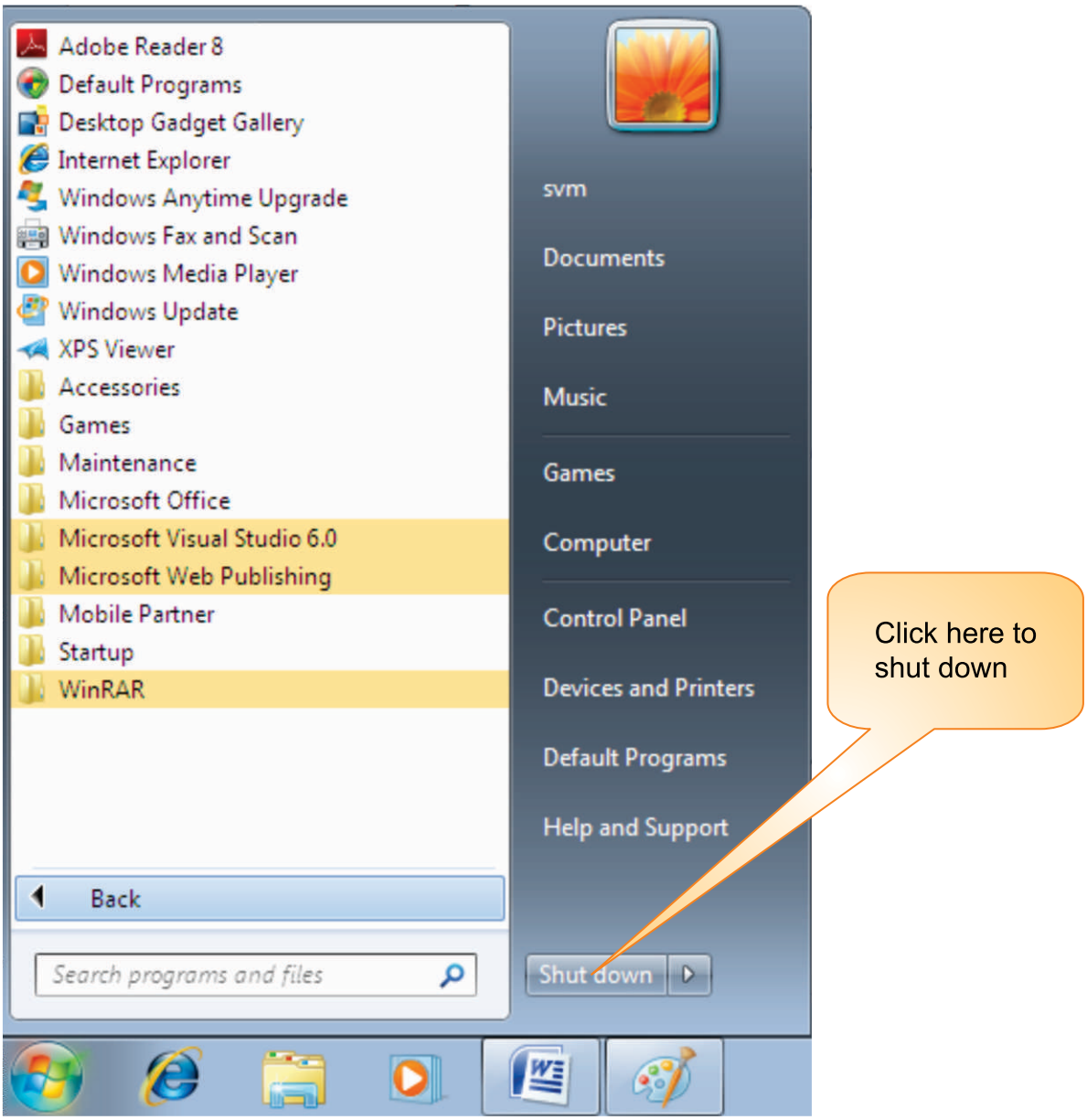


Fig 4.9

- To restart you can select restart option and click on ok.

Windows Accessories

Accessories can be accessed from start menu and programs. There are various heads in accessories, each giving rise to different options, which are grouped in categories.

These can be listed as:

1. **Accessibility**
   - Accessibility wizard
   - Magnifier
2. **Communications**
   - Dial up networking
   - Direct cable connection
   - Hyper terminal
   - ISDN configuration wizard
   - Phone dialer
3. **Entertainment**
   - CD player
   - Sound recorder
   - Volume control
   - Web TV for windows
   - Widows media player
4. **Games**
   - Free cell
   - Hearts
   - Mine sweeper
   - Solitaire
5. **System tools**
   - Back up
   - Character map
   - Clipboard viewer
   - Compression agent
   - Disk clean up
   - Disk defragmenter
   - Dive converter (FAT 32)
   - Drive space
   - Maintenance wizard
   - Net watcher
   - Scan disk

- Scheduled task
- System information
- System monitor

6. **Calculator**
7. **Imaging**
8. **Notepad**
9. **Paint**
10. **Word pad**

Parts of a Window Screen

A window is a typical rectangular area related to an application or a document.
An application window contains an open application such as word or paint. Many applications can be open or running simultaneously but there is only one active window at a time.
An application window has many elements like:

- Title bar
- Menu bar
- The workspace
- Scrollbars
- Corner and borders
- Control menu

1. Title Bar

It is the topmost bar of each application window and it contains the title of the open window.
Apart from the title it has several other elements like application icon, active file name, minimize button, maximize /Restore button and close button.
See Fig. 3.10

2. Menu Bar

The menu bar of an application window is a horizontal bar that below the title bar.
The menu bar lists the menus available for that application.

3. The Workspace

This is the area in a window below the title bar and menu bar. Everything that relates to the current application is displayed in the workspace.

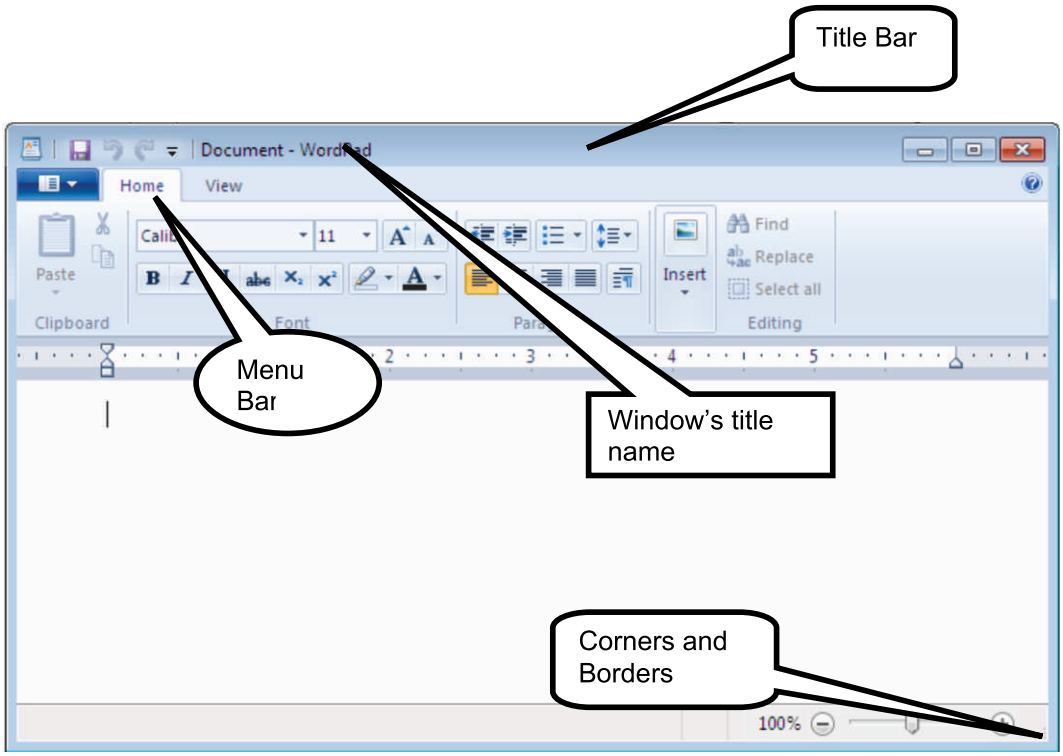


Fig 4.10

4. The Scroll Bars

Depending on the size of a window, the entire application may not be visible. When this happens the window is outfitted with vertical and/or horizontal scroll bars.

5. Corners and Borders

To resize a window, use the mouse and point to a windows border and corner.
The mouse cursor changes to a double arrow when positioned over a border or corner. Drag the mouse button to reshape the application windows.

6. Control Menu

The menu which appears when we click on upper left corner of title bar containing Restore/Maximize, minimize, and close options.
This can be done by using control button on the right most of title bar like:

Maximize / Restore

This button is used to enlarge the window and to restore the enlarged window to its previous size.

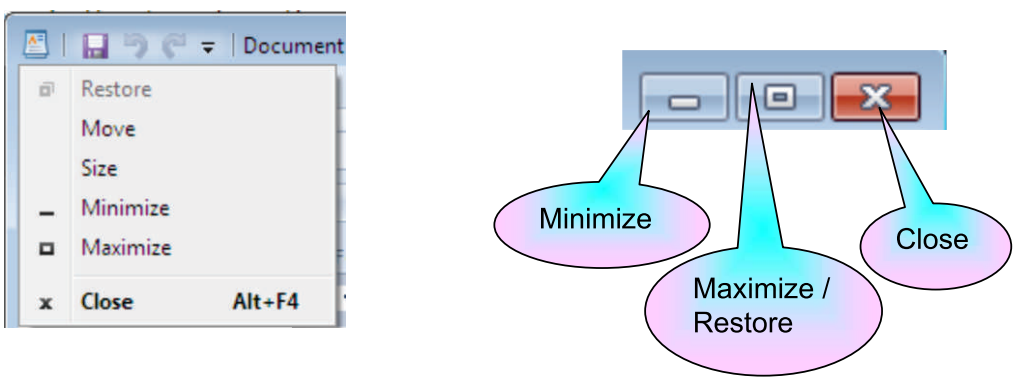


Fig 4.11

Minimize

This button shrinks the active window to the task bar.

Close

This button closes the active window from the desktop.

Exercise

1. Fill in the blanks:

a. Menus are located at _____bar.
b. The overall area of the window's screen is called _____.
c. Scroll bars are used to _____the workspace of window.
d. _____ is a graphic symbol representing a window element
e. _____ gives you access the last 15 documents opened.

2. Write 'T' for True or 'F' for false statements:

1. Windows is an operating system.
2. Using search you can search for a file, folder, of a computer.
3. Scroll bar is used to Scroll the screen up or down and left or right.
4. Many applications can't be open or running simultaneously.
5. Accessories can be accessed from start menu and programs.

3. Write short notes:

1. Shut down.
2. Run.
3. Help and Support.
4. Menu bars.
5. Accessories.

4. Answer the following questions:

a. What is Desktop?
b. What are the functions of minimize, maximize and restore button.
c. What is Icon?
d. What do you understand by windows?
e. What do you understand by title bar and menu Bar?

CHAPTER 5

BASIC WINDOWS ACCESSORIES

There are some very useful tools of windows like:

- Calculator
- Character map
- Notepad
- Date and time
- Paint

1. Calculator

Windows gives you the choice of both standard and scientific calculator for doing the calculations while working on the computer. As shown in figure

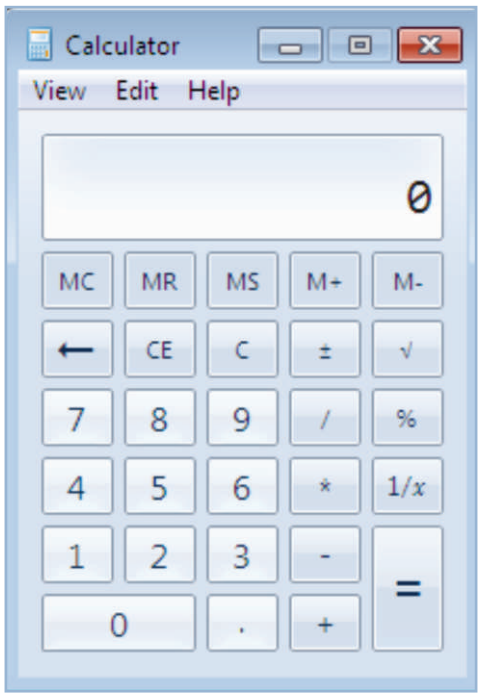


Fig 5.1 **Standard Calculator**

To Start Calculator

We can follow these steps :

- Click on Start All Programs Accessories Calculator
- The calculator has two types of views
  - Standard
  - Scientific

1.1 Standard

It has general view of calculator which perform simple mathematical operations like +, -, /, *, % etc. You can see above, the figure of standard calculator.

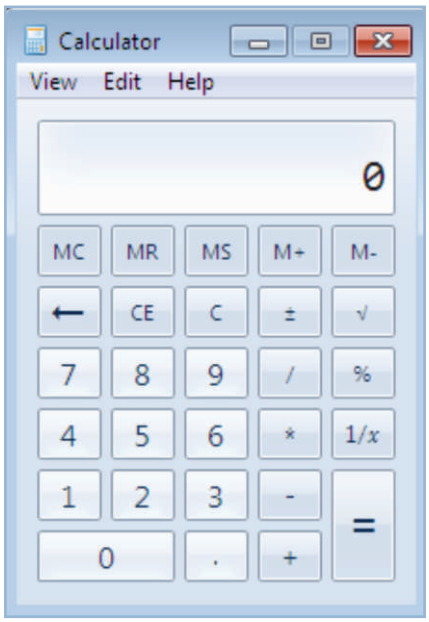


Fig 5.2 **Standard Calculator**

1.2 Scientific

It has some special extra buttons apart from the standard calculator buttons. See in figure

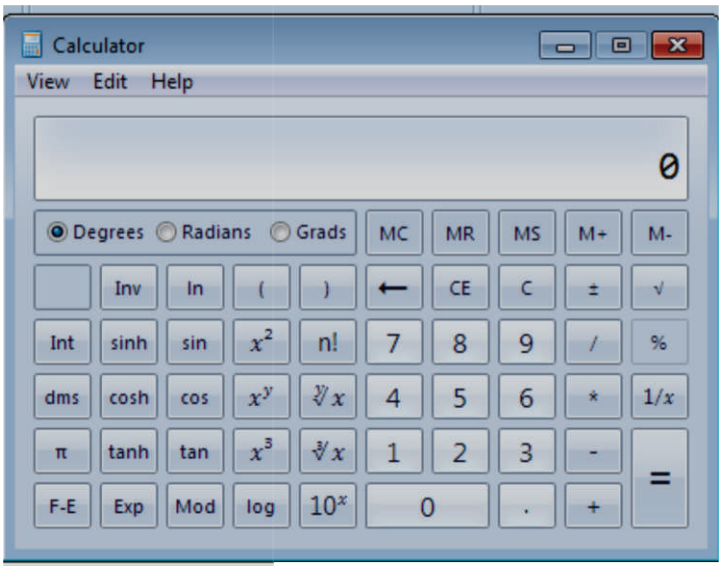


Fig 5.3 **Scientific Calculator**

You can see in figure there are many buttons like sinh, cosh, tanh, mod, Exp, π, etc.

1. The Character Map.

Character map is used to insert special character into a document. You can also open character map by clicking **Start**, pointing to **All Programs**, pointing to **Accessories**, pointing to **System Tools**, and then clicking character map character map works only with Windows-based programs. You can see in figure.

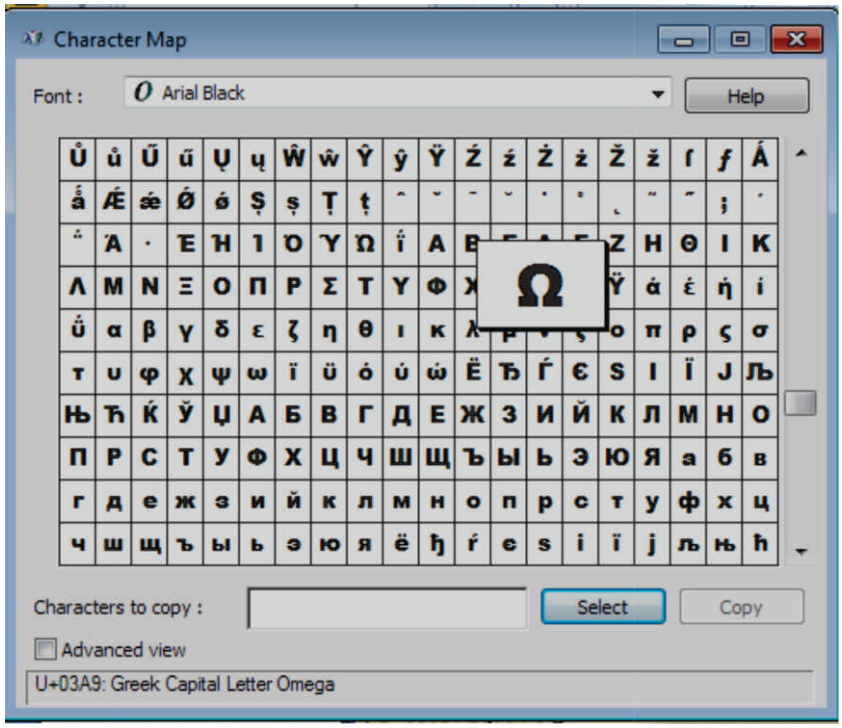


Fig 5.4

3. Date and Time

You can see or adjust the date and time of your system using date / time property. You can open this property from control panel using these steps.

Starts Control panel →Date / Time.

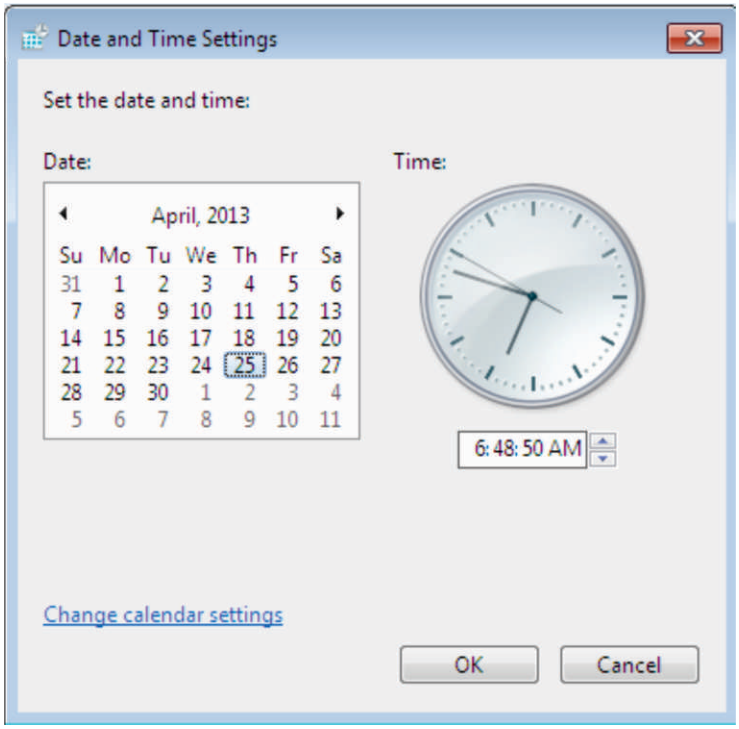


Fig 5.5

PAINT

Paint is a drawing tool provided by windows. It is used to make very simple drawings using various tools such as Brush, Lines, spray etc. You can add text to your images also. It is not a very effective tool for editing pictures.

