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# Course: Computer Skills

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# QNO:1. (a) In your opinion what are the 3 most important characteristics of computers, Explain each characteristic?

**ANS :**

**Characteristics Of Computer**

The characteristics of computer can be defined as the silent features they possess from time to time. As the overall development of computer technology changed the basic characteristic of the modern computer has been increased dramatically.

In our opinion there are three most important characteristics of a computer are following ;

* Speed
* Memory
* Accuracy

**Speed ::**

 Computers have an incredible speed with accuracy that is beyond human capabilities, Not only they have speed but the speed with accuracy and Pinpoint solutions to every problem arises before them.

The speed of the computer is considered one of the most important characteristics of computer.. As per human beings, the smallest unit of time is considered to be second, but not for computers seconds are further divided into milliseconds, microseconds, nanoseconds and microseconds.

The powerful **PC** can work almost 5 million instructions per second. When we discuss the speed of computer milliseconds are hundredth of a second, microseconds are the millionth of a second, nanoseconds are the billionth of a second, and picoseconds are trillionth of a second.

Speed is primarily the main characteristic of computer, their speed is measured in terms of **GIGAHERTZ** and **MEGAHERTZ**. They can solve complex to complex numerical and logical problems with ease compared to human beings.

**Memory ::**

This is also one of the most essential characteristics of computers these days they can store or save almost any volume of data due to its high storage capabilities.

Once the data or instruction saved to the computer memory it remains in the memory, until and unless someone deletes, users can recall or retrieve the data anytime, at any location they require, As the human being tends to forget small information given to them, but these machines stores all the information was given to them permanently.

These Machines can store the data as long as the user’s desire. The measurement of memory are **MEGABYTES** (**MB**), **GIGABYTES** (**GB**) And **TERABYTES** (**TB**).Hard disk and pen drives are examples of memory.

 **Accuracy ::**

They have a great speed and are unbelievably deadly accurate. The Errors occurs due to improper or wrong or inaccurate input given to the computer system. **PC** primarily depends upon the inputs.

Say if a user enters wrong or improper or inaccurate information to the computer obviously the output generated by them will be wrong, improper or inaccurate.

The Errors we received while using personal computer are generally called as “Human Errors” or the errors of programmers who writes program for better computer functions.

**GIGO** (Garbage In Garbage Out)Is a well-known term used for computer accuracy, if the input is wrong or inaccurate the output will also be wrong and inaccurate .

# (b) Write key characteristics of fourth generation of computers?

**1)** The fourth generation computers have microprocessor-based systems. It uses **VLSI** (Very Large Scale Integrated) circuits.

**2)** They are the cheapest among all the computer generation.

**3)** The speed, accuracy and reliability of the computers were improved in fourth generation computers.

**4)** Many high-level languages were developed in the fourth generation such as **COBOL**, **FORTRAN**, **BASIC**, **PASCAL** and C language.

**5)** A Further refinement of input/output devices was developed.

**6)** Networking between the systems was developed in fourth generation computer.

# Q2. (a)Discuss the importance of Arithmetic logic unit and Control unit of a computer system?

ANS : central processing unit (**CPU**) of a computer system. It performs all processes related to arithmetic and logic operations that need to be done on instruction words. In some processors, the arithmetic logical unit is divided into two units, an arithmetic unit (**AU**) and a logic unit (**LU**).

 The (**ALU**) is typically designed in such a way that it has a direct input and output access to the processor main memory –the random access memory (**RAM**). Now, the input and outputs flow along an electronic path that is known as a bus. The input consists of an instruction word that contains an operation code or sometimes a format code. The operation code informs the **ALU** what operation to perform and the operands are used in the operation. Examples of operations that are regularly carried out by the **ALU** include:

 The control unit (**CU**) is a component of the central processing unit of the computer system that controls the operations of the processor. It informs the arithmetic and logic unit, the computer’s main memory and the output and input devices how to respond to the command that have been sent to the processor. The control unit is taken to be the processor brain because it issues orders to everything and ensure that the best results are produced.

 Typically, the control unit has been designed with digital circuits, encoders, decoders, logic gates and flip-flops that are arranged in a certain fixed way. There is also a special control memory that stores microprograms based on flowcharts. The functions of the Control Unit (**CU**) include: Interprets instructions, regulate and control processor timing. Directs data flow through different components of the **CPU**.

# (b)Write a detailed note on importance of RAM (Random Access Memory)?

**Random-access memory (RAM)** is a type of computer data storage. A **RAM** device makes it possible to access data in random order, which makes it very fast to find a specific piece of information. Certain other types of storage are not random-access. For example, a hard disk drive and a **CD** will read and write data in a predetermined order. The mechanical design of these devices prescribes that data access is consecutive. This means that the time it takes to find a specific piece of information can vary greatly depending on where it is located on the disk.

**RAM** devices are used in computer systems as the main memory. **RAM** is considered **volatile memory**, which means that the stored information is lost when there is no power. So, **RAM** is used by the central processing unit (**CPU**) when a computer is running to store information that it needs to be used very quickly, but it does not store any information permanently.

Present-day **RAM** devices use integrated circuits to store information. This is a relatively expensive form of storage and the cost per unit of storage is much higher than for devices like a hard drive. However, the time to access data is so much faster for **RAM** that speed outweighs cost. A computer, therefore, uses a certain amount of **RAM** for fast-access, temporary storage of information and a much larger amount of non-random, permanent mass storage, like a hard disk drive. For example, a typical computer system may have two to eight **GB** (gigabytes) of **RAM**, while the storage capacity of the hard disk drive can be several hundred **GB** or even one **TB** (terabyte).

# Q3. Write a detailed note on Basic Organization of a computer System along with the functions of each part ?

# ANS :

## **Input:**

**1.** It accepts (or reads) instructions and data from outside world

**2.** It converts these instructions and data in computer acceptable form

**3.** It supplies the converted instructions and data to the computer system for further processing

## **Output Unit:**

**1.** It accepts the results produced by the computer, which are in coded form and hence, cannot be easily understood by us

**2.** It converts these coded results to human acceptable (readable) form

**3.** It supplies the converted results to outside world

## **Storage Unit:**

**1.** Data and instructions required for processing (received from input devices)

**2.** Intermediate results of processing

**3.** Final results of processing, before they are released to an output device.

* **Two Types of Storage**

 Primary storage

Secondary storage

##  **Primary storage:**

Used to hold running program instructions

 Used to hold data, intermediate results, and results of ongoing processing of job(s)

 Fast in operation

 Small Capacity

 Expensive

 Volatile (looses data on power dissipation)

##  **Secondary storage:**

Used to hold stored program instructions

 Used to hold data and information of stored jobs

 Slower than primary storage

 Large Capacity

 Lot cheaper that primary storage

 Retains data even without power

## **Arithmetic Logic Unit (ALU) :**

Arithmetic Logic Unit of a computer system is the place where the actual executions of instructions takes place during processing operation.

## **Control Unit (CU)**

Control Unit of a computer system manages and coordinates the operations of all other components of the computer system.

## **Central Processing Unit (CPU)**

It is the brain of a computer system.

It is responsible for controlling the operations of all other units of a computer system.

## **The System Concept :**

A system has following three characteristics:

**1.** A system has more than one element.

**2.** All elements of a system are logically related/

 **3.** All elements of a system are controlled in a manner to achieve the system goal.

A computer is a system as it comprises of integrated components (input unit, output unit, storage unit, and CPU) that work together to perform the steps called for in the executing program.

#  PAPER END .