Chapter – 3 Components of the Computer System

1.Tangible and visible parts of computer is known as _____ **[March 2020, Score 1]**

Ans. Hardware

2. Write the names of any four CPU registers. **[March 2020, Score 2]**

Ans. Accumulator, Memory Address Register, Program Counter, Instruction Register

3. (a) Compare RAM and ROM. **[March 2020, Score 2]**

(b) Write a short note about any three output devices **[March 2020, Score 3]**

Ans.

a)

RAM	ROM
It is faster than ROM	It is a slower memory
It allows reading and writing	Allows reading only
volatile	Non volatile

b) Visual Display Unit**:** A Visual Display Unit is an output device that visually conveys text, graphics and video information

LCD projector: An LCD projector is used to display video, images etc. on a screen or flat surface.

Plotter: Plotter is a device that draws pictures using pen. They are classified into two: Drum plotter and Flatbed plotter.

4. Define the term e-Waste. Explain briefly about any two E-waste disposal methods.

[July 2019, Score 3]

Ans. e - Waste refers to un-wanted or non-working electronic products. They cause serious health and pollution problems.

Following methods are used for e-waste disposal.

a) Reuse: It refers to second hand use or use after slight modification.

b) Incineration**:** It is a controlled and complete combustion process, in which waste materials are burned in specially designed incinerators at high temperatures.

5. Explain the features of any five input devices of a computer. **[July 2019, Score 5]**

Ans. 1) Keyboard**:** Keyboard is a commonly used input device used to enter data (alphabets, numbers etc.). A standard keyboard has 101 keys. Its layout is called QWERTY design. Keyboard can be either wired or wireless. It is connected to a computer using serial, PS/2 or USB port.

2) Mouse **:** A mouse is a hand held device used to control the movement of cursor on the screen. It has one or more buttons. There are two types of mouse: mechanical mouse and optical mouse. An optical mouse uses light, whereas mechanical mouse uses mechanical movement.

3) Light Pen **:** A light pen is a pointing device in the form of a pen. It is used to select objects directly from the screen. It uses a light detector. They are used in CAD (Computer Aided Design), and drawing purpose (Engineers and Artist).

4) Touch Screen**:** A touch screen is an input device that operates by touching the screen. It is commonly used in Tablet PC, Mobile phone etc. It is also used in railway stations and ATM machines

5) Graphic tablet**:** A graphic tablet is an input device that enables the users to hand draw images, graphics etc. It consists of a flat surface on which users draw.

6. Small and fast memory between processor and RAM is called ----- **[March 2019, Score 1]**

Ans. Cache memory

7. Name any four e-Waste disposal methods. **[March 2019, Score 2]**

Ans. Reuse, Incineration, Recycling and Land filling

8. a) Write any two examples of optical storage devices. **[March 2019, Score 1]**

b) Rearrange the following memories in descending order depending on their speed. (Hard disk, RAM, Cache Memory, Registers) **[March 2019, Score 2]**

c) List four major functions of operating system **[March 2019, Score 2]**

Ans. a) Compact disk (CD), Digital Versatile Disk (DVD)

b) Registers, Cache Memory, RAM, Hard Disk

c) Process management, Memory management, Device management, File management

9. What are the major functions of operating system? **[July 2018, Score 2]**

Ans. Process management, Memory management, Device management and File management

10. a) The fastest memory in a computer is ..... **[July 2018, Score 1]**

b) Categorize the software given below into operating system, application package and utility program. **[July 2018, Score 2]**

Linux, OpenOffice Calc, Windows, WinZip, Kaspersky OpenOffice Writer.

Ans. a) Register

b) Operating System - Linux, Windows

Application program - Open Office Calc, Open Office Writer

Utility Program - WinZip, Kaspersky

11. a)1 Byte=---------- Bits . **[July 2018, Score 1]**

b) Explain the various types of memories in a computer system. **[July 2018, Score 4]**

Ans. a) 8 bits

b**)** Memory is used to store data and instructions. Memory can be classified into two: Primary memory and Secondary memory.

Primary memory holds data and results temporarily. Secondary memory on the other hand holds data and information permanently. Primary memory is volatile as secondary memory is non-volatile.

Primary memory: There are three types of Primary memory: Random Access Memory (RAM), Read Only Memory (ROM) and Cache memory.

RAM (Random Access Memory): RAM is volatile and is used to temporarily store data and instructions. Primary memory is a semiconductor memory.