The paint can be opened from

Start ➤ Program files ➤ Accessories ➤ Paint

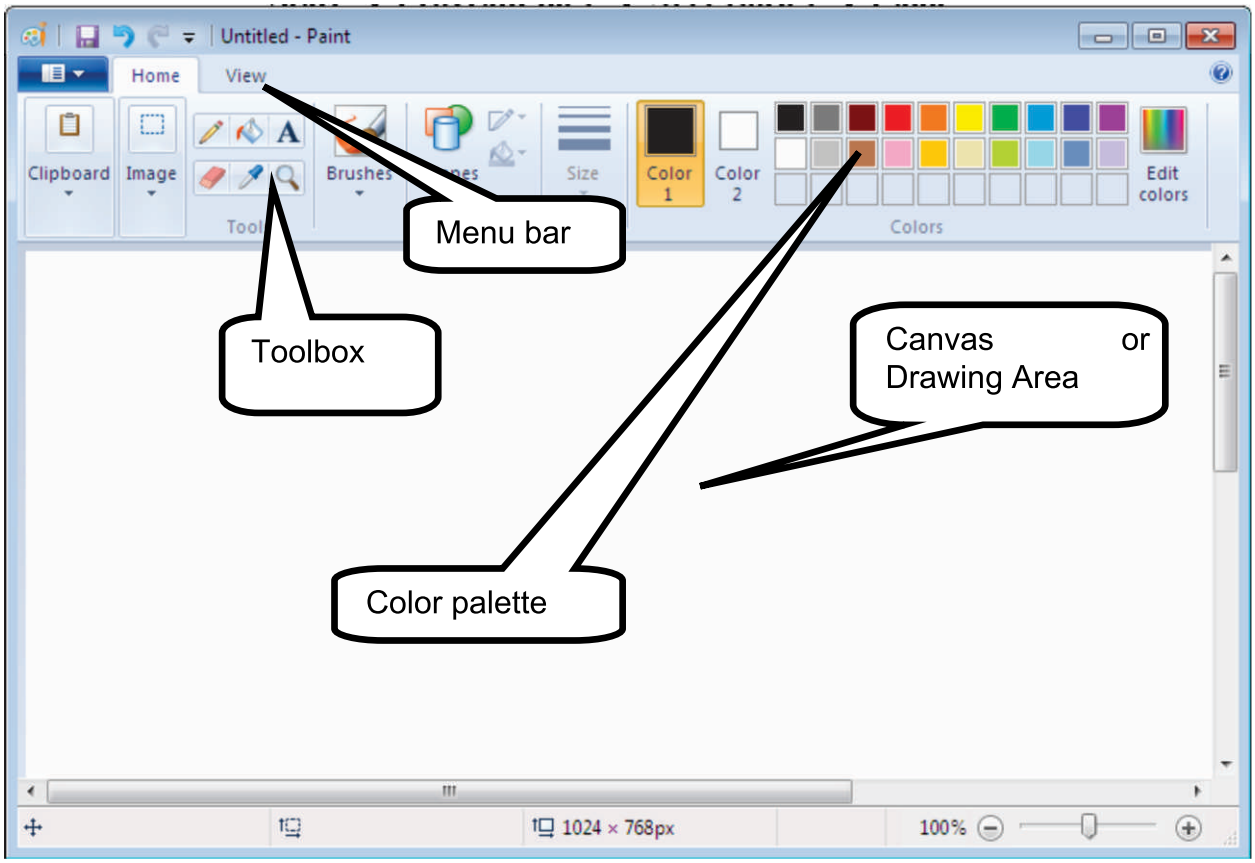


Fig 5.6

The paint contains three main tools for drawing as in figure:

1. Canvas
2. Tool box
3. Color palette

1. Canvas

The drawing area provided for the user for drawing objects. The tools of toolbox are used here for drawing.

2. Tool box

The box that contain all the drawing tools like pencil, fill color, etc
As shown in the figure above.

Description of Tool Box items

1. **Select**
   This tool is used to select the rectangular region of the picture.
2. **Eraser**
   This is used to erase the part of the picture.
3. **Fill color**
   The fill color tool is used to fill the desired color in bounded region of Picture.
4. **Magnifier:**
   We can see the enlarge view of a picture.
5. **Text:**
   We can insert text on the picture using text tool.
6. **Curve:**
   We can draw line, rectangle, polygon, and ellipse/ circle using different tools like line, rectangle, polygon and ellipse respectively.

3. Color palette

Color palette contains several colors, we can select colors from the palette to use it in picture.

Drawing with paint

1. To draw picture, first click left mouse button over the brush or the pencil tool in the toolbox.
2. Move the pointer on to the screen. Keep the left mouse button pressed all the time as you draw.
3. To clear the screen and start again , hold down the Ctrl and Shift along with N on the keyboard.

Coloring with paint

1. To color a picture, first click on the fill color tool in the toolbox.
2. Next choose the color from the paint box at the bottom of the screen by clicking the left mouse button on it.
3. Move the pointer over the screen. It will change into the fill color tool. Put its tip over the area you want to color and click.

Menus in paint

There are six menus in paint for various purposes as

1. **Home**

2. **View**

1. Main Menu:

The file menu contains options like New, Open, Save, Save as, Print preview, Print etc.

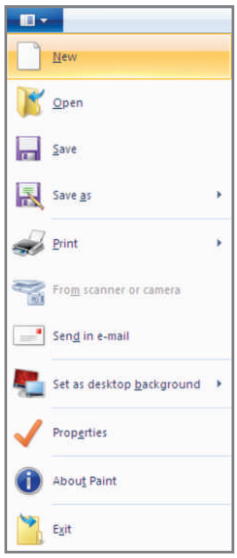


Fig 5.7

- New is used to create a new file in paint.
- Open is used to open a file that is already exist in computer memory.
- Save is used for save a file in the disk.
- Save as is used to prepare another copy of file.
- Print Preview is used to see the preview of file before printing.
- Print is used to take the print out of file from the printer.

2. Home Menu:

The home menu contains options like Cut, Copy, Paste, crop, resize, rotate etc.

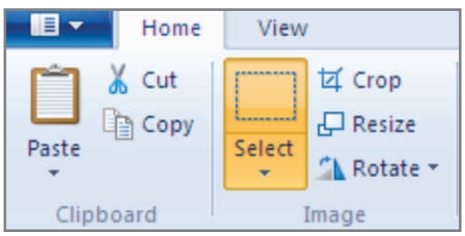


Fig 5.8

- After selecting the matter we can cut / copy to paste it at different location.
- Select all is used to select whole picture at a time.
- Crop is used to cut image as per need
- You can change the size of image
- rotate is used to rotate a picture by given angle.

3. View Menu:

The view menu contains Zoom in, Zoom out, Rulers, Grid lines, Status bar etc.

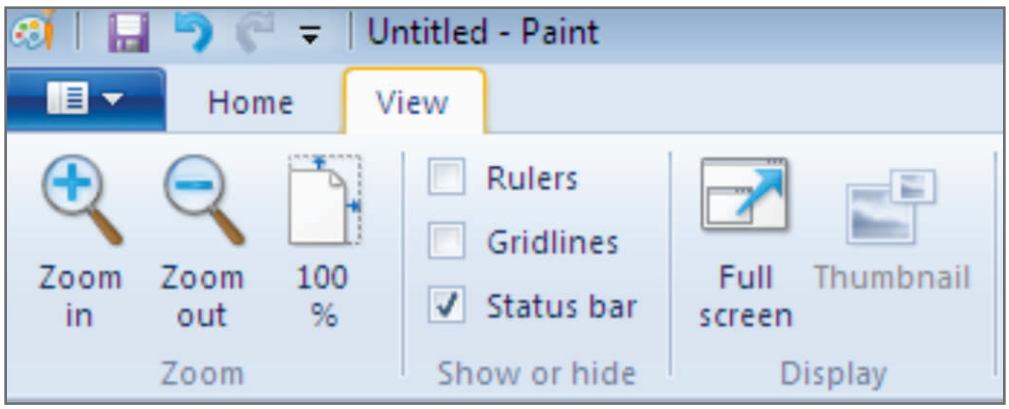


Fig 5.9

- Rulers displays rulers on the window
- Gridlines helps to draw image according to scale
- Status bar displays help of the activated option

Notepad

Notepad is a built- in windows text editor, which is used to write application, letters, short notes, etc. The extension of notepad file is ".txt." It is also used to write source code of the web designing languages like HTML, DHTML etc.

Starting of the Notepad

To start notepad you have to follow these steps:

- Click on the Start button.
- Type notepad on the search box
- Click on the notepad.
- The following notepad program displays its window containing title bar, menu bar and work area with a new document.

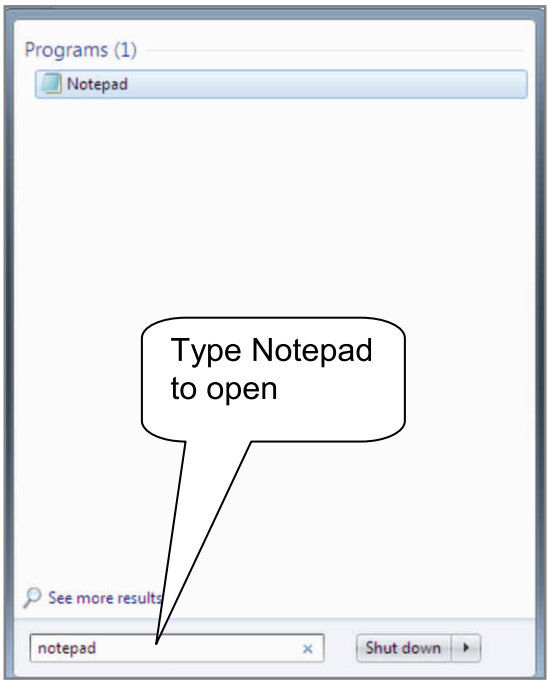


Fig 5.10

Once the text is typed it can be saved, printed or formatted as per the requirement using the commands of menus available in menu bar.

The notepad contains five menus as File, Edit, Format, View and Help.

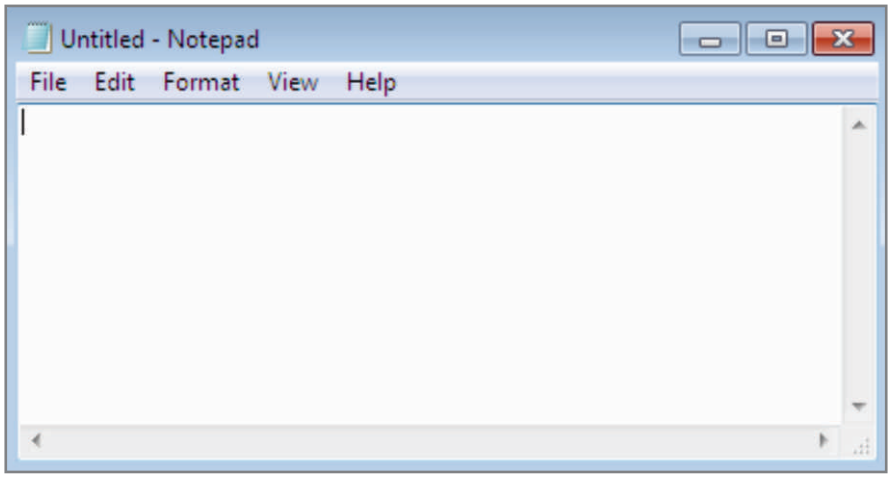


Fig 5.11

The File Menu

This menu bar has the commands to open a new or existing file, save or print it and set or change the page settings etc.

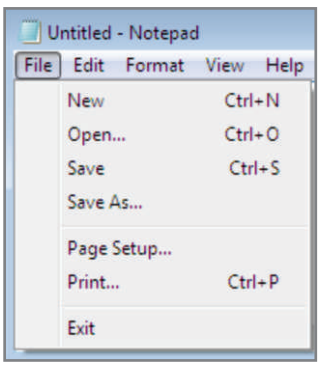


Fig 5.12

- Click New to open a new untitled file.
- Click Open to open the existing file.
- Click Save to save the file by giving the file name or an existing file with same name.
- Click Save As command to save the opened file with the new name.
- Click Page Setup option to change the page setting like margins, orientation, etc.
- Click Print command to print opened file.
- Click Exit to close the notepad program.

Opening a file in Notepad:

To open an existing file click on File →Open.

A dialog box will appear as shown in figure.

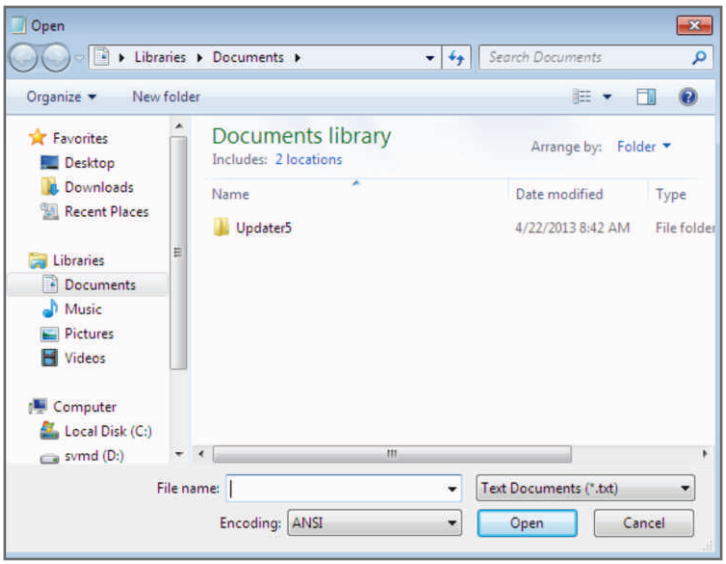


Fig 5.13

Saving a document

To save a file in notepad click on, File ⇨Save

A dialog box appears as shown below.

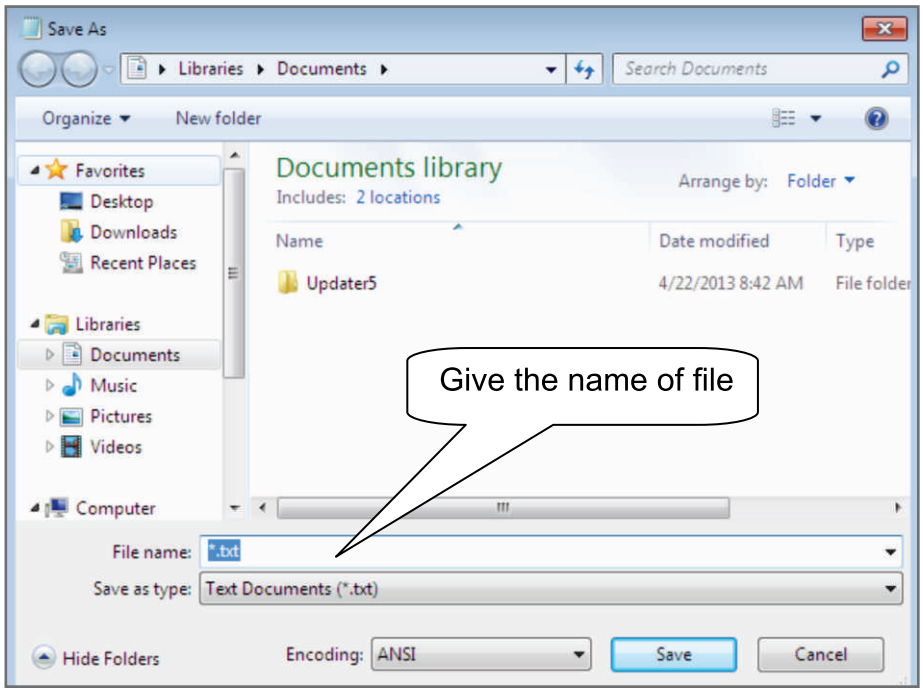


Fig 5.14

Printing the document

To print the opened document click on File ⇨ Print command in notepad.

Edit menu

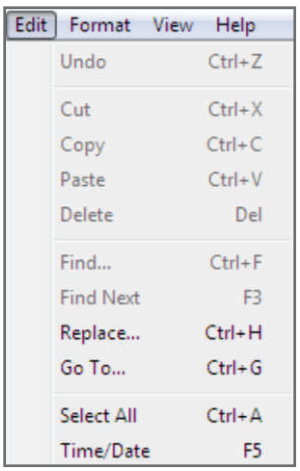


Fig 5.15

This menu is used to Cut, Copy, Paste, or Delete the selected part of the opened document.

And Select All is used to select whole document at a time.

You can see in this figure:

- **Undo** is used to take the effect return of the just used command.
- **Cut** is used to move the selected text anywhere in the same or different document.
- **Copy** is used to make the Duplicate copied of any matter anywhere in the same or different document.
- **Paste** is used to insert cut or copied part of text.
- **Delete** is used to delete selected text
- **Select All** is used to select the whole text at a time.
- **Time / Date** is used to insert current date and time.

Format Menu

This menu is use to distribute text into lines and set Font styles of the text.

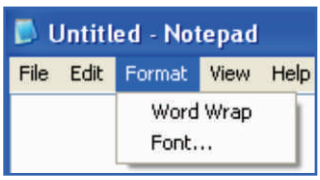


Fig 5.16

- **Word Wrap** is used to distribute the text into lines.
- **Font** option is used set any font, font style, and size of document.

Cut and Paste

To cut and paste follow these steps:

- Select the text or a part of text is to be cut.
- Click on Edit ⇨ Cut.
- Move the cursor to the required location where text is to be paste.
- Again click on Edit ⇨ Paste.

Copy and Paste

To copy and paste follow these steps:

- Select the text or a part of text is to be cut.
- Click on Edit ⇨ Copy.
- Move the cursor to the required location where text is to be paste.
- Again click on Edit ⇨ Paste.

Changing font, font style, and font size

To change the font, font style and font size follow these steps:

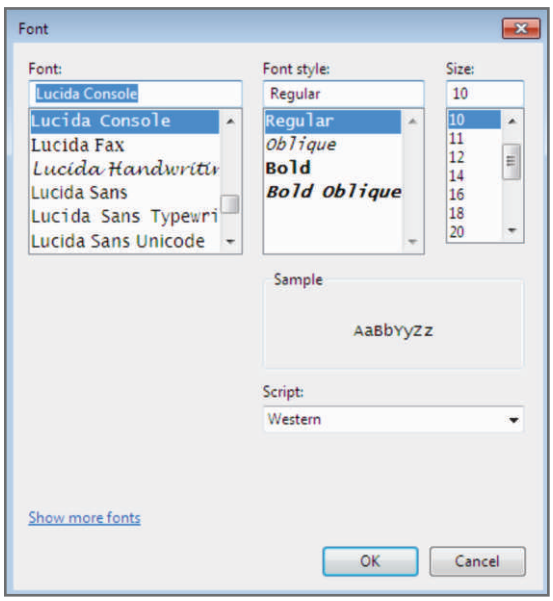


Fig 5.17

- Click on Edit ⇨ set font.
- A font dialog box appears.
- You can select font, font style and size from the lists provided in the dialog box.
- Click OK after selecting the font attributes.

Exercise

1. Choose the right answer :

a. The desktop may contain a -
(i) background (ii) Only red color (iii) Output device (iv) None of these

b. The bar that is generally found at the bottom of screen -
(i) Taskbar (ii) Toolbar (iii) Status bar (iv) All

c. Shut down means -
(i) Close or restart window (ii) Store data (iii) Save data (iv) None of these

d. Solitaire is a -
(i) Game (ii) Song (iii) Picture (iv) All

e. Choose the name of the text Editor -
(i) Notepad (ii) Paint (iii) Image (iv) Coral Draw

2. Fill in the blanks:

a. A_____ tool is used to select a part of an object in rectangular shape.

b. To type the text _____ tool is used.

c. _____ tool is used to erase the part of the picture.

d. By default an extension _____is added to a notepad file.

e. The just deleted text can be undeleted using _____ command.

f. The codes of HTML language can be written in _____document.

g. _____ properties is used to change the system date or time.

3. Write 'T' for true and 'F' for false for following statements:

a. Any picture can be inserted into Notepad.
b. Notepad is not a word processor.
c. Notepad is able to change the font style of the typed text in it.
d. Time / date command of edit menu is used top insert the current system time and date in any opened document.
e. Polygon tool is used to write the text.
f. Magnifier tool is used to erase the lines and colors.

4. Write short notes:

a. Time /date command in notepad.

b. Cut and paste.

c. Copy and paste.

d. Saving in notepad.

e. Standard and Scientific calculator.

5. Answer the following questions:

a. What is Notepad?

b. Define the Save and Open command in paint.

c. Define the cut, copy, paste commands.

d. What does a text tool do in paint?

