Sub:-Fundamental of computer and operating system

UNIT 1: (Syllabus)

- **Computer basics**
- **Definition of computer**
- **Few application and uses of computer**
- **Characteristics of computer**
- **Block diagram of computer**
- **Generation of computer**
- **ASCII Codes, EBCEDIC Codes**
- **MEMORY: PRIMARY MEMORY:**
- **RAM, ROM,PROM,EPROM,EEPROM**

Definition of computer :

Computer is an electronic device. It can perform arithmetic and logical operation. It contains temporary as well as permanent storage memory. It can accept data then process on it and give result.

APPLICATIONS *OF COMPUTER*

1] In railway & airline reservation for booking tickets.

2] Banking

3] Education system

4] Playing games

5] Information and Technology

6] Entertainment

USES OF COMPUTER

1] It can save time of human

2] It will save our money

3] It can work very speedily

4] It can stored information

5] Correct calculation

CHARACTERISTICS OF COMPUTER

1] Speed

2] Accuracy

3] Diligence

4] No tiredness

5] Versatility

6] Automation

<u>1.SPEED</u> : Speed is the first characteristics of computer. When user performs any operation or calculation of computer will response very speedily and display the output.

<u>2.ACCURACY</u> : It is second characteristics of computer. When user want to do any type of calculation or population user must demanded correct answer with accuracy. Accuracy is nothing but the perfection of any problem.

<u>3.DELIGENCE</u>: It is third characteristic of computer. Diligence means faith fullness or assurance given by the computer to the computer users. When user perform any operation then computer given assurance to perform the operation. It will never display false statement by the computer.

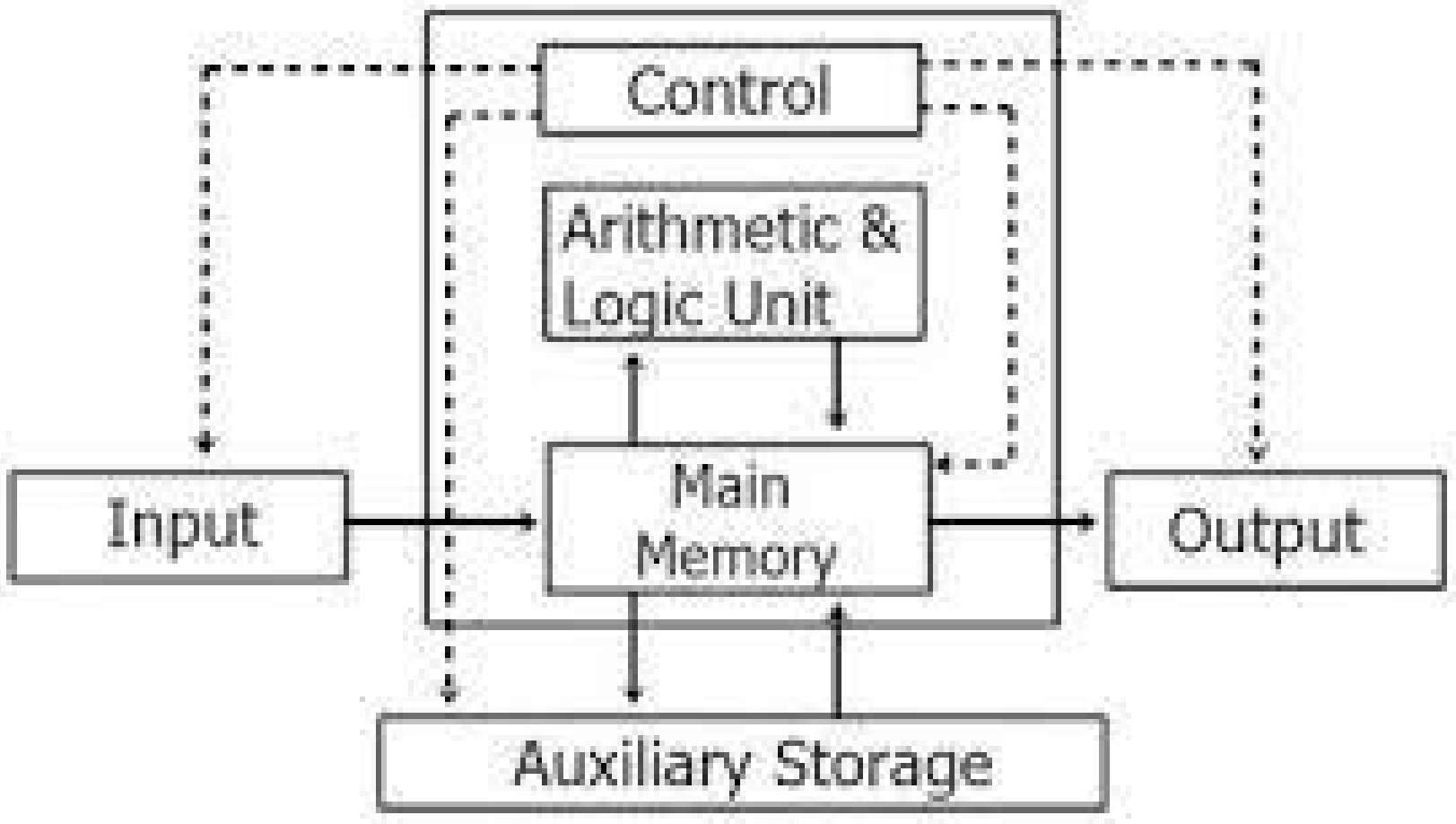
<u>4.NO TIREDNESS</u>: It can work day night with uninterruptable power supply. Computer is not lazy device. It is totally depends upon users choice. Computer is every time ready for work hard.