ROM (Read Only Memory): ROM is non-volatile and is used to store start-up or bootstrap programs (Firmware).

Cache memory: Cache memory is a high-speed memory placed between main memory and CPU to increase the speed of execution. Frequently used data and programs are placed in the cache memory.

Secondary memory

Secondary memory is also known as auxiliary memory. It is used to store large volumes of programs and Data. Magnetic devices, Optical disks and Semiconductor devices are commonly used secondary storage. Secondary memory has a high storage capacity than Primary memory. Secondary memory is cheaper than Primary memory.

Magnetic Storage Device: Magnetic storage devices use plastic tape or disks coated with magnetic materials. Data is recorded magnetically.

Optical Storage Devices : Optical disk uses laser rays for reading and writing data. Data is written in the form of pits and lands (0 and 1) .

Flash Memory Devices : Flash Memory is an electronic non-volatile storage medium which can be electrically erased and re-programmed (EEPROM).

12. What is cache memory? **[March 2018, Score 2]**

Ans. Cache memory is a high-speed memory placed between main memory and CPU to increase the speed of execution. Frequently used data and programs are placed in the cache memory.

13. a) Name two different language processors which translate high level language program into machine language program.

b) What is operating system? Give two examples. **[March 2018, Score 3]**

Ans. a) Compiler and interpreter

b) An Operating system is a program that acts as an interface between the hardware and the user. The primary aim of operating system is to use hardware in an efficient way. Examples of operating systems are Windows, DOS.

14. List and explain various components of system software. **[March 2018, Score 5]**

Ans. A system software is a software designed to control the hardware. It provides an environment for the working of application programs. It is classified into three: Operating system, Language Processor and Utility software.

An Operating system is a program that acts as an interface between the hardware and the user. The primary aim of operating system is to use hardware in an efficient way. Examples of operating systems are Windows, DOS.

A language processor is a program which converts source code into machine code. . The different language processors are: 1) Assembler 2) Compiler 3) Interpreter.

A utility program allows a user to perform maintenance type tasks. It helps in the performance of a computer. Some of the commonly available utilities are

Compression tools: Eg. WinZip, WinRAR

Disk defragmenter: rearranges files on the computer

Backup software: Backup means copying files.

Antivirus software: Eg. -Avast, Norton, Kaspersky etc.

15. Which one of the following is NOT a free and open source software?

a) GNU/ Linux **[July 2017, Score 1]**

b) MS Office

c) GIMP

d) Mozilla Firefox

Ans. MS Office

16. Which among the following is NOT a recommended method for e-waste disposal?

a) Reuse b) Incineration c) Land filling d) Recycling **[July 2017, Score 1]**

Ans. Land filling

17. What do you mean by data processing? Describe the various activities involved in data processing.

[July 2017, Score 5]

Ans. Data processing**:** The process of converting data into information is called data processing.

The different steps in Data processing are:

1) Capturing data : Data must be captured before it is processed. The source document is prepared by collecting required data and facts.

2) Input of data **:** Once the data has been extracted from the source document, it must be entered into a computer for processing.

3) Processing : The data stored in the computer is retrieved for processing. Various operations like calculation, classification, comparison, sorting etc. are carried out.

4) Storage : The result of processing is stored for future use.

5) Output of information **:** The output obtained from data processing is displayed in suitable form.

6) Distribution of Information : The information obtained through output device is distributed to the users.

18. Write the following memories in descending order of their speed. (Fastest to slowest)

[March 2017, Score 1]

i. Cache Memory

ii. RAM

iii. Hard disk

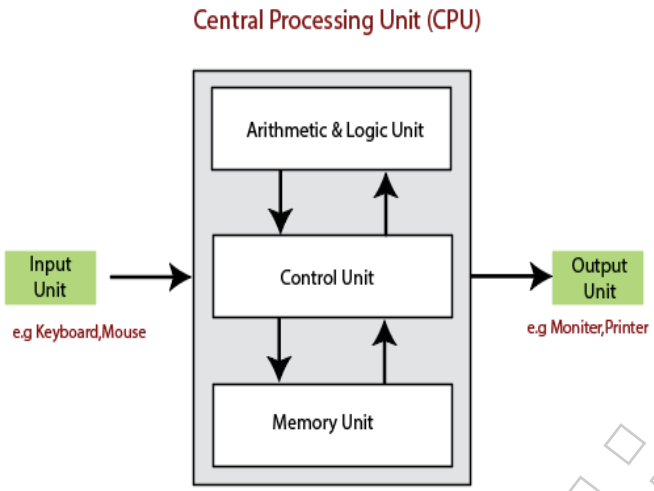
iv. Registers

Ans. Registers, Cache Memory, RAM, Hard Disk

19. With the help of a block diagram, Explain the functional units of a computer

[March 2017, Score 5]

Ans



Functional Units of a computer: Input Unit, Central Processing Unit (CPU), Storage Unit and Output Unit.