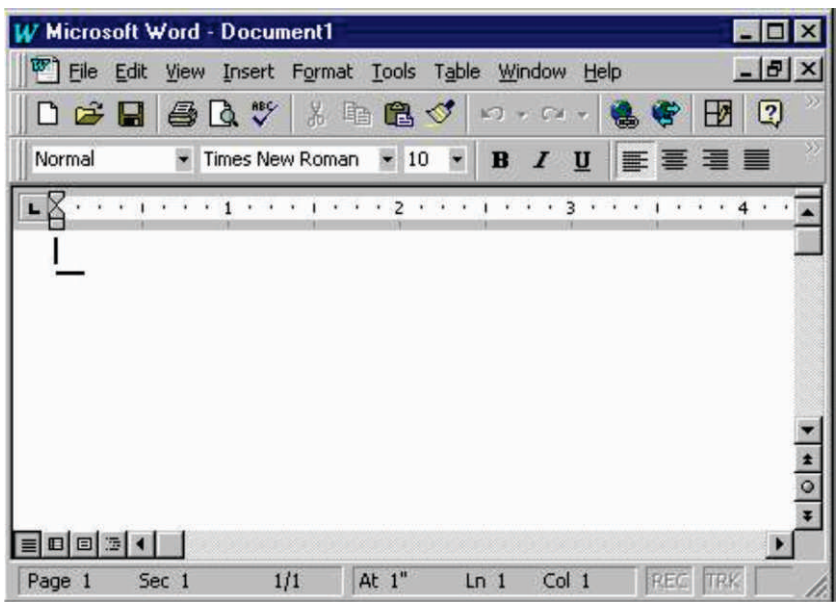
e. Define a font, font style, and size.

f. What are the uses of View menu in paint?

g. What is the use of Date / Time properties.

6. Hands on practical:

- Draw an object and scatter blue color in it.
- Draw a rectangle and fill yellow color in it.
- Draw a polygon in pentagon shape and fill different colors.
- Write a letter in three paragraphs.
- Change the font, font style, and size of it.



CHAPTER 6

INTRODUCTION TO MICROSOFT WORD

A word processor is a software package that process textual matter and creates organized documents. It has all the features that a conventional typewriter has, apart from typewriter.
Microsoft word popularly known as MS Word is a popular word processing software.

STARTING WORD

To start word, follow the steps given below:

- Click on the start button in the task bar.
- Move the pointer toAll programs in the start menu.
- In the All program menu move the pointer to Microsoft Office. And click on the Microsoft Word.

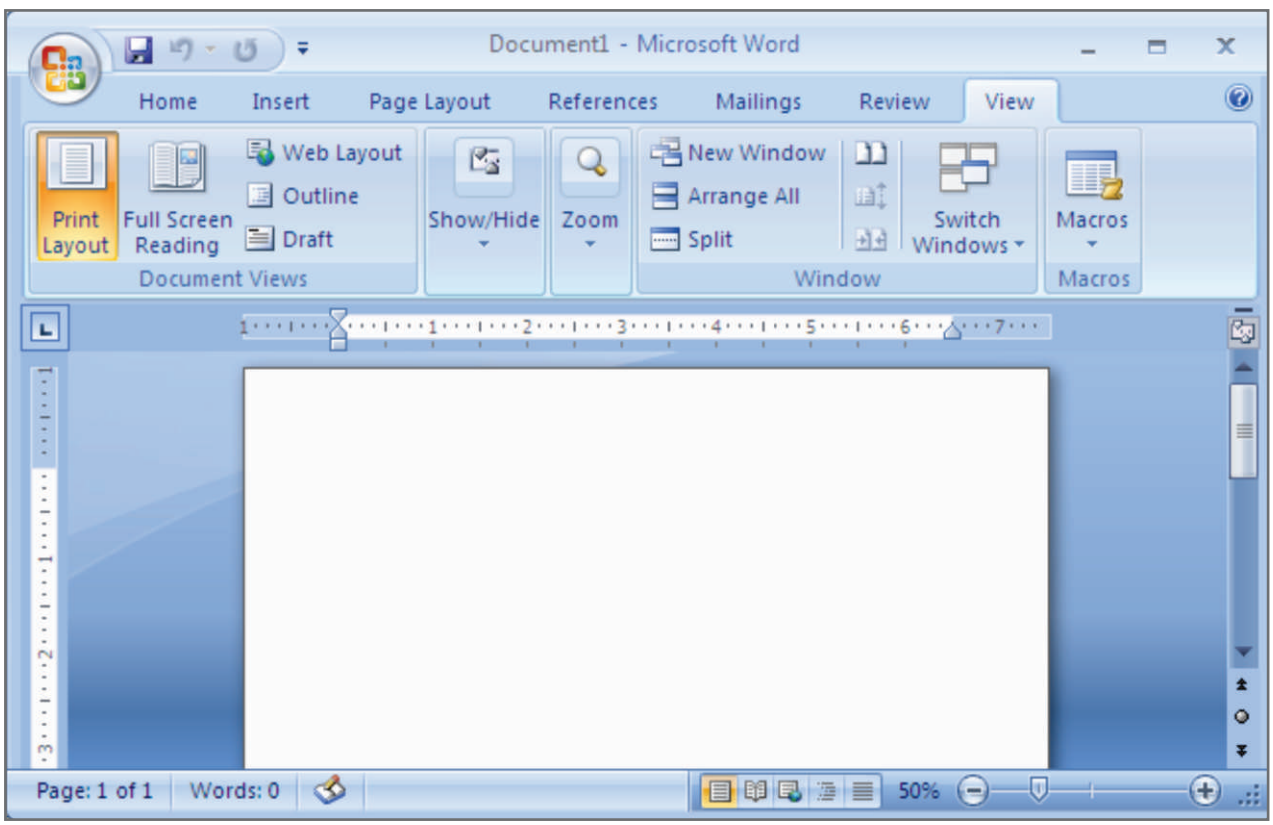


Fig 6.1

Parts of word screen

The MS- word screen also known as the document window, appears on your screen. The cursor appears on the first line and first column in the work area for you to start typing the text in the document.

The Word screen contains following components

Title Bar

Title Bar is at the top of the window. It displays the control menu icon, the name of the program, the name of the current active document, and the three buttons, namely, minimize button, maximize or restore button and close button.

Menu Bar

It is placed just below the title bar. It contains the names of various menus like Home, Insert, Page Layout etc. Each of these contains different menu's tools.

Formatting Tool Bar

Formatting toolbar shows shortcuts for the tools related to formatting of the text in the document. These toolbar help to perform task easier and faster. It contains icons like Font, Size, bold, italic, underline, and alignment options.

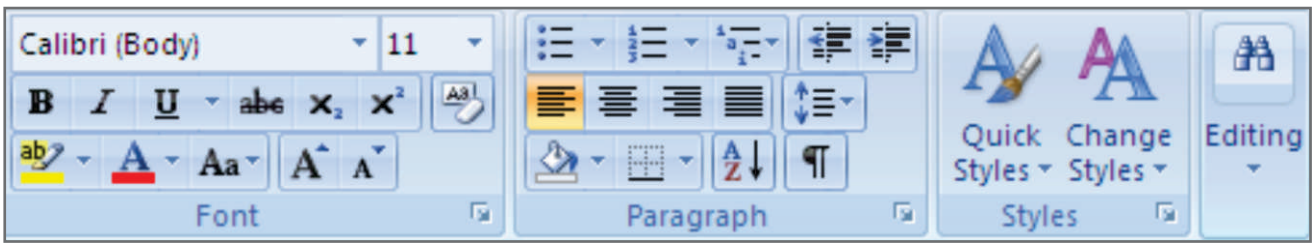


Fig 6.2

Ruler

The ruler bars are present on the top and the left side of the document. These are used to set the margins of the document, as well as set the tab stops and indents.

Status Bar

Situated at the bottom of the word screen, the status bar displays the information about the current active document or the task that you are currently performing. For example the page number, line number etc. in which the cursor is currently positioned.

Scroll Bar

The word document window has two scroll bars i.e. horizontal scroll bar and vertical scroll bar. The horizontal scroll bar is used to move the document horizontally, while vertical scroll bar moves the document vertically. The vertical scroll bar has four buttons;

Those with single arrows scroll the document up and down one line at a time. Those with double arrows scroll the one page at a time.

Creating a New Document in MS-Word

To create a new document in ms word, follow these steps:

Click on Office Button to open the menu.

- Select the New option from the office button. A dialog box is appeared as shown in figure.
- Click on the Blank document icon.
- Now a Blank document is available for your work.

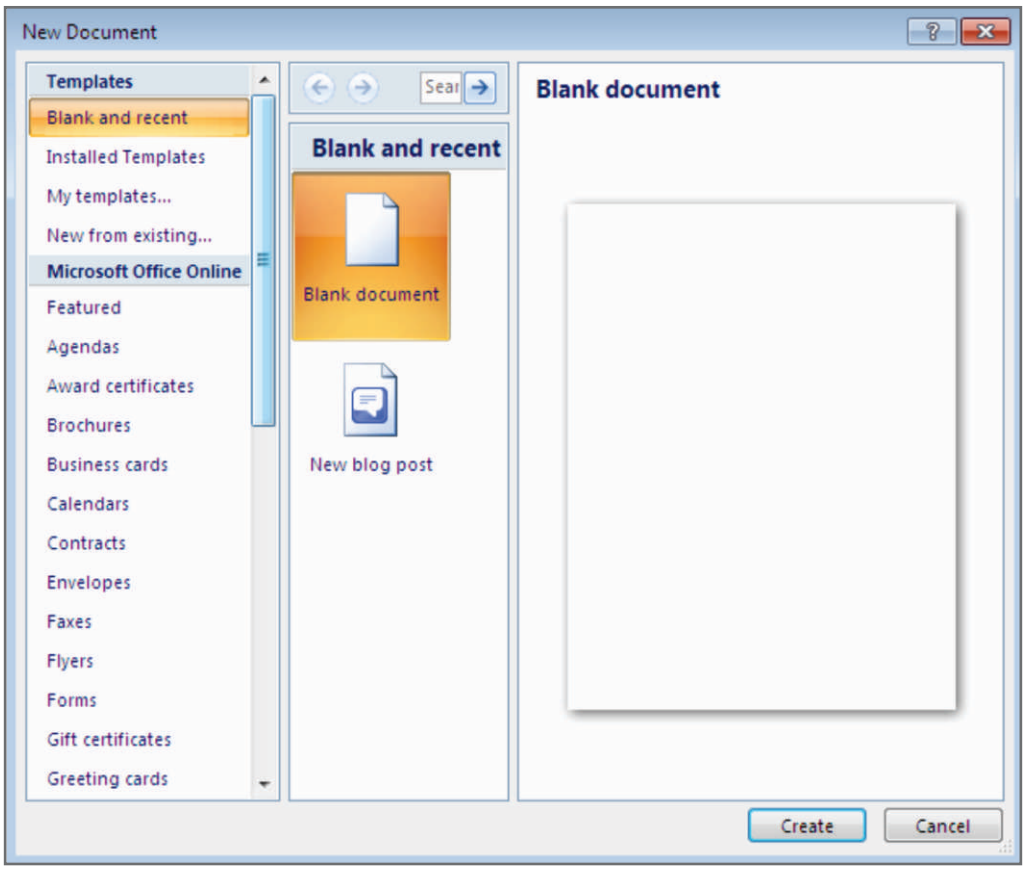


Fig 6.3

Saving a Document

When a document is typed. It is stored in the computer memory. To be further use it must be saved in the disk. To save a document, follow these steps:

- Click on office button.
- Select the Save button from the appeared menu.
- The Save as dialog box will appear as shown in the figure
- Select appropriate folder to save your file.

- Give a proper file name to save your document. Click on save button. The document will save with the specified name. By default, a word document is saved with .docx extension.

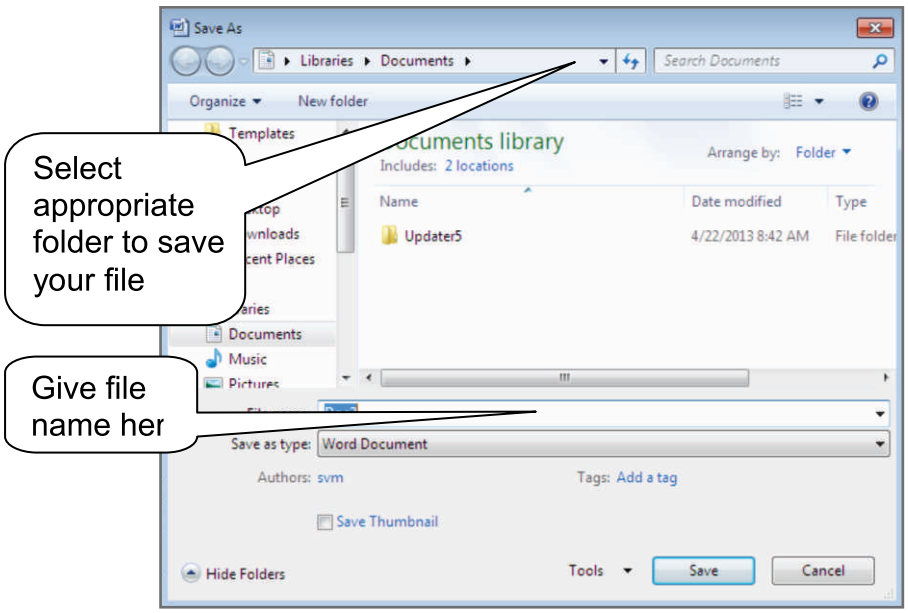


Fig 6.4 **The Save As Dialog Box.**

Opening an existing document

The steps to open an existing document are as follows:

- Click on office button to open the file menu.
- Select the open option from the menu.
- An Open dialog box will appear on the screen. As shown in figure.

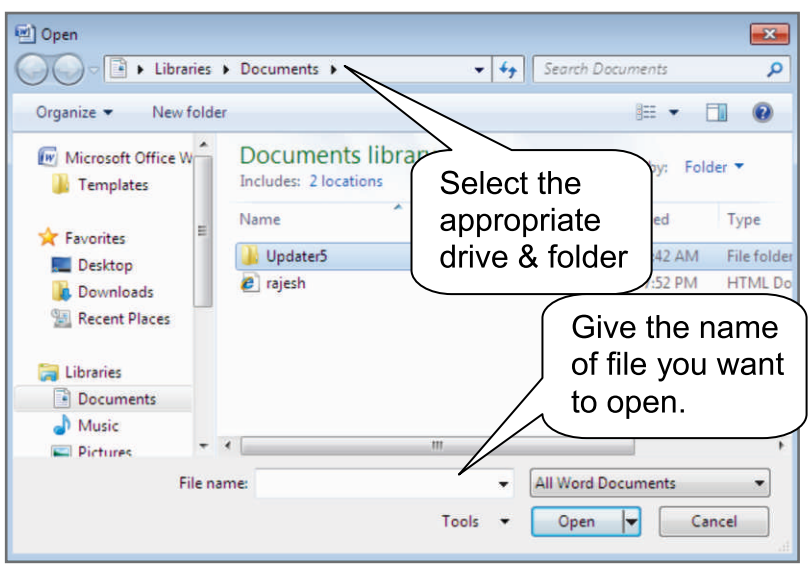


Fig 6.5 **The Open Dialog Box.**

- Select the drive and folder in look in box where required file is located.
- Select the file from the list or type the name of the file in the file name box.
- Click on the open button.

Cursor movement

To move around in word document, arrow keys left, right, up, and down can be used. However, there many other keys and key combinations available in word for navigation.

The scroll bar can be used in various ways to scroll through document. As shown in figure.

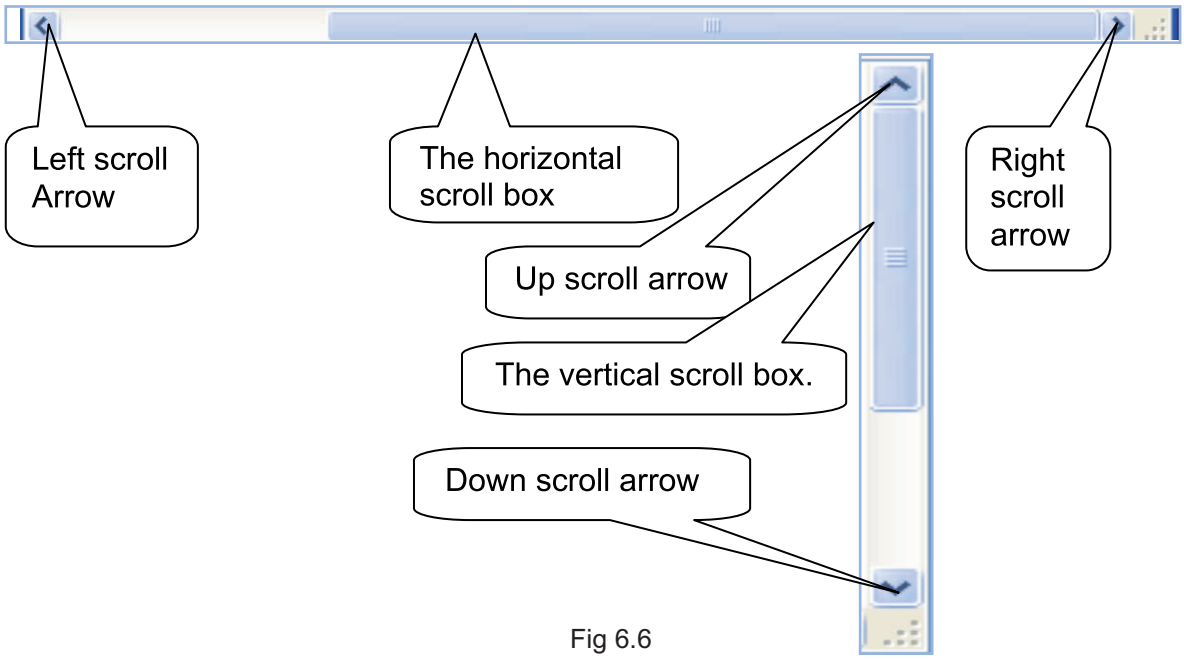


Fig 6.6

Entering and editing text

Entering text

To creating a new document, a blinking vertical line called cursor can be seen in the workspace. The cursor shows position where text will be typed. Start entering text by pressing keys on the keyboard.

Press the < Enter > button to come to the next line if you want to change the paragraph. The text will come in the next line automatically, as you continue typing. This feature is known as word wrap.

Selecting text

Either using the mouse or the keyboard can select a part of text.

Selecting text with mouse

To select a part of the text using mouse, click the left mouse button at the beginning of the to be selected and while holding it down drag the mouse to the end of the text. The desired text gets selected and highlighted.

Selecting A Text With Keyboard

To select a part of text using keyboard, bring the cursor to the beginning of the text to be selected. Hold the shift key and press the arrow key to move the cursor to the end of the text the text gets selected and highlighted.

Editing text

Editing means making changes in the already typed text. To do any editing in the text, the text need to be selected. You can select the text to be edited either by using mouse or keyboard and then make changes by using the editing tools described as follows.

Cut and Paste

If we want to move a part of text from one location to another we can make use of cut and then paste options. To move text from one location to another follow these steps.

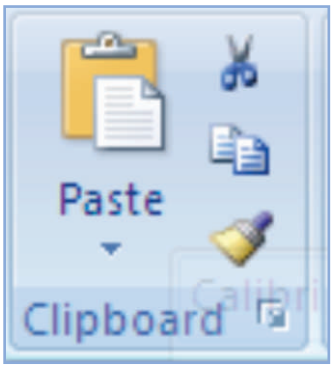


Fig 6.7

- Select the text to be cut.
- Click on the Home menu.
- Click on Cut option or you can click on the cut icon of standard tool bar.
- The selected text will be disappearing.
- Move the cursor to the location where text has to moved.
- Again click on Home in the menu bar and click on Paste option.

Copy and Paste

If you want to retype a part of text at another location then it can be done by copy and paste operations. To copy text from one location to another, follow these steps:

- Select the text to be copied.
- Click on Home menu.
- Click the copy option or you can click on copy icon on the standard toolbar.
- Move the cursor to the place where the text is to be copied.
- Again click on Home menu then click on Paste option.

The selected text gets copied in the new location.