<u>5.VERSATALITY</u>: Versatility is the fourth characteristics of computer. The meaning of versatile is to do anything at a onetime number of jobs is called as versatility. Using this characteristics computer become more convenient, efficient and powerful. Ex: user can type and application at the same time, can calculate on calculator window can take a print-out of only application can suffering on internet can listen a music on computer.

<u>6.AUTOMATION</u>: Automation is nothing but to performs the operation. Automatically user enter any command the response of that command immediately started automatically using automation there is interaction between user and computer at a onetime then it work automatically and effectively. EX: We perform any operation like copying a file, formatting a disk, a listening of music etc.

BLOCK DIAGRAM OF COMPUTER

CPU



Block Diagram of Computer

PARTS OF BLOCK DIAGARAM COMPUTER:

- **CPU-CPU IS main component in any computer system It is divided into following 3 units:**
  - **CONTROL UNIT: It is main component in any computer system. It is brain or pulse of computer system without control unit it is just impossible to run any application on computer system.**
  - **Arithmetical And Logic Unit: ALU stand for Arithmetical and logic unit .ALU perform Arithmetical operation (+,-*,/)and logical operation(AND,OR, NOT).**
  - **MEMORY: It is used to store a data provided by user. Memory is divided into following 2 types:**

    1) Main memory or internal memory or temporary memory.

    2)Auxiliary memory or secondary memory .

- **INPUT DEVICE: It is used to provide a facility to the user to the insert data in the computer sys . Ex. Keyboard ,mouse , scanner,digital camera**
- **OUTPUT DEVICE: It is used to display the result expected by user as per data inserted.**

DIFFRENCE BETWEEN MAIN MEMORY AND AUXILIARY MEMORY

MAIN MEMORY	AUXILIARY MEMORY
1] Main memory is volatile memory.	**1]** Auxiliary memory is non-volatile memory.
2] The speed of main memory is fast as compare to auxiliary memory.	**2]** The auxiliary memory have less than main memory.
3] The storage capacity is limited.	**3]** The storage capacity is more.
4] The main memory is cheap in a cost.	**4]** Auxiliary memory is Expensive.
5] EX:- ROM,RAM.	**5] EX:-**floppy disk,CD,DVD,hard disk.

TYPES OF COMPUTER

Analog computer :

The word analog actually taken from Greek Word Ana and log is logic behind that computer hence the name is Analog.
It is specially used to compare between any two quantities.
EX:- Voltage and Current , height and weight.
Digital Computer :-
Digital computer used only two digits 0 & 1 .
0 is used for off state & 1 is used for on state.

DIGITAL COMPUTER

Digital computer broadly divided into 4 types :-
1] MICRO COMPUTER
2] MINI COMPUTER
3] MAIN FRAME COMPUTER
4] SUPER COMPUTER

1] Micro computer :-

Micro computer is basic computer.
It is use for micro operation.
It is divided into following 3 types :-
1) PC
2) PC/XT
3) PC/AT

1) PC

1) PC Stands for personal computer.
2) There no hard disk.
3) It is introduced in the year 1981.
4) PC used 8085 up.

