Course: Computer Skills/ Applications
Semester: 1st
Instructor: Zakir Rahim
Due Date: 21 August, 2020

Program:BS(DT/RAD/MIC)
Total Marks: 30
Time: 4 Hours

Student Name:- Mudassar rauf
ID:- 15947

Instructions:

- Students are required to solve the provided assignment and upload it on SIC within specified time.
- The solutions must be type-written.
- The solutions must be uploaded either in Ms-Word format or pdf format.
- Students are required to save the file with their name and student id. For example ahmad_12345.

Q1. **(a) In your opinion what are the 3 most important characteristics of computers, Explain each characteristic?** (5)

Ans:-**1. Speed**: - As you know computer can work very fast. It takes only few seconds for calculations that we take hours to complete. You will be surprised to know that computer can perform millions (1,000,000) of instructions and even more per second.Therefore, we determine the speed of computer in terms of microsecond (10-6 part of a second) or nanosecond (10 to the power -9 part of a second). From this you can imagine how fast your computer performs work.

2.Accuracy: - The degree of accuracy of computer is very high and every calculation is performed with the same accuracy. The accuracy level is 7.determined on the basis of design of computer. The errors in computer are due to human and inaccurate data.

3. Storage: - The Computer has an in-built memory where it can store a large amount of data. You can also store data in secondary storage devices such as floppies, which can be kept outside your computer and can be carried to other computers.

(b) Write key characteristics of fourth generation of computers? (5)

Ans:-**Characteristic of Fourth Generation of Computers**

1.Microprocessor based system that uses Very Large Scale Integrated (VLSI) circuits.

2. Microcomputers became the cheapest at this generation.

3.Hand-held computer devices became more popular and affordable

4.Networking between the systems was developed and became of every day use in this generation.

5.Storage of memory and other storage devices has increased in big amount.

6.Outputs are now more reliable and accurate.

7.Processing power or speed has increased enormously.

8. With increment in the capacity of the storage systems large programs were started to be in use

9.Great improvement in the hardware helped great improvement in the output in screen, paper etc.

10.Size of the computer devices became such small that even desktop computers were easily movable along with portable computers such as laptops etc.

Example: IBM 3033, Sharp PC – 1211 etc.

Generation (Period)	Key hardware Technologies	Key software technologies	Key characteristics	Some rep. systems
Fourth (1975-1989)	ß ICs with VLSI technology ß Microprocessors; semiconductor memory ß Larger capacity hard disks as in-built secondary storage ß Magnetic tapes and floppy disks as portable storage media ß Personal computers ß Supercomputers based on parallel vector processing and symmetric multiprocessing technologies ß Spread of high-speed computer networks	ß Operating systems for PCs with GUI and multiple windows on a single terminal screen ß Multiprocessing OS with concurrent programming languages ß UNIX operating system with C programming language ß Object-oriented design and programming ß PC, Network-based, and supercomputing applications	ß Small, affordable, reliable, and easy to use PCs ß More powerful and reliable mainframe systems and supercomputers ß Totally general purpose machines ß Easier to produce commercially ß Easier to upgrade ß Rapid software development possible	ß IBM PC and its clones ß Apple II ß TRS-80 ß VAX 9000 ß CRAY-1 ß CRAY-2 ß CRAY-X/MP

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

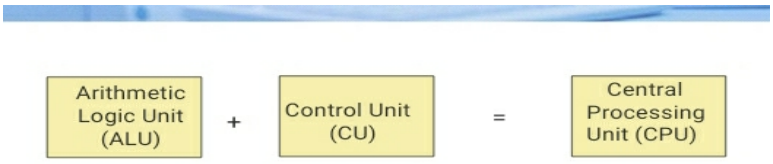
Ans:- **Arithmetic Logic Unit (ALU)**

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

Control Unit (CU)

