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COMPUTER APPLICATIONS

1. INTRODUCTION TO COMPUTERS

SECTION – A

Choose the correct answer:

1. First generation computers used
   (a)Vacuum tubes (b) Transistors (c) Integrated circuits (d) Microprocessors
2. Name the volatile memory
   (a) ROM (b) PROM **(c) RAM** (d) EPROM
3. Identify the output device
   (a) Keyboard (b) Memory **(c) Monitor** (d) Mouse
4. Identify the input device
   (a) Printer **(b) Mouse** (c) Plotter (d) Projector
5. …… Output device is used for printing building plan, flex board, etc.
   (a) Thermal printer **(b) Plotter** (c) Dot matrix (d) inkjet printer
6. In ATM machines, which one of the following is used to
   (a) Touch Screen (b) speaker (c) Monitor (d) Printer
7. When a system restarts …….. which type of booting is used.
   (a) Warm booting (b) Cold booting (c) Touch boot (d) Real boot.
8. Expand POST
   (a) Post on self Test (b) Power on Software Test
   c) Power on Self Test (d) Power on Self Text
9. Which one of the following is the main memory?
   (a) ROM **(b) RAM** (c) Flash drive (d) Hard disk
10. Which generation of computer used IC's?
    (a) First (b) Second **(c) Third** (d) Fourth

SECTION-B

Short Answers

1.What is a computer?

A computer is an electronic device that processes the input according to the set of instructions provided to it and gives the desired output at a very fast rate.

2.Distinguish between data and information.

Data	Information
Data is defined as an unprocessedcollection of raw facts, suitable for communication, interpretation or processing.	Information is a collection of facts from which conclusions may be drawn.
Example: 134, 16 'Kavitha', 'C'are data.	**Example:** Kavitha is 16 years old.

3. What are the components of a CPU?

The CPU has three components which are Control unit, Arithmetic and logic unit (ALU) and Memory unit.

4. What is the function of an ALU?

The ALU is a part of the CPU where various computing functions are performed on data. The ALU performs arithmetic operations such as addition, subtraction, multiplication, division and logical operations.

5. Write the functions of control unit.

The control unit controls the flow of data between the CPU, memory and I/O devices. It also controls the entire operation of a computer.

6. What is the function of memory?

* The Memory Unit is of two types which are primary memory and secondary memory.
* The primary memory is used to temporarily store the programs and data
* The secondary memory is used to store the data permanently.

7. Differentiate Input and output unit.

Input Unit	Output Unit
An Input unit is used to feed any form of data to the computer, which can be stored in the memory unit for further processing.	An Output Unit is any hardware component that conveys information to users in an understandable form
Example: Keyboard, mouse	**Example:**Monitor, Printer

8. Distinguish Primary and Secondary memory.

Primary Memory	Secondary memory
The Primary Memory is volatile, that is, the content is lost when the power supply is switched off.	The Secondary memory is non-volatile, that is, the content is available even after the power supply is switched off.
The primary memory is used to temporarily store the programs and data **Example:** Random Access Memory (RAM).	The secondary memory is used to store the data permanently **Example:** Hard disk, DVD ROM.

SECTION-C

Explain in Brief

1. What are the characteristics of a computer?

Computers have revolutionized our lives with their speed, accuracy, storage, reliability, versatility and diligence performing a job, it is truly remarkable.

2. Write the applications of computer.

Computers are seen everywhere around us, in all spheres of life, in the field of education, research, travel and tourism, weather forecasting, social networking, e-commerce, Robotics , Nanotechnology, Bioengineeringetc.

3. What is an input device? Give two examples.

An input device is a hardware or peripheral device used to send data to a computer. An input device allows users to communicate and feed instructions and data to computers for processing, display, storage and/or transmission.

Example: Keyboard, mouse, Scanner, Track Ball, Light Pen.

4. Name any three output devices.

An output device is any peripheral that receives data from a computer

Monitor: Monitor is the most commonly used output device to display the information. It looks like a TV.

Plotter: Plotter is an output device that is used to produce graphical output on papers.

Printers: Printers are used to print the information on papers.

Speakers: Using speaker along with speech synthesize software, the computer can provide voice output.

Multimedia Projectors: Multimedia projectors are used to produce computer output on a big screen

5. Differentiate optical and Laser mouse

Optical mouse	Laser mouse
Measures the motion and acceleration of pointer.	Measures the motion and acceleration of pointer.
It uses light source instead of ball to judge the motion of the pointer.	Laser Mouse uses Laser Light
Optical mouse is less sensitive towards surface.	Laser Mouse is highly sensitive and able to work on any hard surface

6. Write shortnote on impact printer

*An impact printer is a type of printer that works by direct contact of hammers or pins on ribbon.

*These printers can print on multi-part (using carbon papers) by using mechanical pressure.For example, Dot Matrix printers and Line matrix printers are impact printers.

Dot Matrix printer :A Dot matrix printer that prints using a fixed number of pins or wires. Each dot is produced by a tiny metal rod, also called a “wire” or “pin”.

Line matrix printers : Line matrix printers use a fixed print head for printing. Basically, it prints a page-wide line of dots. But it builds up a line of text by printing lines of dots.

7. Write the characteristics of sixth generation.

*Sixth Generation, computers could be defined as the era of intelligent computers, based on Artificial Neural Networks.