2] PC/XT :

1) PC/XT Stands for personal computer.

2) In PC/XT Hard disk is introduced.

3) PC/XT introduced in the year 1982.

4) PC/XT used 8086 ,8088 up.

3]PC/AT :-

1)PC/AT stands for personal computer.

2) PC/AT used large capacity hard disk.

3) It introduced in the year 1985.

4) PC/AT used 80286,386,486 & 80586(pentium).

2]MINI COMPUTER

Mini computer is fast processing system than micro computer.

It is used in big organization to run various application in the field of computer.

3]MAIN FREAME COMPUTER

1] It is most powerful computer system than micro & mini computer.

2] It is also used to handle thousands of computer and using engineering application.

3] It is mostly used in railway reservation system.

4]SUPER COMPUTER

Super computer is biggest, largest & most powerful among the all computer.

Super computer is specially used for whether for casting.

The 1st super computer name as PARAM-800 by great scientist Dr.VIJAY BHATAKAR.

5] HYBRID COMPUTER

The combination & features of analog computer & digital computer is called as hybrid computer.

GENERATION OF COMPUTER :

FIRST GENERATION OF COMPUTER:

- **First generation of computer in between 1946-1955.**
- **It is use a vacuum tubes for storing a data.**
- **It can perform only two operation, addition & multiplication.**
- **The capacity of storing data is 1 kilo bite.**
- **The size of computer is very big like one room.**

SECOND GENERATION OF COMPUTER :

- **Second generation in between 1956-1965.**
- **Vacuum tube replace by transistors.**
- **It can perform all arithmetical operation.**
- **It introduced programming language like COBOL,FORTRAN.**

THIRD GENERATION OF COMPUTER :

- **This generation in between 1966-1975.**
- **Transistor replace by integrated circuit.(IC)**
- **It can perform arithmetical & logical operation.**
- **In this generation introduced powerful programming language.**
- **In this generation used small integrated circuit.**

FOURTH GENERATION OF COMPUTER :

- **This generation in between 1976-1984.**
- **In this generation we used medium scale integrated circuit.**
- **We introduced a micro computer with their 2 types- PC, PC/XT.**
- **In this generation introduced more powerful programming language.**
- **The storage capacity of computer is increased and size of computer is decreased.**

FIFTH GENERATION OF COMPUTER :

- **This generation in between 1985 and on word.**
- **It is most powerful generation of computer.**
- **Maximum innovation or creation or changes made in this generation.**
- **It gives very large integrated circuit.**
- **It introduced a tremendous speed od computer to handle any situation. EX:-ROBOT**

BINARY CODING SCHEME

- **It is used for representation of bit's in any computer system.**
- **We required to represent human language transfer into binary language.**
- **Three main types of binary coding scheme :-**