Exercise

1. Fill in the Blanks

a. _____ in the document window displays the page number Where the cursor is currently placed.

b. Microsoft word is a _____.

c. The ruler bars are present on the _____and the _____ side of the document.

d. The horizontal scroll bar is used to move the document _____.

e. Menu bar contains the names of various _____.

2. Write 'T' for true and 'F' for False statement.

a. A text must be selected to copy it.

b. Standard toolbar contains the Print icon.

c. Formatting toolbar contains the print preview icon.

d. After copy you can paste the text anywhere in the document.

e. The status bar displays the information about the current active document.

3. Write Short notes

a. Cut and Paste.

b. Copy and Paste.

c. Cursor movement.

d. Parts of window screen.

e. Selecting text with Mouse.

f. Selecting a text with Keyboard.

4. Answer the following questions.

a. What is word processing software?

b. Write the steps to open a new document in word.

c. How can you move a text from one position to another in a word document?

d. Write the steps to save and open the document in MS-Word.

e. Explain different type of Bars in Ms-Word.

5. Hands on practical

Open a new document in Ms word. Observe the word screen Carefully. Do the following.

- ✓ Type a paragraph of your note book in word.
- ✓ Save file with the name “My Paragraph”.
- ✓ Draw the title bar in your notebook.
- ✓ Draw the sketch of standard tool bar in your notebook.

CHAPTER 7

THE FORMATTING AND PRINTING IN WORD

The process of changing and controlling the look of a document is known as formatting. Formatting of a document includes changing the size and style of letters, making some text bigger or border, adjusting the line and paragraph spacing, changing the alignment of text with respect to the page margins, and setting the page margins etc.

You can apply formats to specific characters like headings, titles to large section of the text (like paragraph) or to the entire page or document. So, the process of formatting in MSWord is divided into three parts.

- Character formatting
- Paragraph formatting
- Page formatting

Character formatting

To enhance the appearance of the document, character formatting plays a very important role. It includes changing the font type, size, color of the text and making the text **Bold**, ***Italic*** or **Underlined.**
By using the formatting tool bar or Font dialog box character formatting can be applied.

How can we change the Font style?

Font represents a style of characters in which text is displayed in the document. Different fonts contain different collection of characters and symbols.
To format the characters in word, follow these steps:

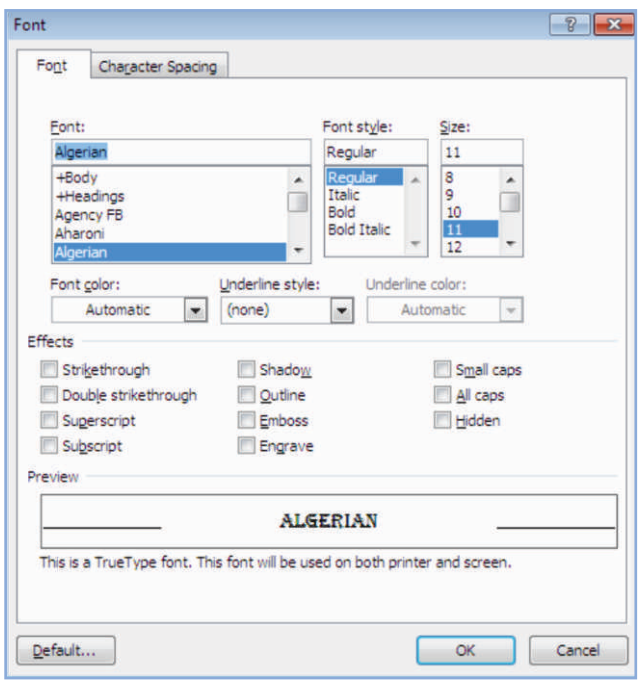


Fig 7.1

- Select the text whose font is to be changed.
- Click on the Home menu.
- Select the Font option from the appeared Tool a drop down list appeared.
- The Font is displayed in this figure with the bounded region of dots.
- Select the font from the list by clicking on it. The font type gets applied on it.

How can we change the Font Size?

The Font size is used to increase or decrease the size of letters. It is measured in points. Points are used to measure character height. A inch contain 72 points.

The steps to change the font size are:

- First of all select the text whose font size has to be changed.
- Click on the Home menu.
- A Font dialog box appears in which you can select the required font size. And click on Ok.
- The font size gets applied on the text.

You can change the font size from formatting toolbar also. As shown in figure

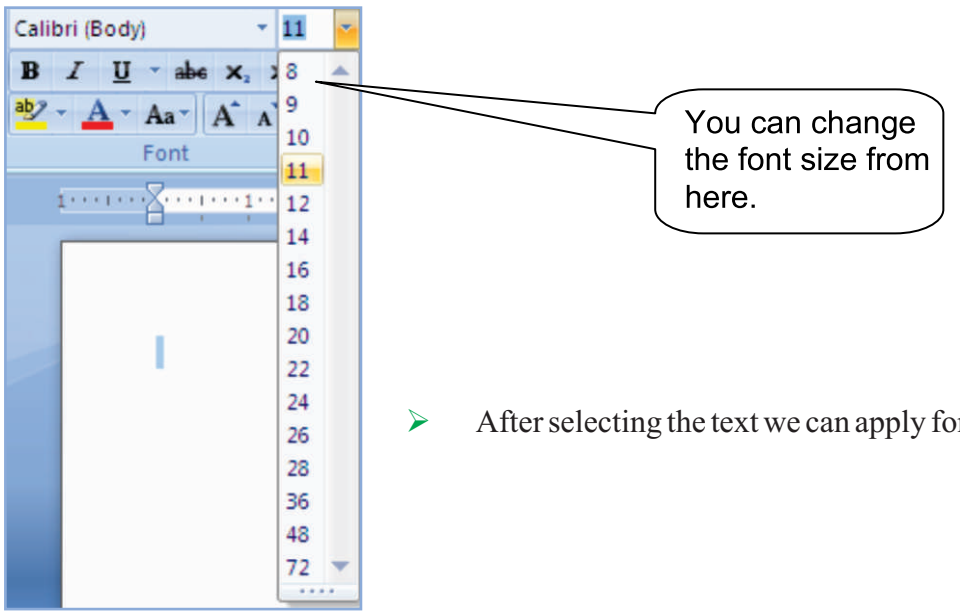


Fig 7.2

- After selecting the text we can apply font size from the formatting toolbar.

How can you change the character attribute?

The Bold, Italic or Underlined are used to enhance the character's importance. It is used, so that the document reader knows that they are emphasized.

To apply these attributes, follow these steps:

- First of all select the desired text.
- Click on Home menu in menu.
- A dialog box will appear.
- Select the font attributes like Bold, Italic, or Underlined.

The character attributes can be applied by formatting tool bar also. As shown in figure

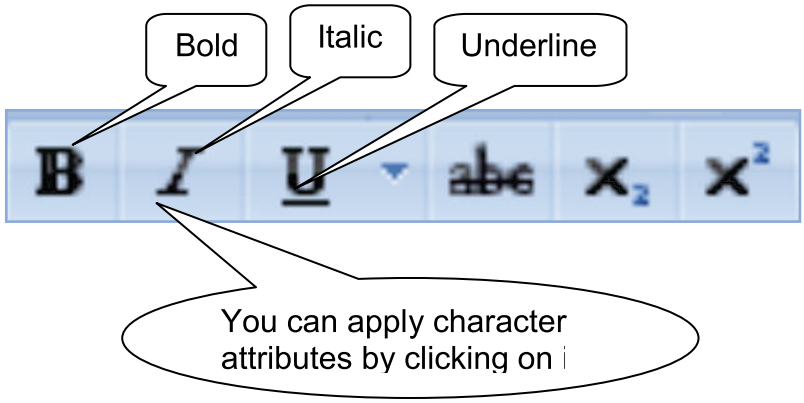


Fig 7.3

Paragraph Formatting

The text followed by the enter key is a paragraph. Paragraph formatting is one factor that contributes the most to the final appearance of the document

The paragraph formatting includes: text alignment, tab stops, paragraph indentation, line spacing, and border and shading.

Text Alignment In Word

MS-Word offers you four types of text alignments as Align left, Align right, Center, and Justify.

To change the alignment you can select the text and then click on the alignment button on the formatting tool bar. As shown in figure

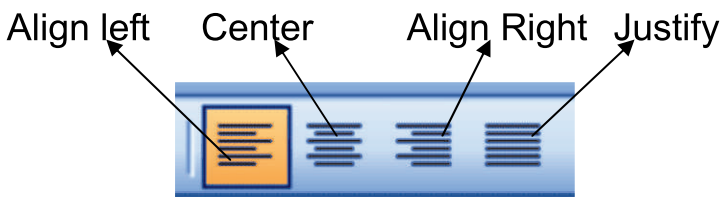


Fig 7.4

Left Alignment

If the text is aligned to the left margin of page, it is called that text is left aligned. To left align the text put the cursor in the paragraph and click on the left align button on the formatting tool bar. Left is default mode of alignment. As shown in figure

Modem is a device attached to computers that can convert digital signal to analog.

Center Alignment

The text is called centered align, when the text is reside in center between the left and right margin of the page. To center a line or paragraph, position the cursor any where in the paragraph, and click on the center button on the formatting tool bar. As shown in figure.

Modem is a device attached to computers that can convert digital signal to analog.

Right Alignment

If the text is aligned to the right margin of page, it is called that text is right aligned. To right align the text put the cursor in the paragraph and click on the right align button on the formatting tool bar. See figure.

Modem is a device attached to computers that can convert digital signal to analog. Modem is a device attached to computers.

Justify

Justify aligns a paragraph on both left and right margins. In this type of alignment, the spacing between words is adjusted so that each line of text begins at the left margin and ends at the right margin. To justify a text, put the cursor anywhere in the paragraph, and click on the justify button on the formatting toolbar.

Justify aligns a paragraph on both left and right margins. In this type of alignment, the spacing between words is adjusted so that each line of text begins at the left margin and ends at the right margin.

Print Preview

This option shows how a document will appear on the paper, without taking the actual print out of document.

To see the print preview we have to follow these steps:

- Click on the Office Button in the menu bar.
- Click on the print preview option in the drop down menu.
- Or click on the print preview button present on the standard tool bar.

Printing a Document

After typing, editing and formatting the document you can see the print preview. If you are satisfied with document, you can actually print it to get a hard copy on the paper.

To print the document follows these steps:

- Click on office button. To open the Print menu.
- Click on print option in the file drop down menu.
- A dialog box appears as shown in this figure.

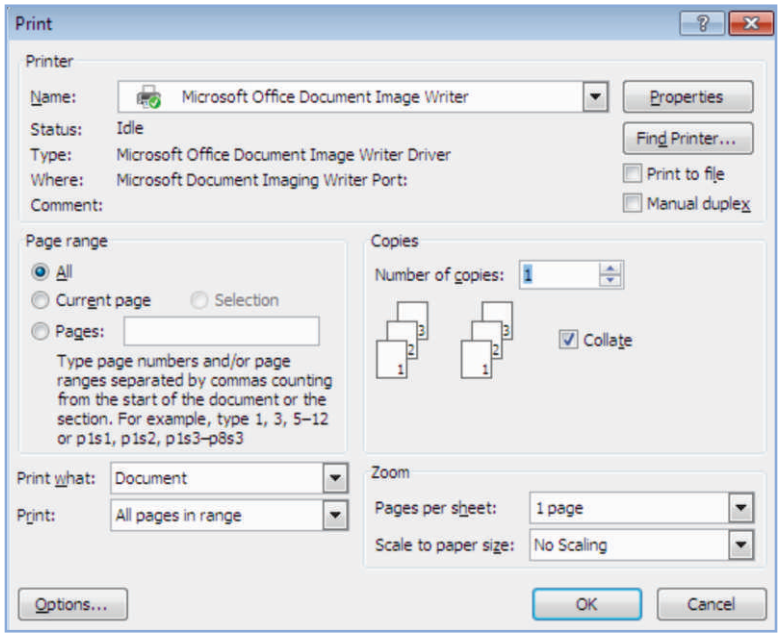


Fig 7.5 **The Printing Dialog Box.**

You can choose the page range by clicking at any of the radio buttons as described in the following table:

Page range, Radio Button	Description
All	Prints the whole document.
Current page	Prints the page where cursor is present currently.
Pages	Prints the specified page or a series of pages.

- Type the number of copies to be printed in the number of copies box.
- Click at the OK button to start the printing job.

Exercise

1. Fill in the blanks:

a. Points are used for measuring _____height

b. _____ radio button is used to print the whole document.

c. _____ radio button is used to print selected matter.

d.  icon is used to _____ the text.

e.  icon is used to _____ the text.

2. Write 'T' for true and 'F' for the false statements:

a. To emphasize certain words we can make them Bold or Italic.

b. To print a document, click on print preview icon in the formatting toolbar.

c. Justify aligns a paragraph on both left and right margins.

d. Pages radio button prints the specified page or a series of pages.

e. The Font size is used to only increase the size of letters.

3. Match the following:

(A)	(B)	
a. Center aligned	I.	
b. Justify	II.	
c. Bold	III.	
d. Right aligned	IV.	
e. New	V.	

4. Answer the following questions:

a. Explain the different types of text alignment.

b. What is the purpose of Print Preview?

c. How can we change the Font style?

d. How can you change the Font size?

e. How can you print a document?

5. Hands on practical.

- ✓ Type a paragraph in a word document.
- ✓ Apply the font Ariel black to the typed text.
- ✓ Make the font size of the typed text as 15 pt.
- ✓ Apply the center alignment to the title of paragraph.
- ✓ Make the title Bold and underlined.
- ✓ Make the paragraph justified aligned.

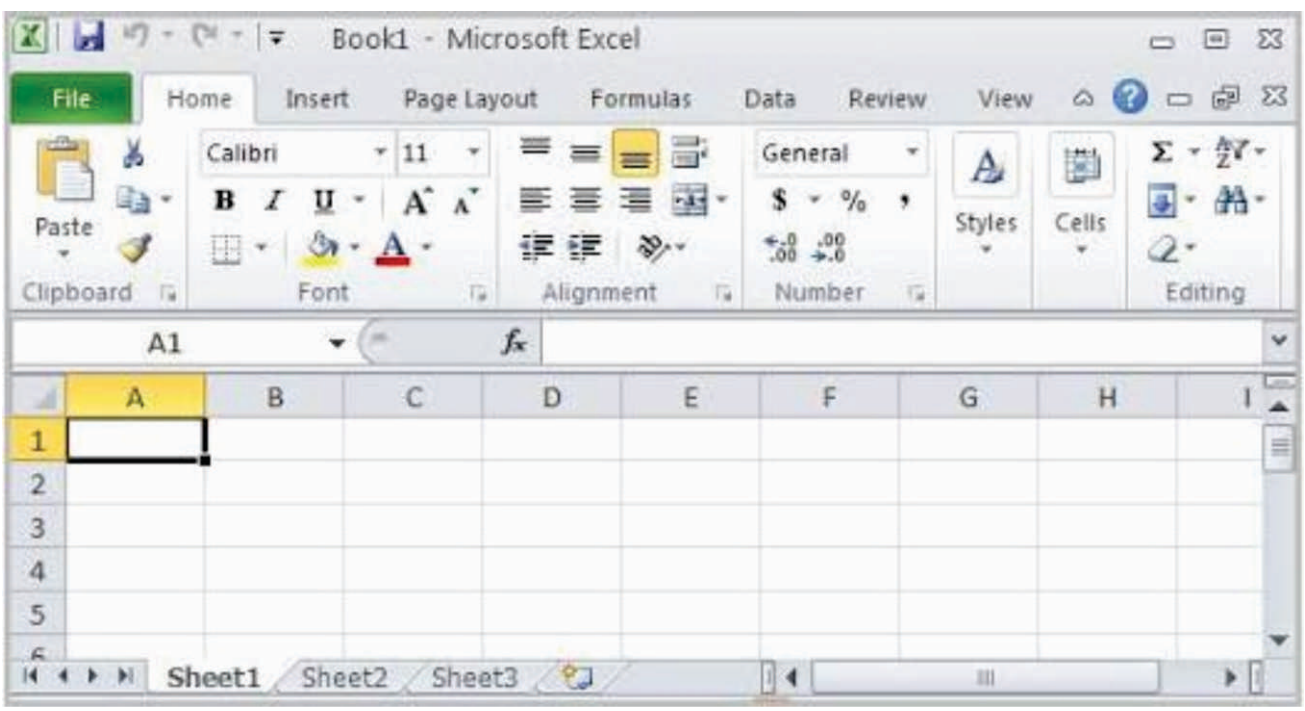


Fig 7.6

CHAPTER 8

INTRODUCTION TO MS EXCEL

Electronic Spreadsheet

An Electronic spreadsheet is a group of rows and columns. Each row is given a unique number such as 1, 2, 3, etc. Each column is identified by a unique alphabet or pair of alphabets A, B, C, etc. It is also known as worksheet/spread sheet.

Suppose we want to make a marksheet on the paper. We will first create a table in the form of rows and columns. Thereafter, we will write the titles and sub-titles. Now write down the marks obtained in various subjects as shown below :

Mark sheet for the month of April	
Subject	**Marks**
English	75
Maths	70
Physics	80
Chemistry	65

A table looks exactly like an electronic spreadsheet.

Popular Spreadsheet Packages

The popularly used spreadsheet packages are:

- Ms excel
- Lotus 1-2-3
- Calc.
- Framework
- VP Planner Plus

Ms excel is a very powerful and easy to use spreadsheet package, which is being commonly used these days.

Uses of Electronic Spreadsheets

The electronic spreadsheets are used by a large number of users and they cater to the requirements of the users. Some of the things that users do with the help of an electronic spreadsheet are mentioned below:

- Prepare the result of any class.
- Prepares the Profit and Loss Account.
- Prepares Income Statements.
- Prepares Tax Statements.
- Prepares monthly sales reports.
- Prepares a cost estimate for birthday.
- Prepares a chart on salary data.

Starting Ms excel

To start up Ms excel in Windows, you can follow the steps given below:

1. First, click at the Start button, and then go to the 'All Programs' option.

2. Select 'Microsoft Office option And click on Microsoft Excel option.

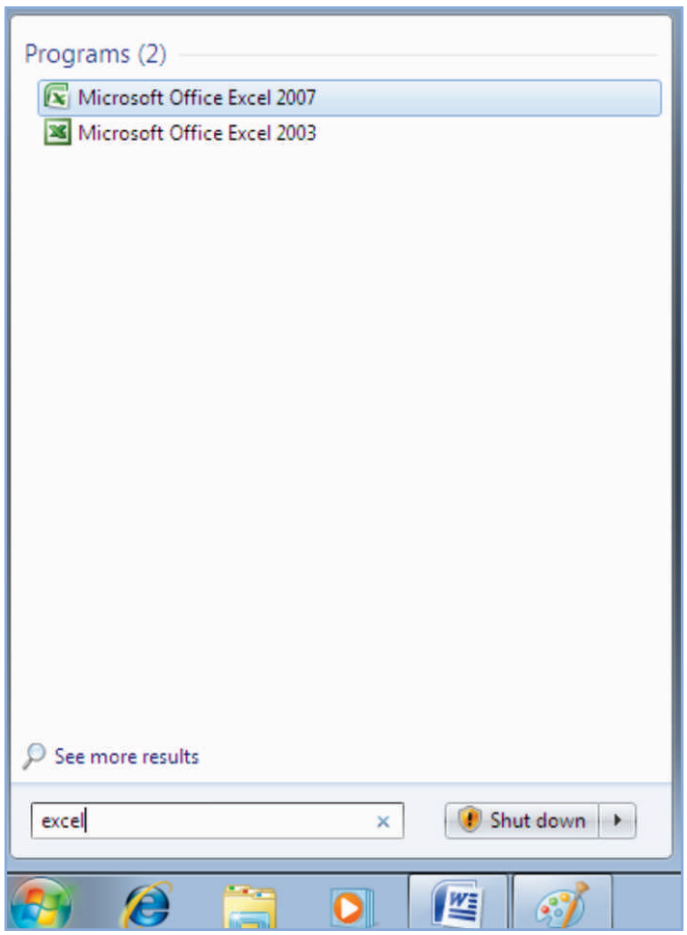


Fig 8.1

Or

1. Click on Start button.
2. Type excel in search file and program text.
3. Select Microsoft office Excel option. Excel will be loaded.