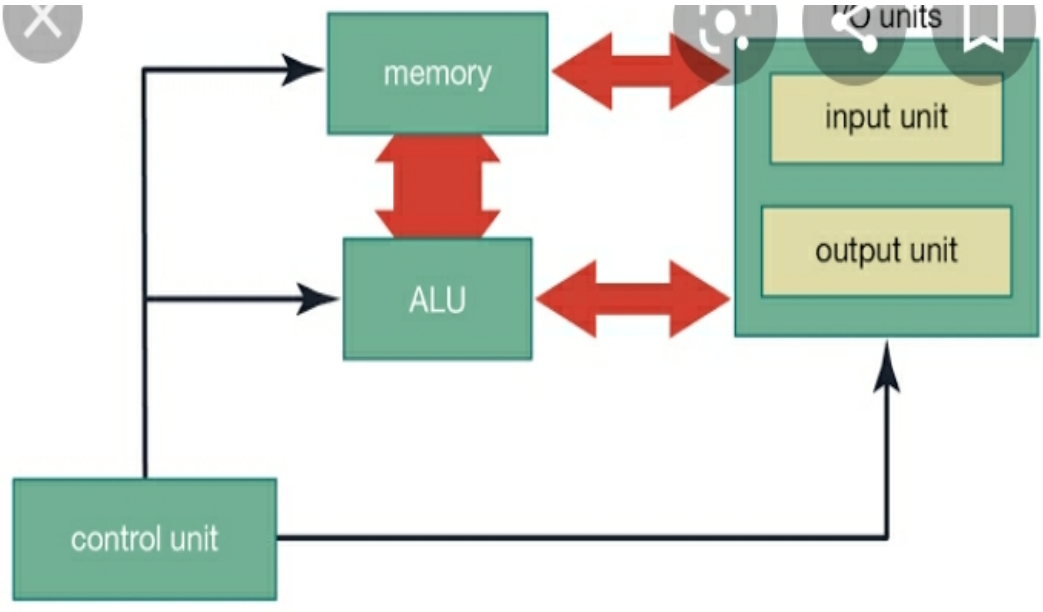
Control Unit of a computer system manages and coordinates the operations of all other components of the computer system

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.