  1)ASCII code
  2)EBCDIC code
  3)Unicode

ASCII CODE

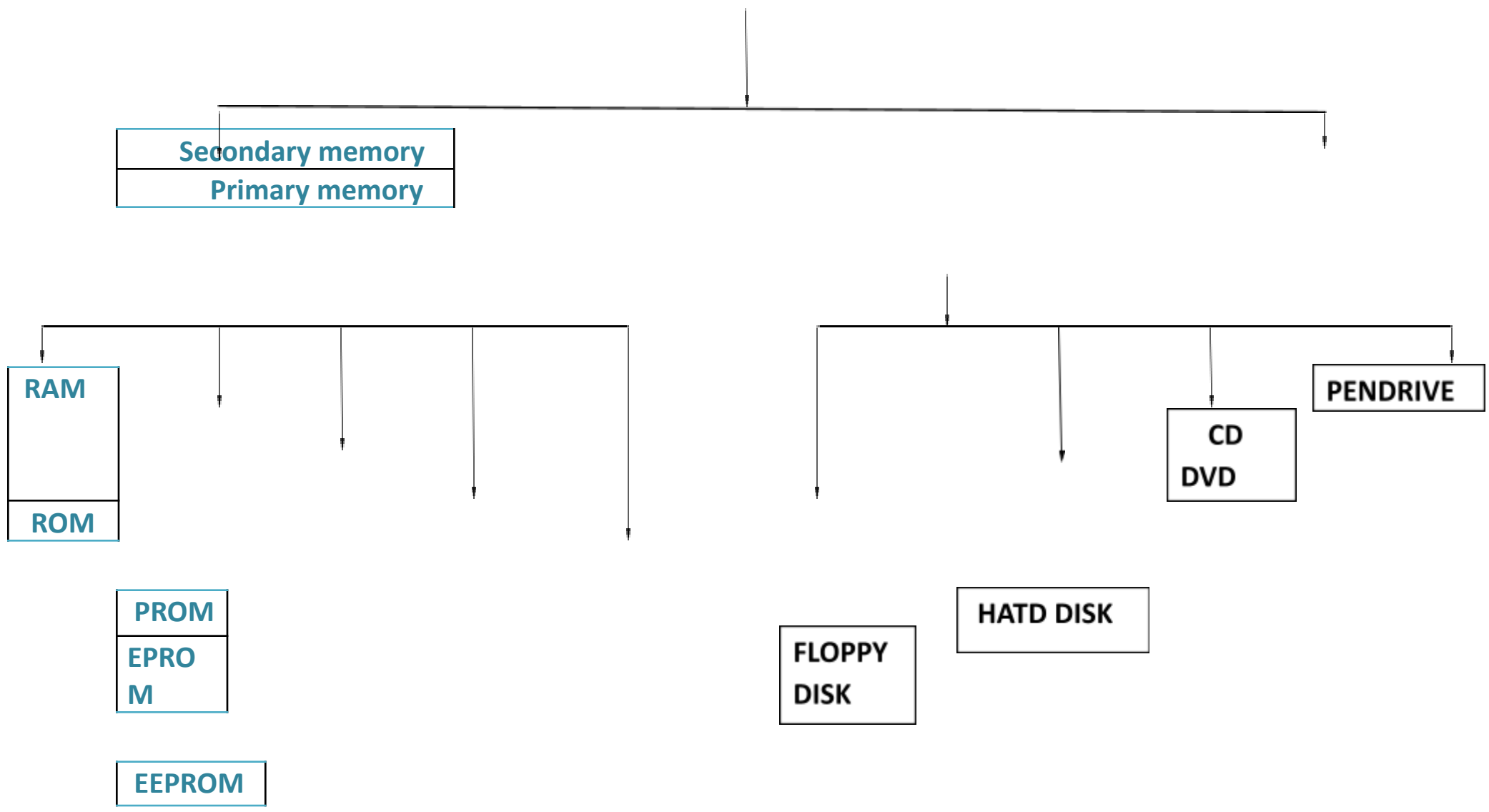
- **ASCII stand for American Standard Code For Information Interchange.**
- **ASCII is made up of 8 bit.**
- **When user type any character like text character, number, spelling character not returning anything for all that ASCII represent 8 bit code because computer only understand the language which is in the format 0 & 1.**
- **ASCII generally use for micro computer.**

EBCDIC CODE

- **EBCDIC stands for Extened Binary Code For Decimal Interchange Character.**
- **EBCDIC code is also use for representation of characters.**
- **It is used for the large computer like minicomputer, main frame computer.**
- **EBCDIC code used a combination of 0 & 1 with group of 7 bit.**

UNICODE :

- **Unicode is a special code which is used for International language.**
- **Unicode is also used for representation of any character in the form of 0 & 1.**
- **Unicode is group of 0 & 1. ex.Unicode generally used in Japnees & Chinees language for representation of any character.**



RAM :

- **Primary memory is volatile memory.**
- **The speed of p.m is fast as compare to auxiliary memory.**
- **The storage capacity is limited.**
- **The p.m is chip in cost.**
- **EX:-RAM,CACHE,SDRAM,DDR.**

ROM:-

- **ROM is stand for read only memory.**
- **ROM is already available in computer system at the time of manufacturing of computer.**
- **The program is already available in that memory.**
- **We can only read that program but can’t be change.**

PROM:-

- **PROM stands for Programmable Read Only Memory.**
- **This memory have a facility to change already return program in the ROM.**
- **We make a new program that can capable to change previous program in the ROM.**

EPROM:-

- **EPROM stands for Electrical Programmable Read Only Memory.**
- **These memories have also a power with inserting electrical signal to change the content of ROM.**

EEPROM:-

- **EEPROM stands for Electrical Erasable Programmable Read Only Memory.**
- **This memory also capable to delete the content of ROM with electrical signal as well as ultra violet rays. This memory also capable to vanish previous content of ROM.**