Once Ms excel is loaded in the computer's memory, a blank file shoots up on the screen. A name given to a file in Ms excel is Workbook. The term Ms excel Document, Ms excel Workbook and Ms excel File carry the same meaning and can be used interchangeably. This blank file by default gets the name Book1. The extension given to a file in Ms excel is 'xlsx'.

Screen Elements of Ms excel Window

The different parts of an EXCEL window are shown below:

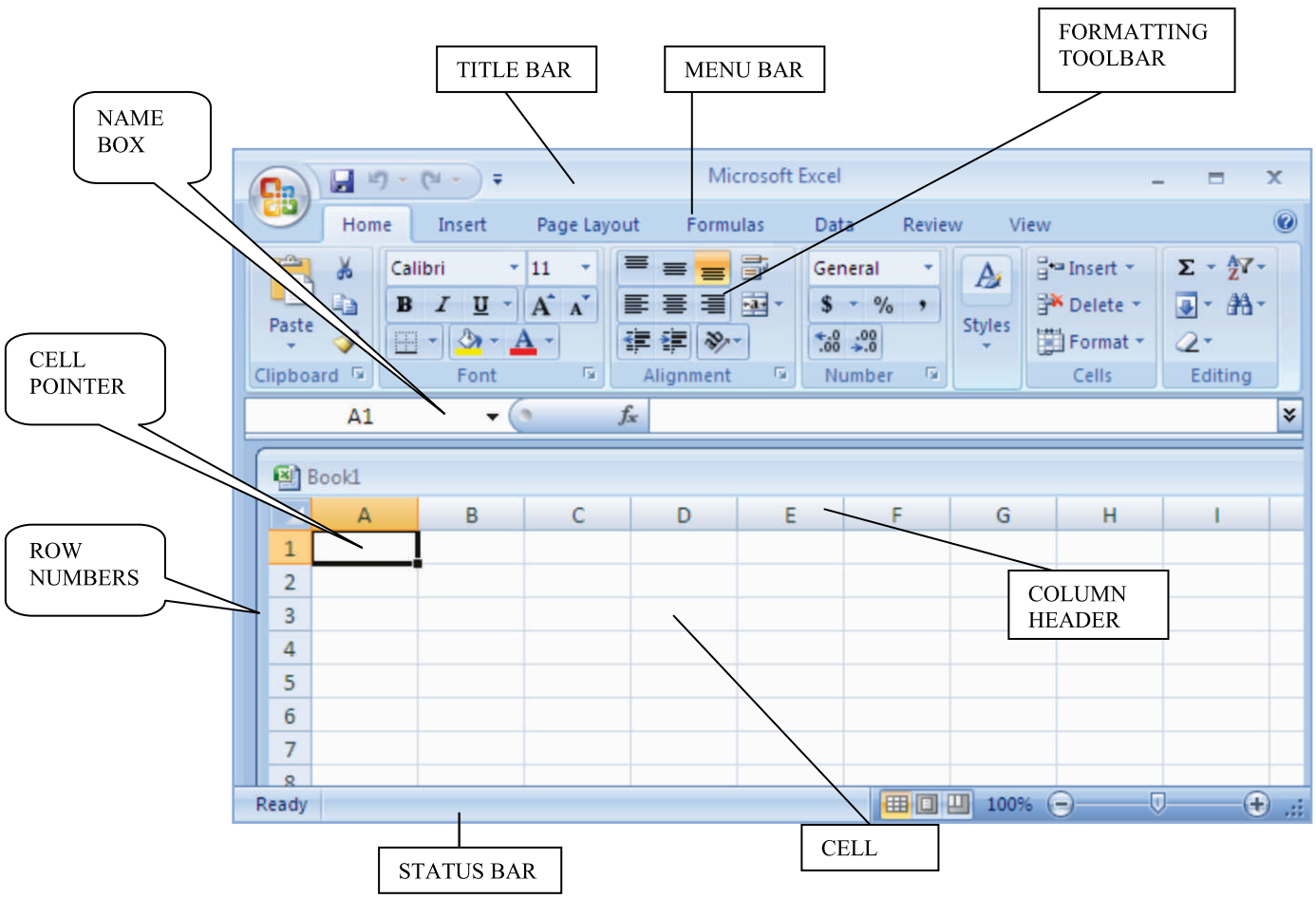


Fig 8.2

There are a number of new terms appearing in the EXCEL window. Let us discus them:

1. **Row:** Rows are horizontal lines present in the worksheet. There are a maximum of 148576 rows present in the worksheet.

2. **Row Numbers :** Each row is recognized by a unique number such as 1,2,3 etc. these numbers are present on the left side of the EXCEL window.

3. **Column :** Columns are vertical lines present on the worksheet. There are a maximum of 16384 columns present in a single worksheet.

4. **Column Header :** Each column is recognized by an alphabet or pair of alphabets such as A, B, C , etc. these column headers appear at the top of the column

5. **Cell :** The cell is represented by a small box. It is the intersection of a row and column. All the information in the worksheet is shown in cells. Each cell has some address. This cell address is formed by the combination of a column letter and a row number such as A1, B5, etc.

6. **Cell Pointer :** It shows the currently active cell.

7. **Name Box :** It shows the name or address of the currently active cell and is exactly above the column letter A.

Range of cells

A group of continuous cells 'when selected' is known as the range of cells. All the cells in the range become highlighted. The range is always specified by the addresses of the first cell and the last cell. In the worksheet shown below, the range starts from the cell address B2 and continues till the cell address E5. Thus, this range is written as B2:E5.

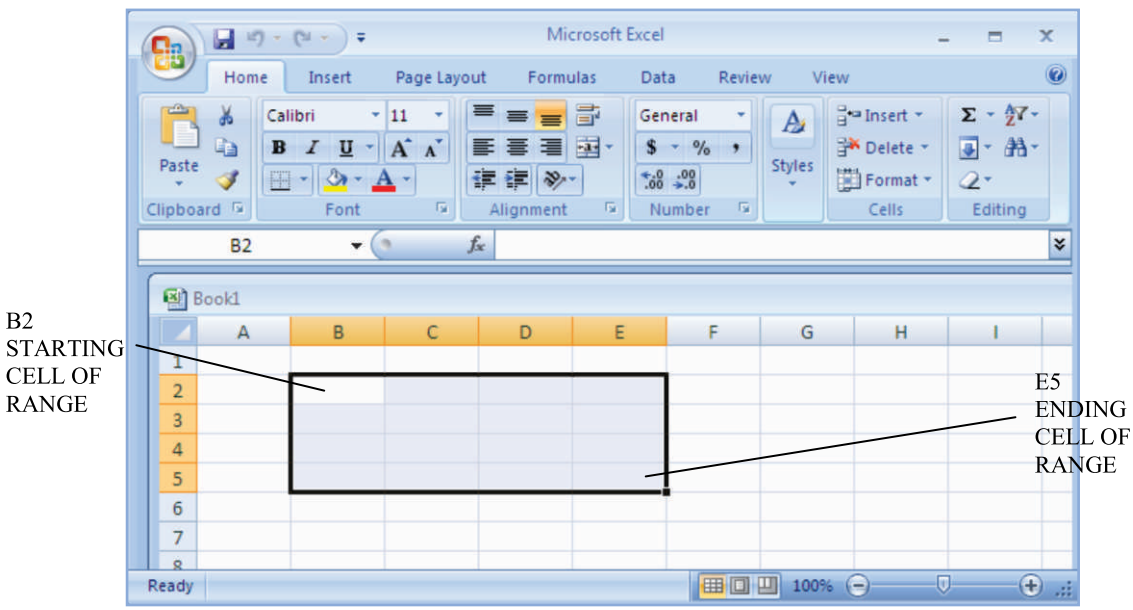


Fig 8.3

Creating a New Workbook

Sumit wants to store his mark-sheet on the computer. He is required to create a new workbook. So, for creating a new workbook, Sumit clicks at the office → New menu and then 'Book2' appears on the screen.

Entering and Editing Data in the Worksheet

Sumit already knows that a cell contains the data entered by you. He follows the following steps to create his worksheet:

Step 1: He makes the B2 as the currently active cell. He types the title as 'Marksheet for the month of April'.

Step 2: Sumit now click in the cell address B4 with the help of mouse and types the other sub-title 'Subject'.

Step 3: Likewise, he clicks in the cell address C4 and types the other sub-title 'Marks'.

Similarly, he types the rest of the mark-sheet details. This is how his worksheet looks like:

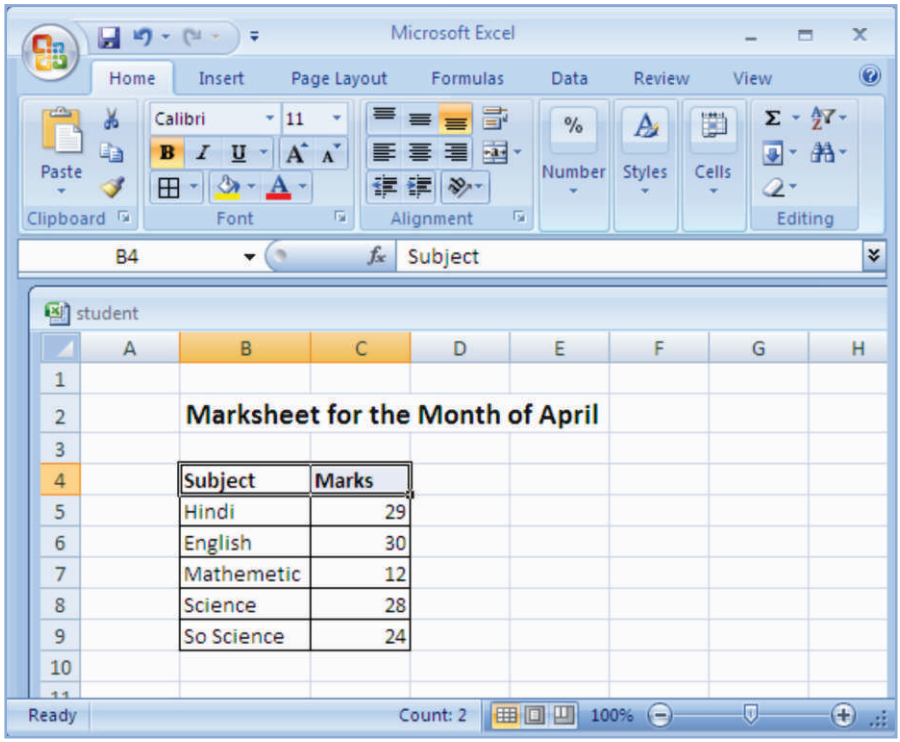


Fig 8.4

Editing data in Cell Entry

Sumit made a little mistake while typing in. He typed 25 instead of Marks in the cell address C4. He follows the steps given below to make changes in the worksheet:

Step1 : Sumit takes the mouse pointer at the cell address C4 and double clicks.

Step 2: The mouse pointer becomes 'I' shaped. This is known as **Insertion point.** He takes the insertion point to letter '2'.

Step 3: He presses the delete key till the time the complete text '25' is not deleted.

Step 4: Sumit now types the word 'Marks' and presses Enter key. His modified worksheet looks like the one shown below:

Saving a Workbook

Sumit now wants to save the workbook he has created. He knows that a workbook should be saved properly before closing it. Sumit saved the workbook by following the steps given below:

Step1 : Click at the office button menu and then select 'Saved' option. The 'Save As' dialog box comes up on the screen.

Step 2: Sumit types the name of the file as 'Marksheet' in the file name box.

Step 3: He chooses the location in the 'Save in' box where the file has to be saved.

Step 4: He click at the 'Save' button.

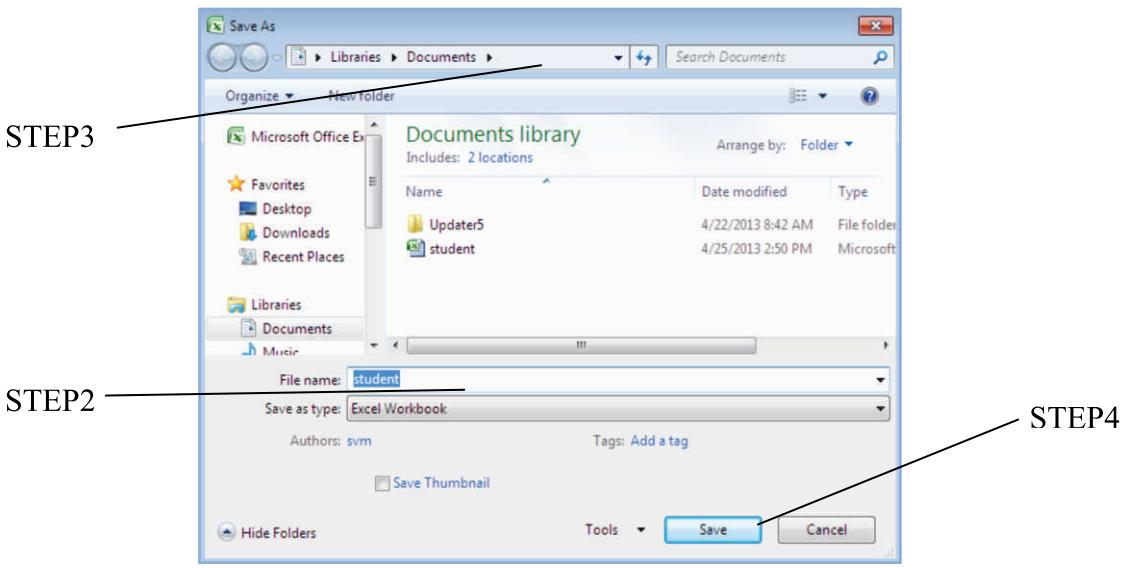


Fig 8.5

Closing a Workbook

Sumit wants to close the workbook created by him. He clicks at the office button menu and selects the 'Close' option.

If Sumit has made any changes in the workbook after saving it, then EXCEL prompts him to save the workbook before closing it. He gets the following message on the screen:

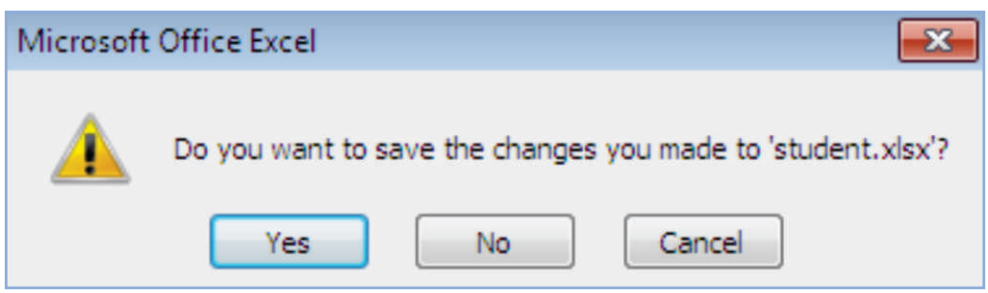


Fig 8.6

Sumit clicks at **[Yes]** button to save the changes.

Opening a Workbook

Next day Sumit wants to open the workbook named 'Marksheet' created by him. He follows the steps given below to open his workbook:

Step1 : He clicks at the office button menu and then selects the option 'Open'. An 'Open'dialog box appears on the screen.

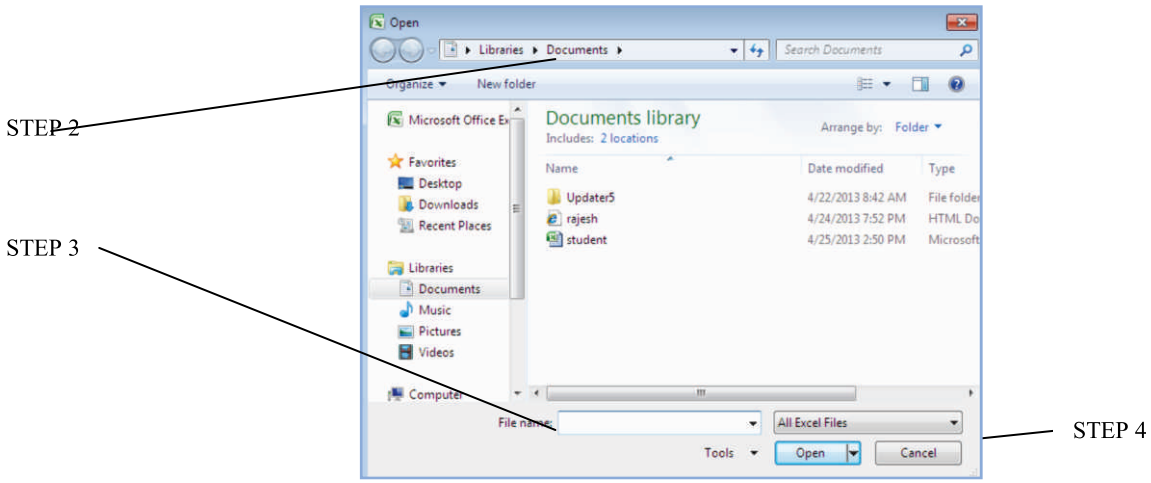


Fig 8.7

Step 2: Sumit specifies the location of the file.

Step 3: Selects the name of the file.

Step 4: He click at the **[Open]** button to open his file.

Exiting EXCEL

Sumit wants to close MS EXCEL as he is feeling tired now. He selects the 'Close' option from the office button.

Exercise

1. Fill in the blanks :

a. _____ Spreadsheet is a group of rows and columns.

b. M.S. Excel is a _____ software.

c. Rows are _____ lines present in the worksheet.

d. _____ is the intersection of row and column.

e. Cell pointer shows the currently _____ cell.

2. Write True or False in front of the following statements:

a. A workbook contain a number of worksheets. _____

b. A cell address is represented by an alphabet only. _____

c. A range is a group of continuous cells. _____

d. You must not save your file before closing it. _____

e. The default name given to a file in EXCEL is Book1.xlsx. _____

3. Match the following :

a.	Cell	Save
b.	M.S. Excel	Small box
c.	New	Spreadsheet
d.	Ctrl + s	New

4. Answer the following questions :

a. What is an Electronic Spradsheet ? How will you start Ms excel ?

b. Write any five uses of an Electronic Spreadsheet.

c. Differentiate between a workbook and a worksheet.

d. What is a range? Give examples.

e. Write down the steps to create a new workbook.

f. Write down the steps to modify cell contents.

CHAPTER 9

EDITING IN EXCEL

Selecting Cells

Most of the operations performed on the cells are done by selecting either a single cell or a range of cells. You can select a single cell, range of cells, entire column, entire row or the entire worksheet. Let us see how to select cells.

Select a Single Cell

- Simply click in the cell that has to be selected.

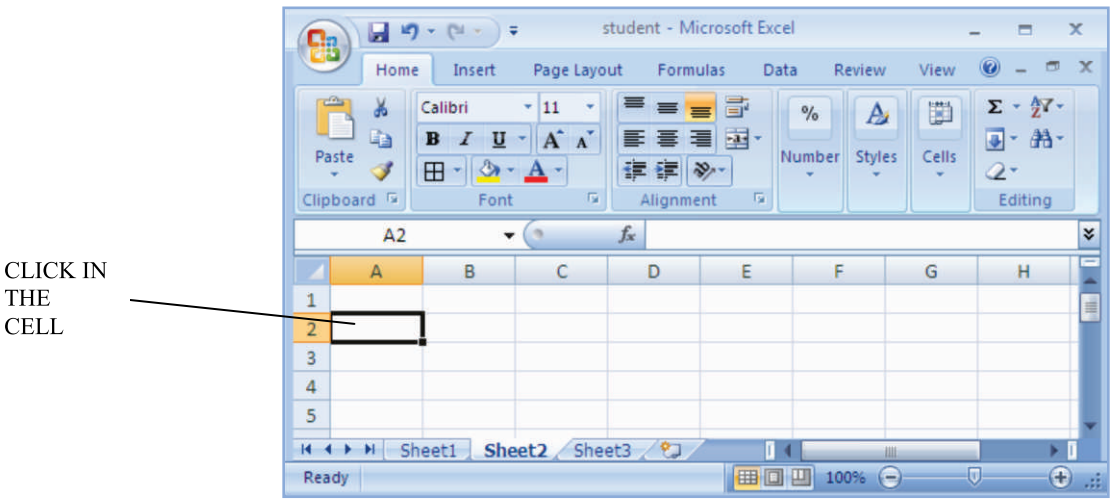


Fig 9.1

Select A Range Of Cells

- Place the mouse pointer at the first cell from where the range has to be selected.
- Drag the mouse in the desired direction.
- Release the mouse when the desired selection is reached.