Input Unit: The data and instructions for their processing are entered into the computer through the input unit. They are stored in the memory (storage unit). Eg: keyboard, mouse, scanner etc.

Central Processing Unit: CPU is the brain of the computer. It consists of three components - Arithmetic Logic Unit (ALU), Control Unit (CU) and registers. ALU performs calculations and logical operations such as comparisons and decision making. CU manages and co-ordinates all other units of the computer. Registers are temporary storage elements that facilitate the functions of CPU.

Storage Unit: It holds data and instructions required for processing, intermediate results for ongoing processing and final results of processing.

Output Unit: The information obtained after data processing is supplied to the outside world through this unit. Monitor and printer are the commonly used output devices.

20. Which one holds the memory address of the next instruction to be executed?

[July 2016, Score 1]

a) Accumulator

b) PC

c) MBR

d) MAR

Ans. b) PC

21. What do you mean by e-waste? Explain the role of students in e-waste disposal.

[July 2016, Score 3]

Ans. e - Waste refers to un-wanted or non-working electronic products. They cause serious health and pollution problems.

Role of students in e-waste disposal

1. Stop buying unnecessary electronic equipment
2. When electronic equipment gets faulty, try to repair it instead of buying new one

22. Pick out the software which rearranges the scattered files in the hard disk and improves the performance of the system **[March 2016, Score 1]**

a) Back up software

b) File compression software

c) Disk defragmenter

d) Antivirus software

Ans. Disk defragmenter

23. Describe the different types of memories and memory devices in computer with features and examples. **[March 2016, Score 5]**

Ans. Memory is used to store data and instructions. Memory can be classified into two: Primary memory and Secondary memory.

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Primary memory: There are three types of Primary memory: Random Access Memory (RAM), Read Only Memory (ROM) and Cache memory.

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Flash Memory Devices : Flash Memory is an electronic non-volatile storage medium which can be electrically erased and re-programmed (EEPROM). It is used in mobile phones, digital camera etc. BIOS in PC is usually stored in flash memory

24. Which software is used for calculation? **[July 2015, Score 1]**

a) Word Processor b) Spread sheet c) Presentation d) Multimedia

Ans. b) Spread sheet

25. Accumulator stores a) address of data b) instruction to be executed c) address of next instruction to be executed d) intermediate result **[July 2015, Score 1]**

Ans. d) intermediate result.

26. To use a computer not only the hardware but also softwares are required. Explain the classification of software. **[July 2015, Score 5]**

Ans. A set of programs written for a computer is called software. They are classified into two · System software and Application Software.

A system software is a software designed to control the hardware. It provides an environment for the working of application programs. It is classified into three: Operating system, Language Processor and Utility software.

An Operating system is a program that acts as an interface between the hardware and the user. The primary aim of operating system is to use hardware in an efficient way. Examples of operating systems are Windows, DOS.

A language processor is a program which converts source code into machine code. The different language processors are: 1) Assembler 2) Compiler 3) Interpreter.

A utility program allows a user to perform maintenance type tasks. It helps in the performance of a computer.

Application software is a set of programs designed for a specific task. It is designed for end user. Application software are of two types: General purpose and specific purpose application software. Some of the common general-purpose application software are: Word processor, spread sheet etc.

27. a) What do you mean by cache memory? **[March 2015, Score 1]**

b) Write the names of the figures given below **[March 2015, Score 1]**

Ans. a) Cache memory is a high speed memory placed between main memory and CPU to increase the speed of execution. Frequently used data and programs are placed in the cache memory

b) QR code Barcode

28. Explain how e-waste creates environmental and health problem. What are the different methods of e-waste disposal? Which one is the most effective in your point of view? Why

[March 2015, Score 5]

Ans. E-waste contains some toxic substances like mercury, lead, cadmium etc. which produces cancer, reproductive problems and other health problems if not properly managed. Inappropriate disposal methods for e-waste fail to manage toxic materials properly. This will contaminate our soil, water and air.

Different methods of e-waste disposal:

1.Reuse

2.Recycling

3.Inceneration