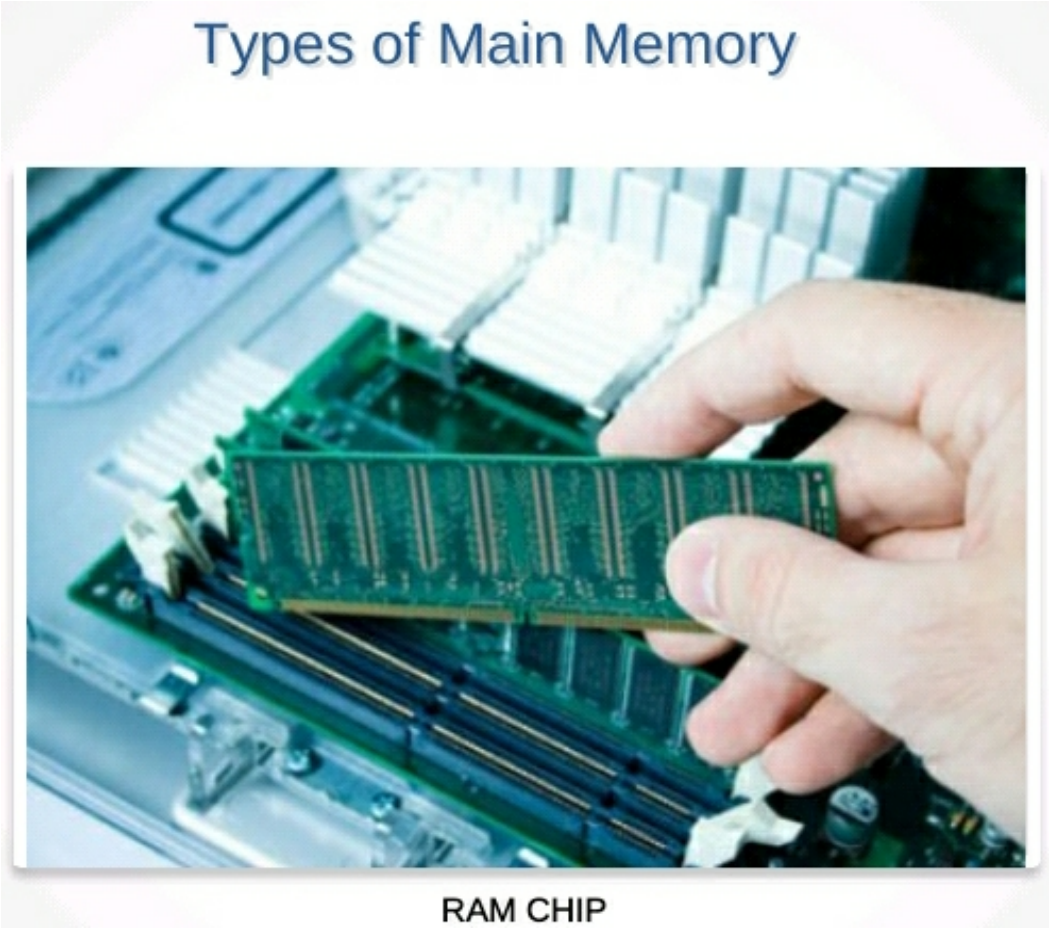


(b)Write a detailed note on importance of RAM (Random Access Memory)? (5)

Ans:-**1. Random Access Memory (RAM)**

- Volatile in nature

- In case of power interruption all the data in RAM is lost
- RAM can only store data as long as computer is ON.



RAM CHIP

Types of Main Memory

RAM chips are of two types

a. Dynamic RAM

b. Static RAM

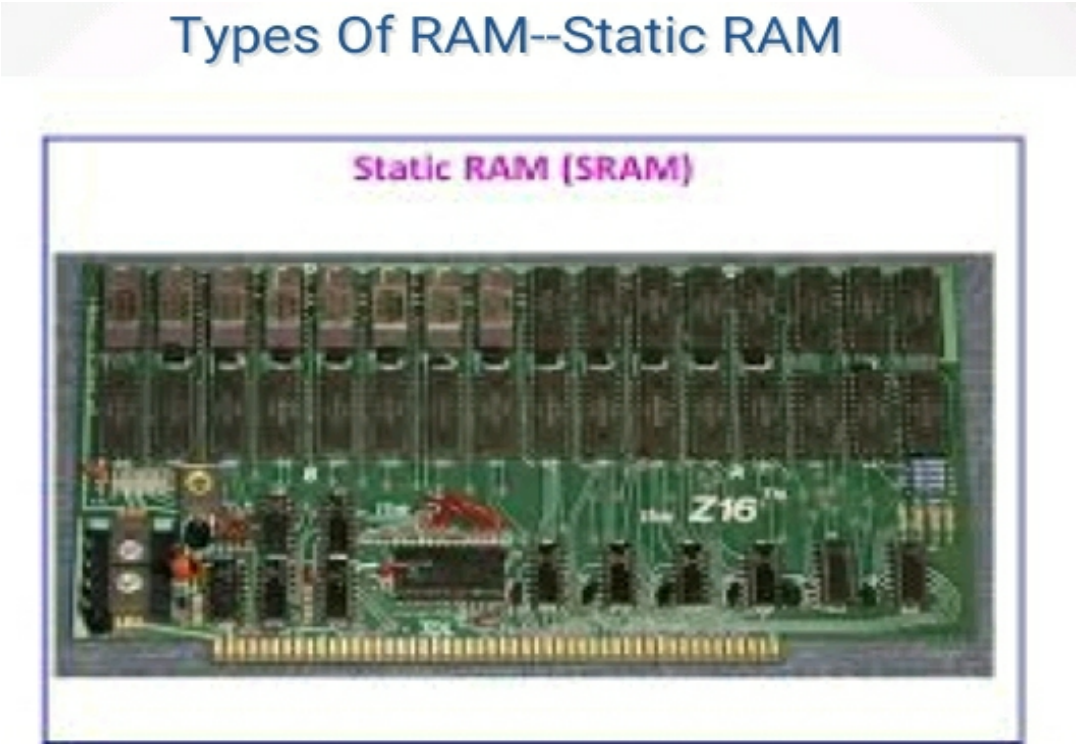
Dynamic RAM

Uses an external circuitry to periodically "regenerate" or refresh storage charge to retain the stored data.

Static RAM

Does not need any special regenerator circuit to retain the stored data.