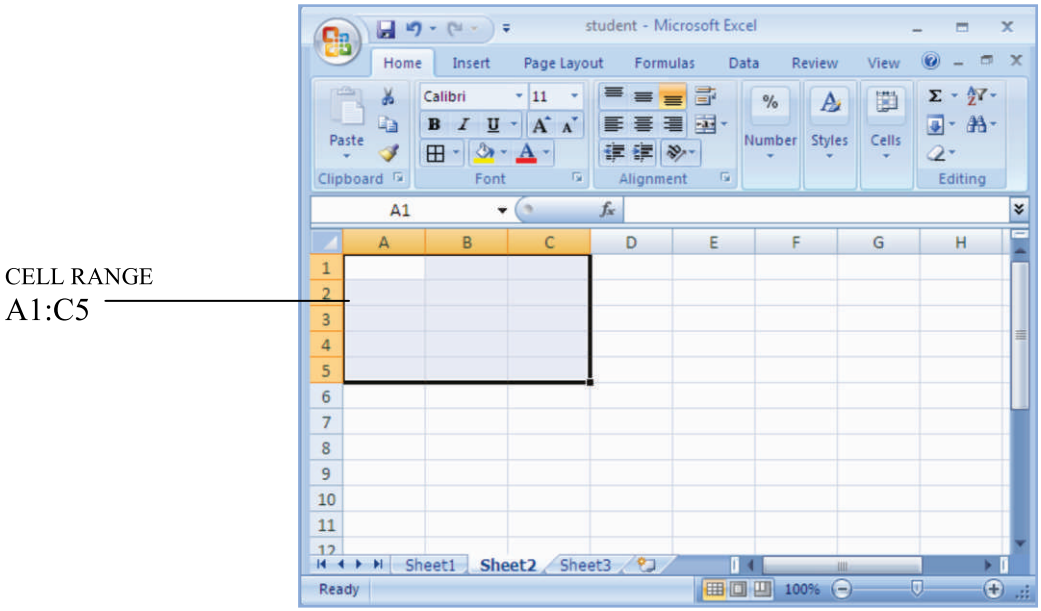


Fig 9.2

Select Entire Column

- Click on the column heading of the column that is to be selected.

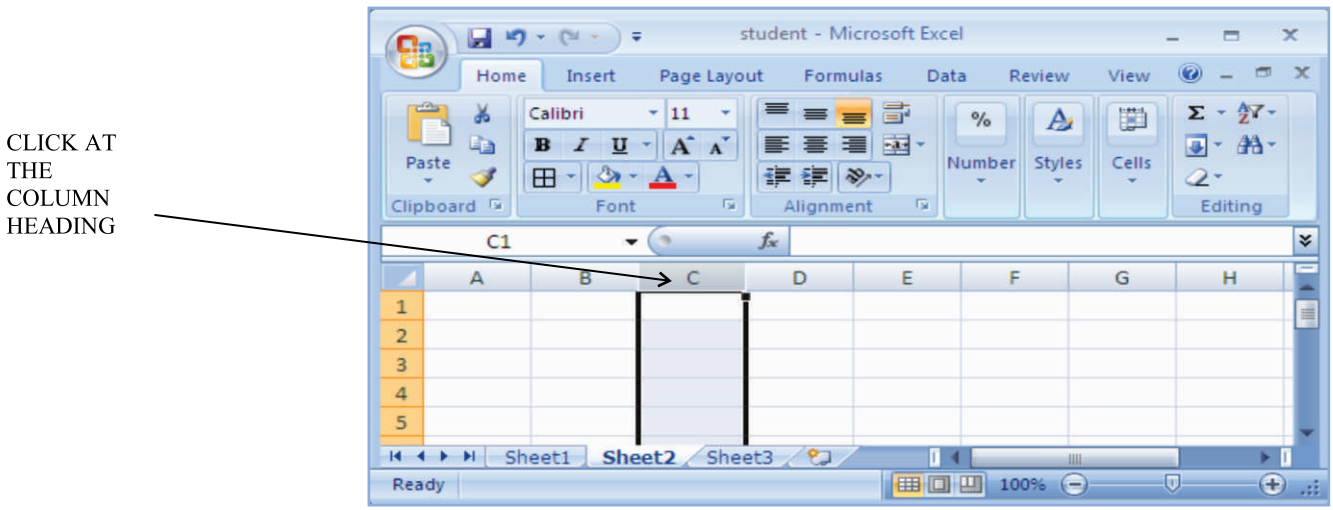


Fig 9.3

Select Entire Row

- Click on the row heading of the row that is to be selected.

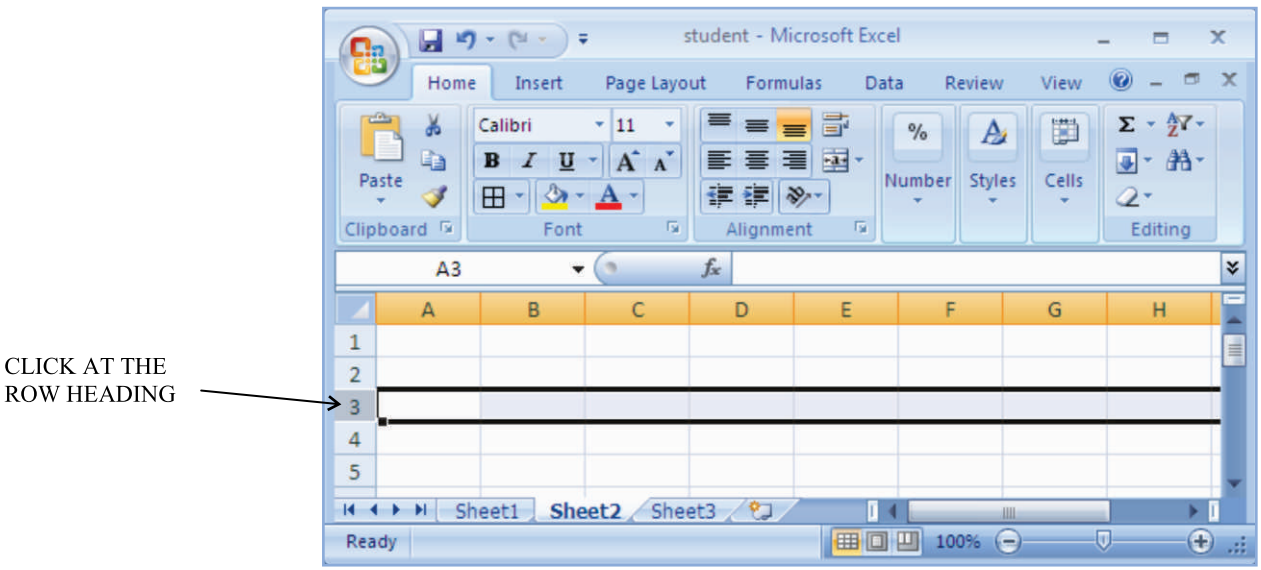


Fig 9.4

Select Entire Worksheet

- To select entire worksheet, click on the corner blank header before column A and row 1.

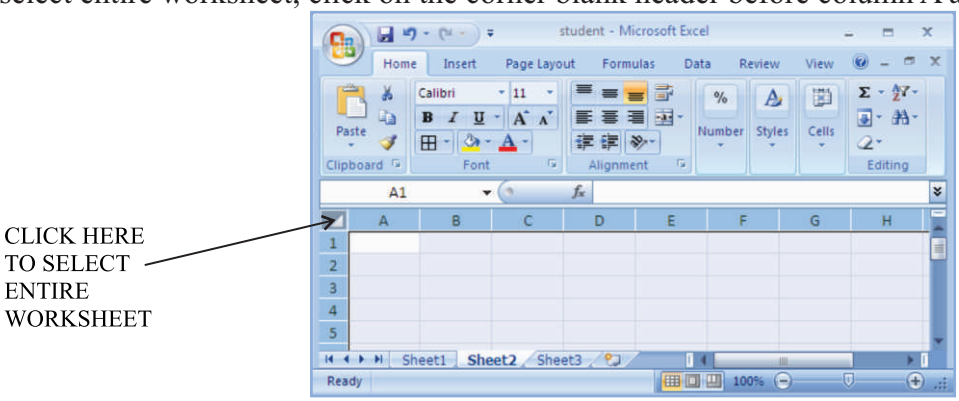


Fig 9.5

Changing Column Width

You can easily change the width of a column with the help of following steps:

Step 1: Move the mouse pointer over the right line of the desired column header. The mouse pointer takes the shape of a double-headed arrow.

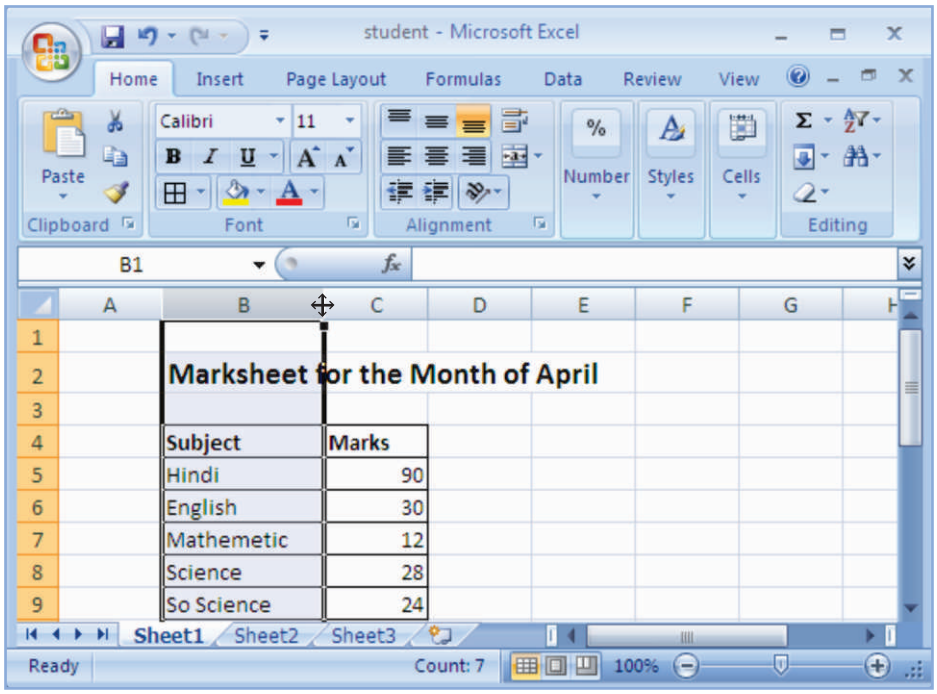


Fig 9.6

Step 2: Drag the mouse in the right side to increase the column width.

Step 3: A doted line coming up on the screen. This line shows the new column width. Release the mouse button when the desired width is reached.

Changing Row Height

You can easily change the height of the row in the same way as you have changed the column width. In order to change the row height, follow the steps given below:

Step 1: Take the mouse pointer in the lower line of the row header whose height has to be changed. The mouse pointer takes the shape of a double-headed arrow.

Step 2: Move the mouse upwards to decrease the row height or downwards to increase it.

Step 3 : A dotted line appears on the screen. It shows the new row height. Release the mouse once the desired row height is achieved.

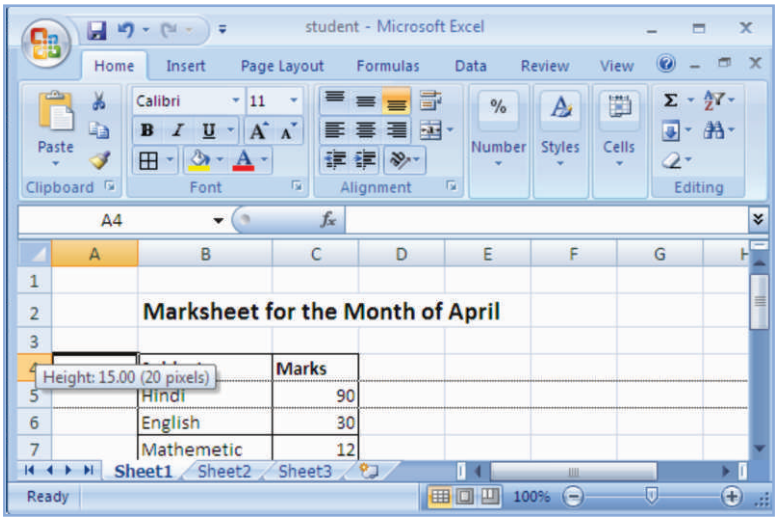


Fig 9.7

Copying Cell Contents

If you want to copy the contents of the cell range C2:C7 to D2:D7, follow the steps given below:

Step 1 : Select the cell range C2:C7.

Step 2 : Right click the mouse button and select the 'Copy' option.

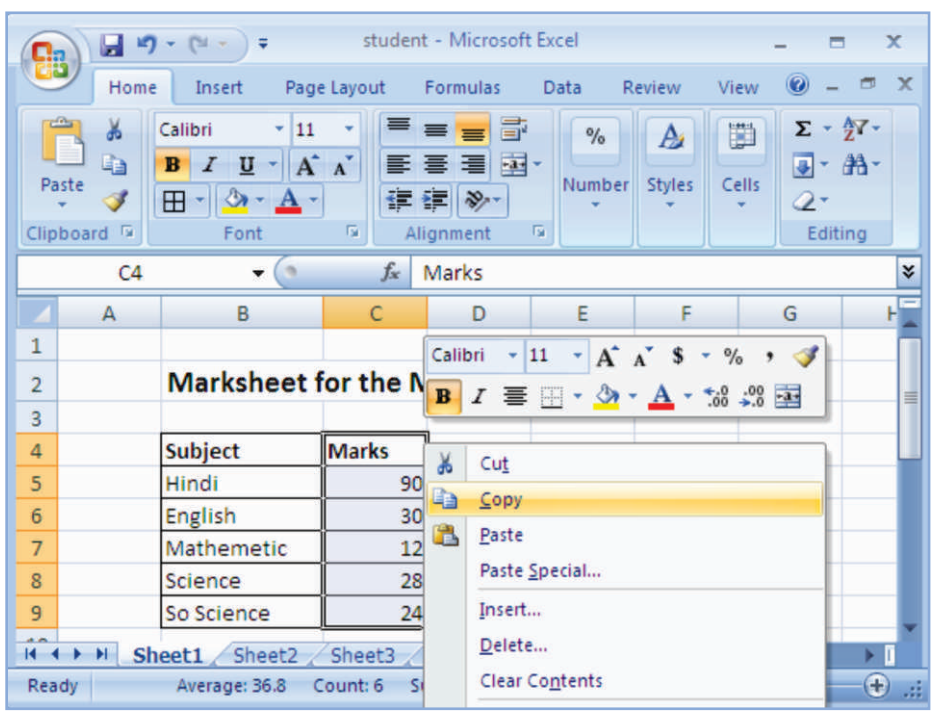


Fig 9.8

Step 3: Take the mouse pointer at the cell D2.

Step 4: Right click the mouse button and select the 'Paste' option. Now final worksheet looks like shown below:

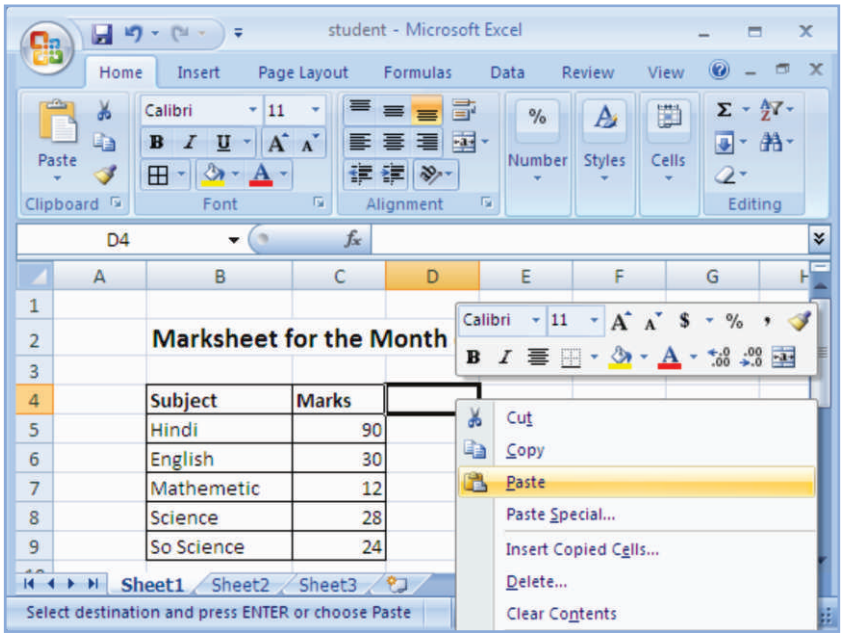


Fig 9.9

Moving Cell Contents

Moving cell contents removes the contents of the cell from one location and places it at some other location. For moving the cell contents, follow the steps given below:

Step 1 : Select a cell or range of cells to be moved.
Step 2: Right click the mouse button and select the 'Cut' option.

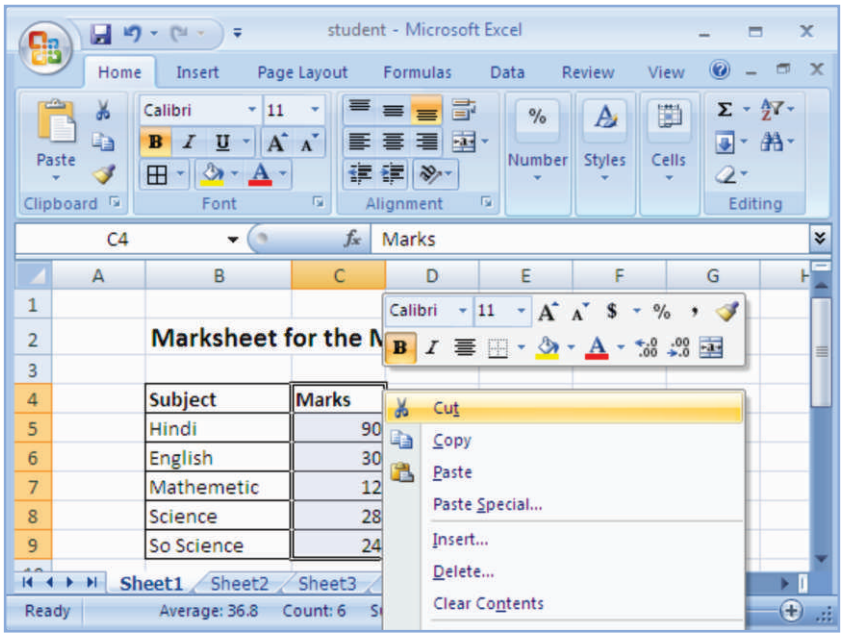


Fig 9.10

Step 3: Take the cursor to the cell wherever you want the text to be pasted.

Step 4: Right click the mouse button and select the 'Paste' option.

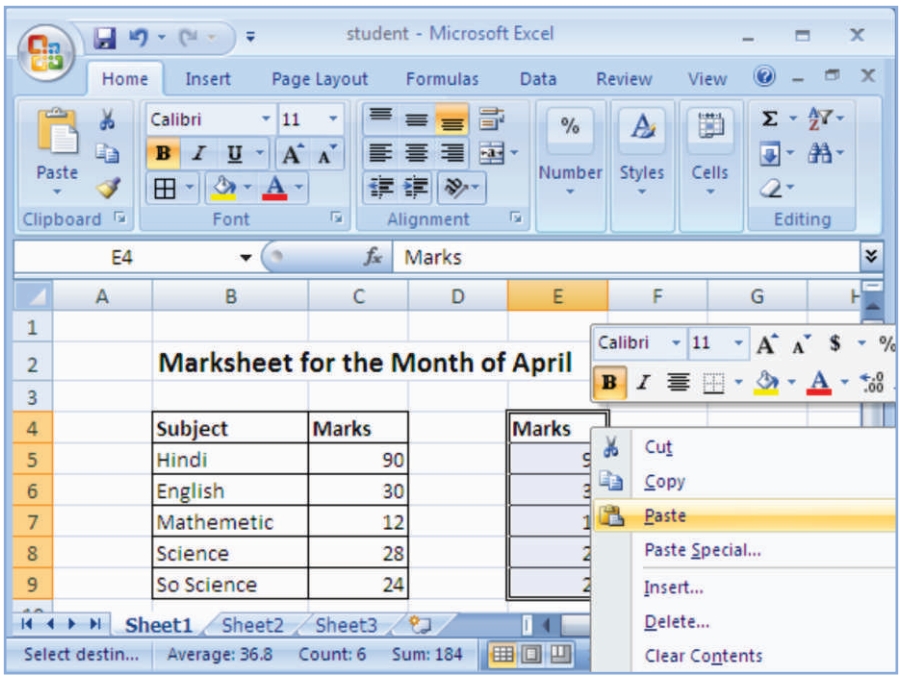


Fig 9.11

Exercise

1. Fill in the blanks :

a. Simply click in the _____ that has be selected.

b. Drag the _____ in the desired direction.

c. The mouse pointer takes the shape of a _____ arrow.

d. _____ line appears on the screen.

e. _____ click the mouse button and select the copy option.

2. Write True or False in front of the following :

a. The whole worksheet can be selected by pressing <Ctrl +A> keys together.

b. The mouse pointer cannot take the shape of a double-headed arrow.

c. Copying and moving cell contents mean the same.

d. Row height can be increased as well as decreased.

e. The cell contents can be edited by double-clicking on them.

3. Answer the following question :

a. Write down the steps to change the column width

b. Write down the steps to change the row height.

c. Write down the steps to select entire column.

d. What is the difference between copying cell contents and moving cell contents.

CHAPTER 10

FORMATTING AND PRINTING IN EXCEL

Types of Data

EXCEL can very smartly figure out the type of data as you type in. it allows you to type in values and formula from the keyboard. Values can contain text, numbers or special characters. Let us discuss the different types of cell entries in detail:

(a) Text Values : Any entry that contains text, numbers or any special character is recognized as a text entry. A text purely in alphabets is mostly used for giving titles and subtitles. Generally, a text entry is given at the top and left side of the worksheet. By default, a text entry is left aligned.

Text values are - "Ram Kumar", "Sumit", "ABC 123"

(b) Numeric Values : Any entry is treated as a numeric value if the first character entered is a number. Numbers must be typed directly without pressing the spacebar. A numeric value can contain any of the following:

0 1 2 3 4 5 6 7 8 9 + -
( ) / $ %

by default, numeric values are right aligned.

(c) Formulae : Formula establish relationship between two or more cells. It performs a mathematical or arithmetical operation on these data values such as :
Addition, subtraction, multiplication, division, etc. The formula entry can be made by beginning the entry with a +, or = sign.

e.g. = A1 x A2

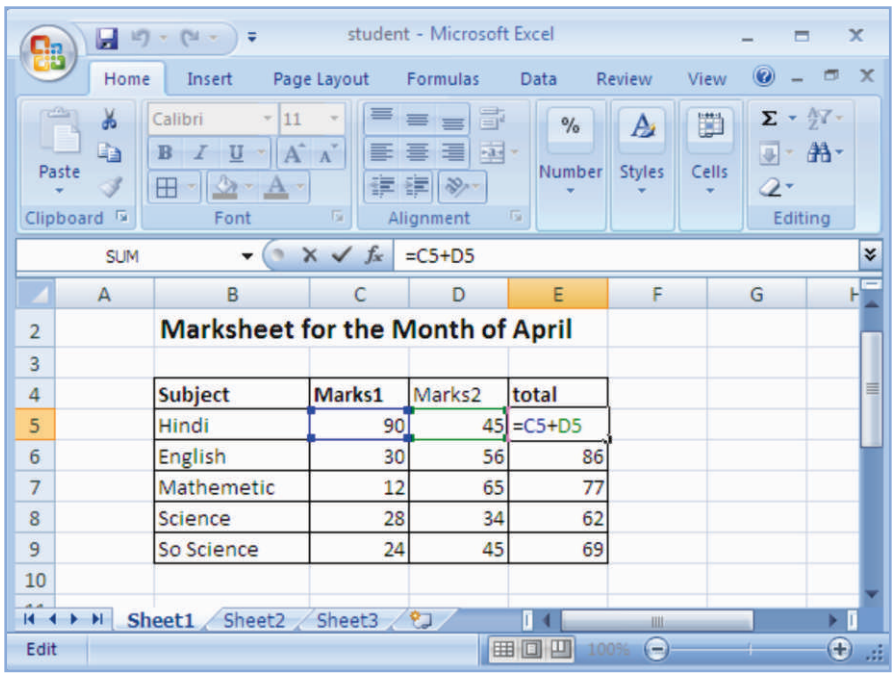


Fig 10.1

Formatting Text

Formatting text means changing the alignment of text, font size, font type, etc.
The formatting toolbar looks like:

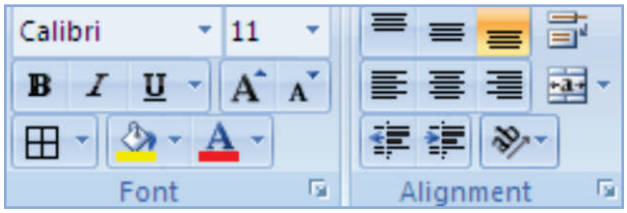


Fig 10.2

Changing Font Type

There are different ways with which you can change the font type of your text. By using formatting toolbar you can do in the following way:

Step 1 : Select the cells whose font type has to be changed.

Step 2 : Click at the down arrow present at Font type box and selects the desired font type.

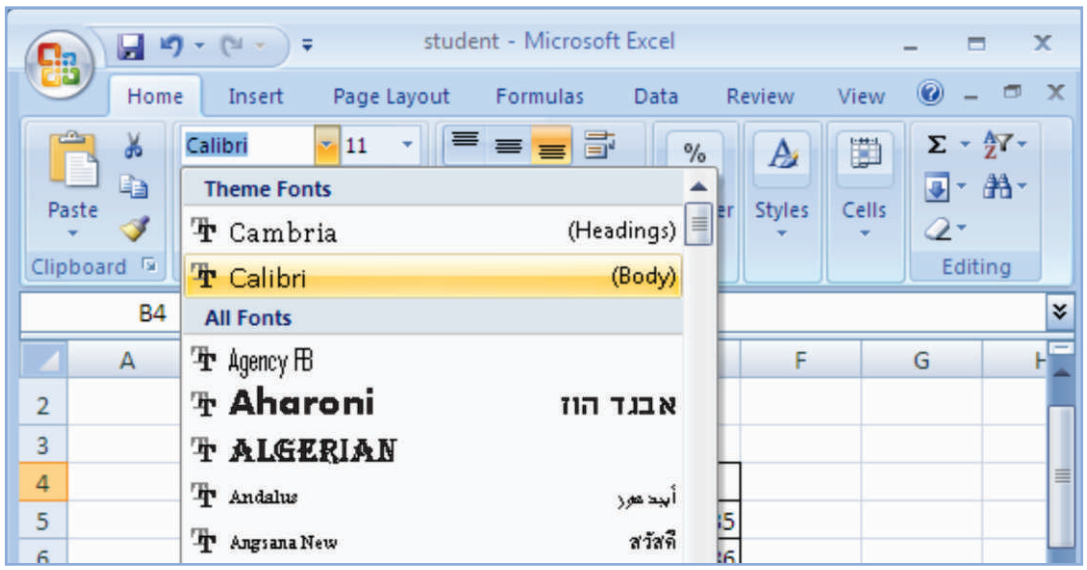


Fig 10.3

Changing Font Size

In the same way you can change the font size of your cell contents. Follow the steps given below:

Setp 1 : Select the text whose font size has to be changed.

Step 2 : Select the appropriate font size from the Formatting Toolbar.

Making Cell Contents Bold, Italics or Underlined

You can enhance the look of your worksheet by showing the title and sub-titles in Bold, Italics or Underlined. Follow the steps given below:

Step 1 : Select the text.

Step 2 : Select the **B** button from the Formatting Toolbar to show the text in Bold.

Setting the Alignment of the Text

Alignment of the text places the text neatly within margins of the cell. We know, the text is left aligned by default. The numbers are right aligned by default. We can also change the alignment of the text by following the steps given below:

Step 1 : Select the cell or cell range that has to be aligned.

Step 2 : Select the 'Center alignment' button to place the text in the center of the cells.

Printing a workbook

Excel offers a very easy way of printing the workbook. You can very well control the overall look of the whole printout and modify it to suit your own special requirements. You can preview your work before taking the final printout. It will give the over all look of how your printout is actually going to look on paper. So, for previewing the workbook, activate the 'Print Preview' option of the 'File' menu. Now, after previewing the workbook, you are ready to take a printout. So, proceed with the steps given below:

Step 1 : Open the file whose printout has to be taken.

Step 2 : From the 'File' menu, select the 'Print' option. A 'Print' dialog box appears on the screen.

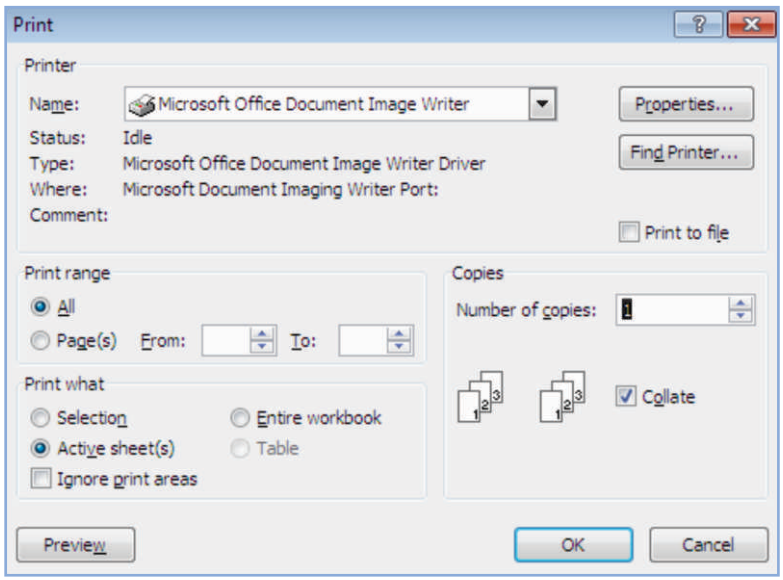


Fig 10.4

Step 3 : Choose the printer that you want to use out of all the installed printers on your system from the 'Name' drop down list.

Step 4 : You can select the pages of the workbook you want to print through the 'Print range' option of the 'Print' dialog box. For example, if you want to take a printout of all the pages of the current workbook, then click at the 'All' radio button. But sometimes, you require only selective pages to be printed. For that matter, click at the 'Pages' radio button and type in the starting number of the page in the 'From' box. Similarly, enter the page number till which the printout has to be taken in the 'To' box.

Step 5 : Enter the number of copies you want to print in the 'Number of Copies' box.

Step 6 : The 'Print What' option lets you to decide in printing, either the selected portion of the worksheet or the whole workbook or just the active sheet(s).

Step 7 : You can also see the preview of the workbook by clicking at the' Preview' button.

Step 8 : Finally, click the OK button.

Exercise

1. Fill in the blanks :

a. It allows to type in values and formula from the _____

b. Text value _____ text, number or any special character.

c. Formula establish _____ between two or more cells.

d. _____ text means changing the alignment of text, font size, font type etc.

e. _____ of the text places the text neatly within margins of the cell.

2. Write True or False in front of the following:

a. Formula can be entered in a worksheet.

b. We can center align the contents of a cell.

c. You cannot increase font size of text in EXCEL.

d. A formula begins a +, = or @ sign.

e. You can take a printout of the selected cells also.

3. Answer the following questions :

a. What are the different data types offered by Excel?

b. Write steps to change font type?

c. Write steps to set the alignment of the text.

d. Write steps to print a workbook.

CHAPTER 11

INTERNET-AN INTRODUCTION

You have heard a lot about the Internet. But do you know what it is? What are its uses and how you can use it?

Simply speaking, Internet is a computer network. A computer network is made by connecting two or more computers through a cable. The computers which are connected to each other can share data, information and resources. For example, a user on one computer can read a file from the disk of another computer connected to it in the network.

To sum up we can say that **a network is a collection of interconnected computers and devices. Internet is a network of networks.** It is a global network of computers connected to each other through high-speed links.

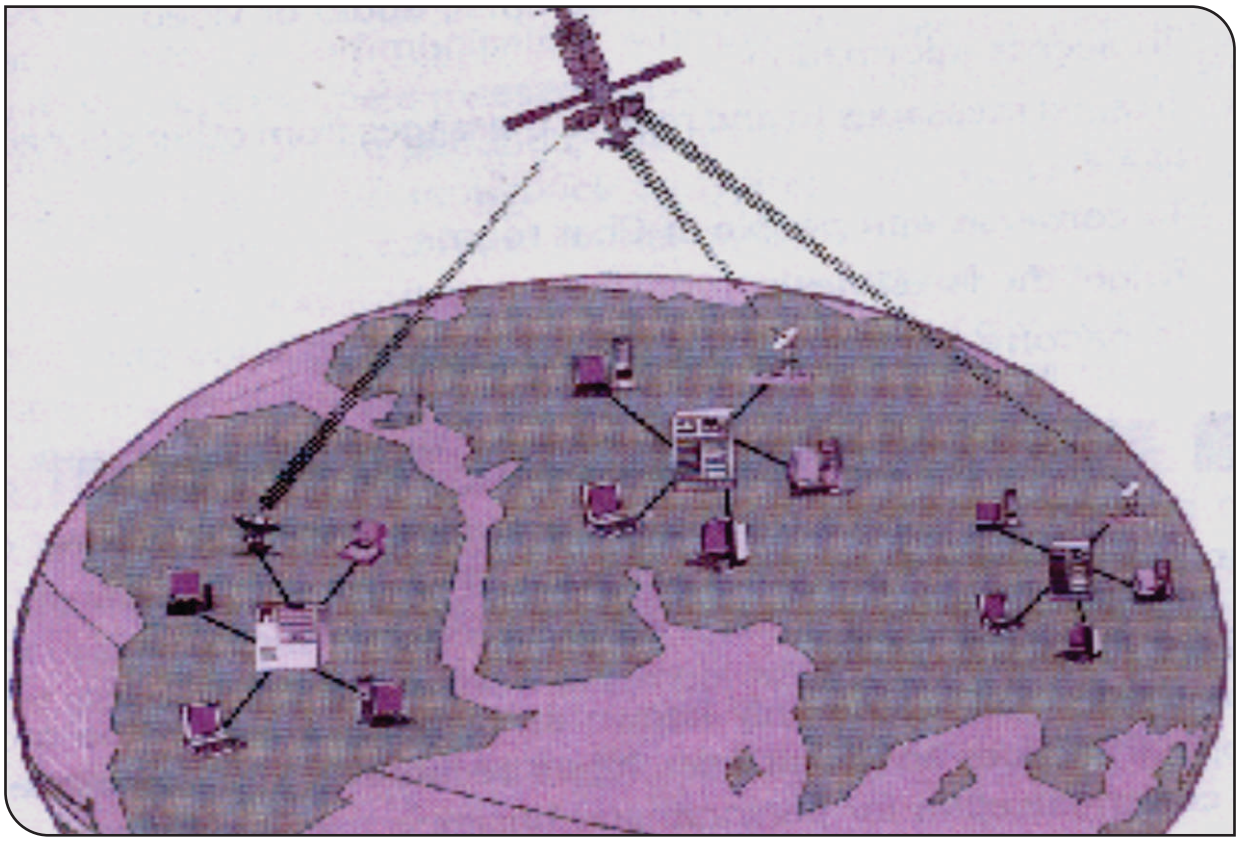


Fig 11.1

These networks are connected to smaller networks, which in turn are connected to still smaller networks, and ultimately to individual computers belonging to individuals, businesses and institutions spread throughout the world.

In this networked environment information on any computer connected to the network can be accessed by an individual through another computer connected to the network.

Internet is a convenient way to get information from all over the world. Internet is not owned by any individual, company, business or government. It is just an interconnection of computers worldwide belonging to different people.

Some of the most popular activities on Internet are sending and receiving e-mails, reading messages in Newsgroups and browsing the World Wide Web(WWW) for information.

USES OF THE INTERNET

The Internet is widely used in almost every field. Some of the uses of the Internet are:

- To provide information, photographs, audio or video
- To access information
- To sent messages to and receive messages from other connected users
- To converse with people in chat rooms
- To get the latest news
- To perform banking or business transactions

SERVICE AVAILABLE ON THE INTERNET

To support the above mentioned activities and many more, the Internet provides a variety of services.

ELECTRONIC MAIL

Electronic mail, commonly known as E-mail, is one of the most popular services on the Internet. It has become an important means of communication for personal and business use.

E-mail allows you to sent and receive messages instantly with the help of computers when they are connected to the Internet. It is a cheap, fast and reliable method.

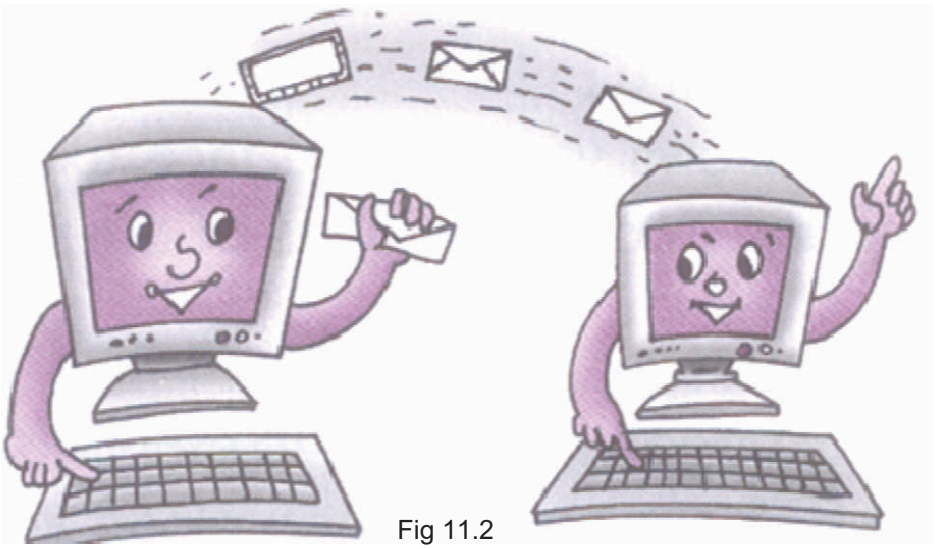


Fig 11.2

Advantages of E-Mail

Speed : Messages can be sent to any person anywhere in the world in a few seconds or minutes.

Cost : It is very cheap mode of communication. You pay only the cost of the telephone bill for the period the connection is made.

Content : Any type or extent of information can be sent, i.e., text, graphics, video or audio.

CHAT

Chat is a way of communicating with people over the Internet in real time. You can type a message which is received by a connected computer user within seconds. Then the receiver can read the message instantly and reply back by typing from the keyboard of his computer and you can read his/her reply on your computer within seconds. This way you can communicate instantly with people around the world by typing back and forth. This is called **Chatting.** It appears as if you are chatting with a person across the table. Chatting is a very popular feature of the Internet.

FTP

FTP(File Transfer Protocol) allows you to exchange files with others on the Internet. An FTP server allows to upload and download files using FTP.

WWW (WORLD WIDE WEB)

The most popular service provided by the Internet is World Wide Web popularly known as WWW. World Wide Web has a vast collection of information on various topics, like education, entertainment, science, weather and much more in the form of Web Sites.