Faster, costlier and consumes more power.



Q3. Write a detailed note on Basic Organization of a computer System along with the functions of each part. (10)

Ans:-Basic organization of computer system

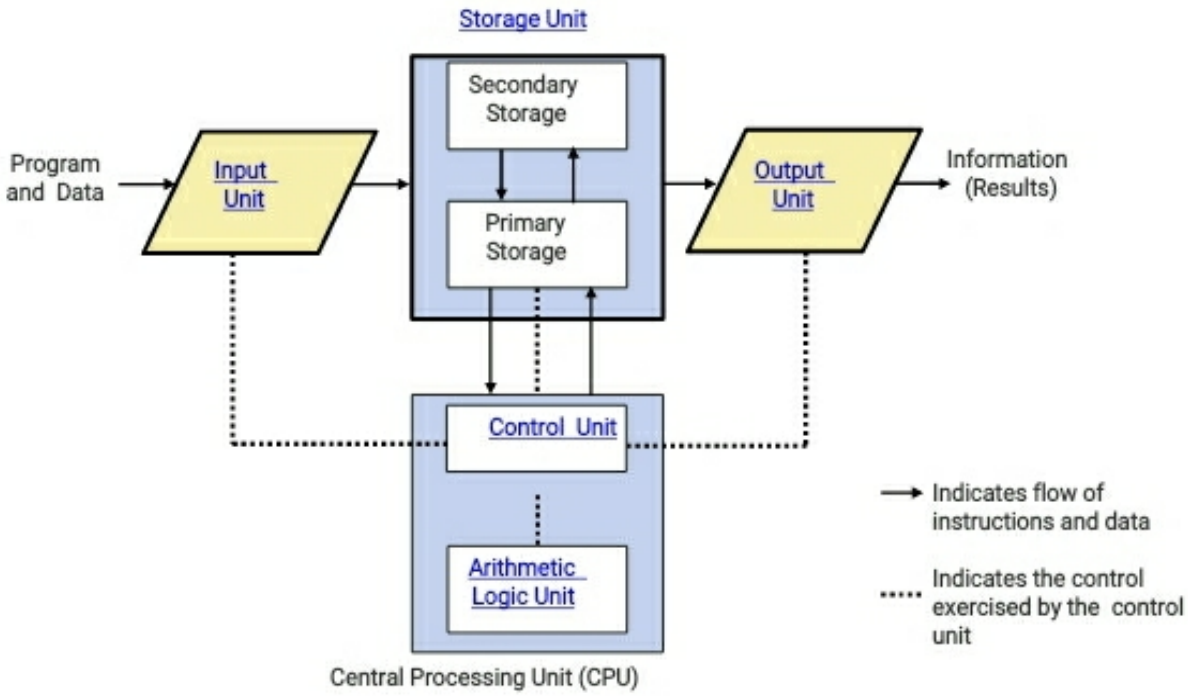
Explanation:

CPU : CPU is a brain of computer. It controls the computer system. It converts data to information.

ALU : This is a part of CPU. It consists of two units. one is arithmetic unit and another one is logic unit. Arithmetic and logical operation are performed in this part.

Input and Output unit : This unit controls input and output devices. input devices are keyboard, mouse etc.. and output devices are printer, monitor, plotter, etc....

Basic Organization of a Computer System



Input Unit

An input unit of a computer system performs the following functions:

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

An output unit of a computer system performs the following functions:

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

The storage unit of a computer system holds (or stores) the following:

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

1. **Primary storage**

- Used to hold running program instructions 3 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)

Two Types of Storage

2. Secondary storage

- Used to hold stored program instructions
- Used to hold data and information of stored jobs B Slower than primary storage
- Large Capacity

- Lot cheaper that primary storage
- Retains data even without power

Arithmetic Logic Unit (ALU)

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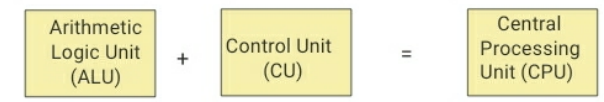
Central Processing Unit (CPU)



- It is the brain of a computer system
- B It is responsible for controlling the operations of all other units of a computer system