WHAT YOU NEED TO CONNECT TO THE INTERNET

To get connected to the Internet you essentially need the following:

- A computer with at least 1GB RAM
- A telephone connection
- A modem
- An Internet browsing software
- An Internet Service Provider (ISP) connection

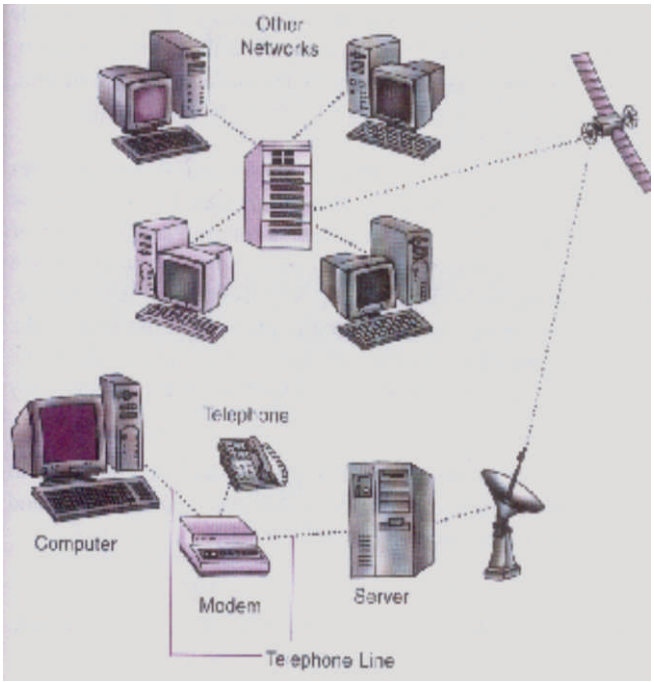


Fig 11.3

MODEM

A Modem is a device, which connects a personal computer to the Internet using a telephone line. It converts digital signals to analog signals which is known as **modulation** and analog signals to digital signals called **dem**odulation. Hence, the name Modem is combination of modulation and demodulation.

Internet Browsing Software

An Internet browsing software, commonly known as a **Browser**, is a software which allows you to access and browse through the information on the net. A browser is a must to access the Internet. Internet explorer and Netscape Navigator are examples of commonly used browsers. If your PC has Windows as the operating system, Internet Explorer would be automatically available on your system.

Internet Service Provider (ISP)

Internet Service Providers, popularly known as ISPs, are agencies that have installed very powerful computers called **Servers.** Servers are connected to the Internet networks though satellite or other high-speed communication channels. Some popular service providers in India are BSNL, MTNL, Satyam Online, Mantra Online, Dishnet etc. These agencies provide Internet connections to the computer users. The ISPs give you an account number called the **User Name** and a **Password** which is kept secret and belongs only to you.

When you want to use the Internet, you dial and get connected to your ISP. The ISP then handles all the data communication between your computer and the Internet.

STEPS TO CONNECT TO THE INTERNET

After ensuring that you have all the above-mentioned essentials, follow the steps given below to connect to the Internet.

- Double-click on the Mobile Partner icon on the desktop for USB Modem

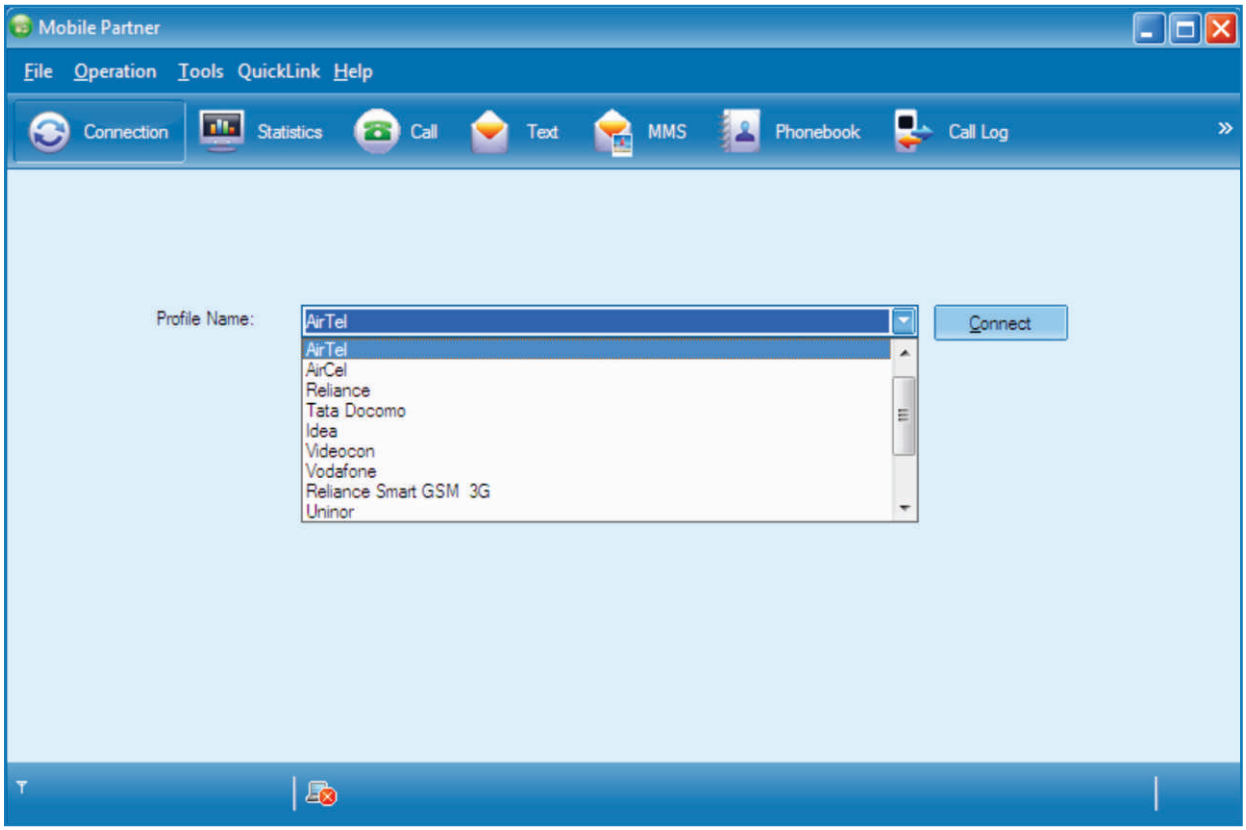


Fig 11.4

- Select the ISP and click on the Connect button

Once the ISP's server has verified your User name and Password, a connection is established and an icon appears in the right corner of your taskbar.

OR

Click on the icon of Broadband on the Desktop configured by various ISPs with the help instructor in the lab session.

Exercise

1. Fill in the blanks.

a. Internet is a network of …….

b. ……allows us to send and receive messages.

c. WWW stands for…….

d. ……is used to convert digital signals to analog signals.

e. Demodulation is the process of converting…….to……

f. Internet Explorer is a……

g. www.yahoo.com is a……

h. ……allows computer users to have face to face communication.

2. State True or False.

a. Chat is used to send messages through computers

b. Internet is a global network of computers

c. Internet Explorer is a browsing software

d. A Browser gives us an account number called the
User name and a password

e. Jio is not an Internet Service Provider

3. Answer the following questions.

a. What do you understand by Internet?

b. Discuss some important uses of the Internet. List the various services provided by Internet.

c. Write a short note on e-mail.

d. What does FTP stand for?

e. What is a MODEM?

f. Write down the steps to connect to the Internet.

g. Name any two Web Browsers.

CHAPTER 12

MULTIMEDIA-AN INTRODUCTION

Multimedia

It is a combination of text, graphics, sound, animation, and video elements. All present day Pc's are multimedia computers.

Examples : Some examples of multimedia are

- Internet applications.
- Computer games.
- Video or animation movies.
- Computer based teaching (CBT) programs.
- Advertisement films.

Hardware for multimedia usually consists of the following components :

- CD-ROM (Compact Disk Read Only Memory). It can hold up to one and a half hour audio or around forty to fifty minutes of video.
- DVD-ROM (Digital Video Disk Read Only Memory). It can store around 5 GB of data and transferring data at higher speed.
- Sound Card, Speakers, Microphone. They are required to record and produce sound.
- Video Capture Card. it is used to capture TV or VCR or Camera images and store them into the computer.
- Digital camera. It is a device, which captures and stores real pictures or Videos into memory of multimedia PC.

Playing Video or movie CD in Windows

You can play an audio or video CD by following steps given below:

- First, click at Start button, and then type the windows media option.
- Then windows media player will display on the screen.
- Now Windows media player appears on the screen.
- Now click the play button from the player windows.
- Select the needed files or folders for play.
- In this dialog box you can specify location of movie/song file and click at OK button.
- You can also play audio CDs from by invoking CD Player in Entertainment option.

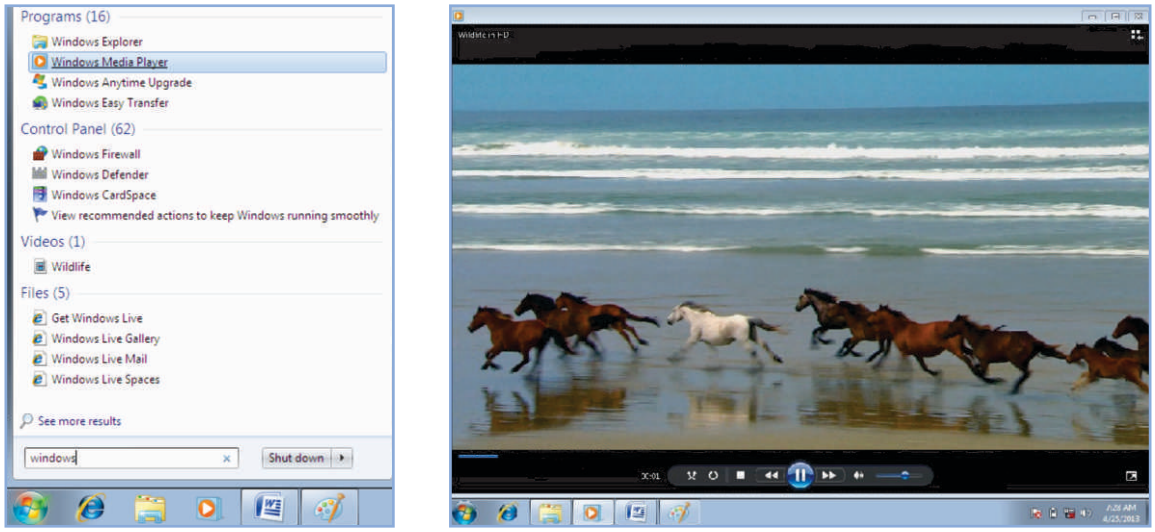


Fig 12.1

Exercise

1. Fill in the blanks :

a. Computer is a _____ device.

b. Multimedia is a _____ of text, graphics, sound, animation and video element.

c. _____ can hold up to on and a half hour audio or around forty to fifty minutes of video.

d. DVD-ROM can store around 5GB of data and _____ data at higher seed.

e. _____ are required to record and produce sound.

2. State ture of false :

a. Multimedia is not combination of text graphics, sound and video.

b. Full form of CD-ROM is compact disk read only memory.

c. Digital camera takes real pictures.

d. Video capture card is used to captures TV or camera images.

e. Computer game is a example of multimedia.

3. Match the following :

a.	Speakers	Pictures
b.	Digital Camera	Sound
c.	CD	Digital Video Disk
d.	DVD	Compact disk

4. Answer the following questions.

a. What is multimedia? Give some examples.

b. What are the multimedia hardware components?

c. What is Digital Camera?

d. Write full form of DVD-ROM.

e. Write steps to play a movie CD.

CHAPTER 13

NUMBER SYSTEM

Computer is a electronic device that performs arithmetic operations, in digital system like computers the quantities are represented by symbols called digits. Many number systems are used in digital technology that represents the digits in various forms.
The most common are the decimal, binary, octal and hexadecimal systems.

Digital number system

In digital representation most common number systems are as following;

1. Decimal number system
2. Binary number system
3. Octal number system
4. Hexadecimal number system

1. Decimal number system

Decimal number system is composed of 10 numerals or symbols that's why this number system is called decimal number system. These 10 symbols are 0,1,2,3,4,5,6,7,8,9 and base of this number system is 10.

DECIMAL NUMBER SYSTEM---- RANGE-(0-9) AND BASE (10).

Example -
1. $(3421)_{10}$
2. $(10101)_{10}$
3. $(65498)_{10}$
4. $(32546)_{10}$

2. Binary number system

In the binary number system there are only two symbols or possible digit values, 0 and 1. Even so, this base-2 system can be used to represent any quantity that can be represented in decimal or other number systems.

BINARY NUMBER SYSTEM---- RANGE-(0-1) AND BASE(2).

Example -
1. $(101010)_2$
2. $(10011)_2$
3. $(01001)_2$
4. $(10111)_2$

3. Octal number system

Octal number system is composed of 8 numerals or symbols that's why this number system is called octal number system. These 8 symbols are 0,1,2,3,4,5,6,7 and base of this number system is 8.

OCTAL NUMBER SYSTEM---- RANGE-(0-7) AND BASE (8).

Example -

1. $(3427)_8$
2. $(56326)_8$
3. $(65423)_8$
4. $(3254)_8$

4- Hexadecimal number system

Hexadecimal number system is composed of 16 numerals or symbols that are why this number system is called hexadecimal number system. These symbols are 0,1,2,3,4,5,6,7,8,9 and letters A,B,C,D,E,F. Base of this number system is 16.

HEXADECIMAL NUMBER SYSTEM---- RANGE-[(0-9), A,B,C,D,E,F] AND BASE (16).

Example -

1. $(123549)_{16}$
2. $(ABCDEF)_{16}$
3. $(265DF)_{16}$
4. $(BACDF)_{16}$

NOTE- ANY NUMBER SYSTEM CAN BE RECOGNISED BY ITS BASE.

Number conversion

Decimal number system recognize by universe i.e. we use decimal number system in our daily life for representing quantities but computer cannot understand the decimal number system.
To make this decimal number system understandable for computer we convert decimal number system into binary number system.

Decimal to Binary conversion

Method of converting decimal to binary is repeated –division method. In this method , the number is successively divided by 2 and its remainders recorded .the final binary result is obtained by assembling all the remainders in reverse order .

Example-1

Convert 18_{10} to binary by using repeated division method.

Solution-

2	18	0
2	9	1
2	4	0
2	2	0
	1	

Write result in this order now your result is 10010

$18_{10=}$ 10010 $_2$

Example-2

Convert 33_{10} to binary by using repeated division method.

Solution-

2	33	1
2	16	0
2	8	0
2	4	0
2	2	0
	1	

Write result in this order now your result is 100001

$33_{10=}$ 100001_2

Example-3

Convert $(53)_{10}$ ----------(?)$_2$.

Solution-

2	53	1
2	26	0
2	13	1
2	6	0
2	3	1
	1	

Write result in this order now your result is 110101

$53_{10=}$ 110101_2

Binary to Decimal conversion

Any binary number can be converted to its decimal equivalent simply by adding weight of every position in the binary number that is every bit of binary number write with multiplication of 2 with power from 0 to next number (power started from left to right of bit stream).

Example-1

Convert $(1011)_2$ binary number to it equivalent decimal number.

Solution :

Step1 : Add multiplication of every bit from 2 .

Or

Add every bit after multiply it from 2.

1 x 2+0 x 2+1 x 2+1 x 2

Step2 : Raise power 0 to next number from left to right on every 2

$1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

Step3 : Solve the powers and multiply with their bits

8+0 + 2 + 1

Step4 : $(11)_{10}$

Example-2

Convert $(110010)_2$ binary number to it equivalent decimal number.

Solution :

$1 \times 2^5 + 1 \times 2^4 + 0 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 0 \times 2^0$

1 x 32+1 x 16 + 0 x 8+0 x 4+1 x 2+0 x 1

32+16+0+0+2+0

$(50)_{10}$

Example-3

Convert (100011) ----------(?)$_2$

Solution-

$1 \times 2^5 + 0 \times 2^4 + 0 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

1 x 32+0 x 16 + 0 x 8+0 x 4+1 x 2+1 x 1

32+0+0+0+2+1

$(35)_{10}$

Exercise

1- Fill in the blanks.

a. Octal number system haves ……numerals or symbols.

b. ……..……numbers are used in daily life of human being.

b. Base of hexadecimal number system is ….....……

c. Range of decimal number system is ……..…. to ……...…

d. Base of decimal number system is ……..……..

2- State True or False.

a. $(1010)_{10}$ is an example of decimal number system.

b. Binary of $(7)_{10}$ is equivalent to $(111)_{2.}$

c. Base of octal number system is 9.

d. Range of decimal number system is from 0 to 9.

3- Match the column I and column II

	Column I	Column II
a.	$(110101)_2$	Hexadecimal number
b.	$(AB65)_{16}$	Binary number
c.	$(3452)_{10}$	Octal number
d.	$(1276)_8$	Decimal number
e.	2	Base of decimal number
f.	8	Base of hexadecimal number
g.	16	Base of octal number
h.	10	Base of binary number

4- Solve the following

a. $(1110)_2$ ----------$(?)_{10}$

b. $(110011)_2$----------$(?)_{10}$

c. $(111)_{10}$ ----------$(?)_2$

d. $(27)_{10}$ ----------$(?)_2$

e. $(77)_{10}$ ----------$(?)_2$

5- Answer the following questions

(a) What do you understand by number system?

(b) Discuss difference between octal number system and hexadecimal number system?

(c) Write a short note on binary number system?

(d) Write down two- two examples of binary, octal, hexadecimal number system?

Microsoft Word Shortcut Keys

Shortcut	Description
Ctrl + 0	Adds or removes 6pts of spacing before a paragraph.
Ctrl + A	Select all contents of the page.
Ctrl + B	Bold highlighted selection.
Ctrl + C	Copy selected text.
Ctrl + D	Open the font preferences window.
Ctrl + E	Aligns the line or selected text to the center of the screen.
Ctrl + F	Open find box.
Ctrl + I	Italic highlighted selection.
Ctrl + J	Aligns the selected text or line to justify the screen.
Ctrl + K	Insert link.
Ctrl + L	Aligns the line or selected text to the left of the screen.
Ctrl + M	Indent the paragraph.
Ctrl + P	Open the print window.
Ctrl + R	Aligns the line or selected text to the right of the screen
Ctrl + T	Create a hanging indent.
Ctrl + U	Underline highlighted selection.
Ctrl + V	Paste.
Ctrl + X	Cut selected text.
Ctrl + Y	Redo the last action performed.
Ctrl + Z	Undo last action.
Ctrl + Shift + L	Quickly create a bullet point.
Ctrl + Shift + F	Change the font.
Ctrl + Shift + >	Increase selected font +1pts up to 12pt and then increases font +2pts.
Ctrl +]	Increase selected font +1pts.
Ctrl + Shift + <	Decrease selected font -1pts if 12pt or lower, if above 1 decreases font by +2pt.

Microsoft Excel Shortcut Keys

Shortcut	Description
F2	Edit the selected cell.
F3	After a name has been created F3 will paste names.
F4	Repeat last action. For example, if you changed the color of text in another cell pressing F4 will change the text in cell to the same color.
F5	Go to a specific cell. For example, C6.
F7	Spell check selected text or document.
F11	Create chart from selected data.
Ctrl + Shift + ;	Enter the current time.
Ctrl + ;	Enter the current date.
Alt + Shift + F1	Insert New Worksheet.
Alt + Enter	While typing text in a cell pressing Alt + Enter will move to the next line allowing for multiple lines of text in one cell.
Shift + F3	Open the Excel formula window.
Shift + F5	Bring up search box.
Ctrl + A	Select all contents of the worksheet.
Ctrl + B	Bold highlighted selection.
Ctrl + I	Italic highlighted selection.
Ctrl + K	Insert link.
Ctrl + U	Underline highlighted selection.
Ctrl + 1	Change the format of selected cells.
Ctrl + 5	Strikethrough highlighted selection.
Ctrl + P	Bring up the print dialog box to begin printing.
Ctrl + Z	Undo last action.
Ctrl + F3	Open Excel Name Manager.
Ctrl + F9	Minimize current window.
Ctrl + F10	Maximize currently selected window.
Ctrl + F6	Switch between open workbooks or windows.
Ctrl + Page up	Move between Excel work sheets in the same Excel document.
Ctrl + Page down	Move between Excel work sheets in the same Excel document.