*The most dramatic changes in the sixth generation will be the explosive growth of Wide Area Networking.

*Natural Language Processing (NLP) is a component of Artificial Intelligence (AI).

*It provides the ability to develop the computer program to understand human language.

8. Write the significant features of monitor.

*Monitor is the most commonly used output device to display the information. It looks like a TV.Pictures on a monitor are formed with picture elements called PIXELS.

*There are many types of monitors available such as CRT (Cathode Ray Tube), LCD (Liquid Crystal Display) and LED (Light Emitting Diodes).

*Monochrome which display text or images in Black and White or can be color, which display results in multiple colors.

*The monitor works with the VGA (Video Graphics Array) card. The video graphics card helps the keyboard to communicate with the screen.

SECTION - D

Explain in detail

1. Explain the basic components of a computer with a neat diagram.

* The computer is the combination of hardware and software. Hardware is the physical component of a computer like motherboard, memory devices, monitor, keyboard etc.

* Software is the set of programs or instructions. Both hardware and software together make the computer system to function.Every task given to a computer follows an Input- Process- Output Cycle (IPO cycle). It needs certain input, processes that input and produces the desired output.

Components of a computer

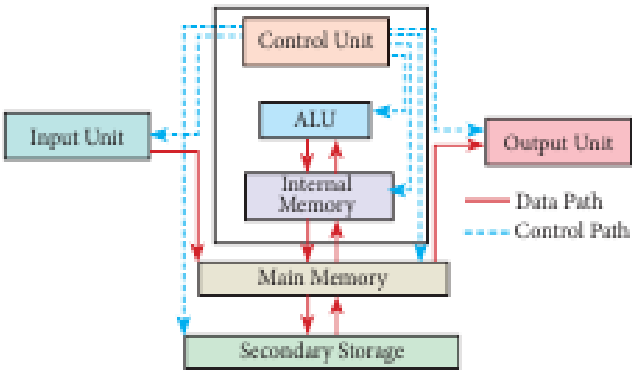


Figure 1.3 components of a computer

Input Unit

Input unit is used to feed any form of data to the computer, which can be stored in the memory unit for further processing. Example: Keyboard, mouse, etc.

Central Processing Unit

CPU is the major component which interprets and executes software instructions. It also control the operation of all other components such as memory, input and output units. The CPU has three components which are Control unit, Arithmetic and logic unit (ALU) and Memory unit.

Arithmetic and Logic Unit

The various computing functions are performed on data. The ALU performs arithmetic operations such as addition, subtraction, multiplication, division and logical operations.The logical operations of ALU promote the decision-making ability of a computer.

Control Unit

The control unit controls the flow of data between the CPU, memory and I/O devices. It also controls the entire operation of a computer.

Output Unit

An Output Unit is any hardware component that conveys information to users in an understandable form. Example: Monitor, Printer etc.

Memory Unit

* The Memory Unit is of two types which are primary memory and secondary memory. The primary memory is used to temporarily store the programs and data. The Primary Memory is volatile, that is, the content is lost when the powersupply is switched off. The Random Access Memory (RAM) is an example ofa main memory.

* The secondary memory is used to store the data permanently. The Secondary memory is non-volatile, that is, the content is available even after the power supply is switched off. Hard disk, CD-ROM and DVD ROM are examples of secondary memory.

2. Explain the following

a. Inkjet Printer

* Inkjet Printers use colour cartridges which combined Magenta, Yellow and Cyan inks to create color tones.
* A black cartridge is also used for monochrome output. Inkjet printers work by spraying ionised ink at a sheet of paper.
* The speed of Inkjet printers generally range from 1-20 PPM (Page Per Minute).
* An Inkjet printer can spread millions of dots of ink at the paper every single second.
* A tiny electric currents controlled by electronic circuits are used inside the printer to spread ink in jet speed.

b. Multimedia projector

* Multimedia projectors are used to produce computer output on a big screen. These are used to display presentations in meeting halls or in classrooms.

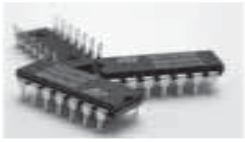
c. Bar code

* A Bar code is a pattern printed in lines of different thickness. The Bar code readerscans the information on the bar codes transmits to the Computer for further processing.
* The system gives fast and error free entry of information into the computer.

d. QR code Reader

The QR code is the two dimension bar code which can be read by a camera and processed to interpret the image.

3. Discuss the various generations of computers.

SN	Generation	Period	Main Component used	Merits/Demerits
1	**First Generation**	1942-1955	 **Vacuum tubes**	• Big in size • Consumed more power • Malfunction due to overheat • Machine Language was used
First Generation Computers - ENIAC , EDVAC , UNIVAC 1 ENIAC weighed about 27 tons, size 8 feet × 100 feet × 3 feet and consumed around 150 watts of power				
2	**Second Generation**	1955-1964	 **Transistors**	• Smaller compared to First Generation • Generated Less Heat • Consumed less power compared to first generation • Punched cards were used • First operating system was developed - Batch Processing and Multiprogramming Operating System • Machine language as well as Assembly language was used.
Second Generation Computers **IBM 1401, IBM 1620, UNIVAC 1108**				
3	**Third Generation**	1964 -1975	 **Integrated Circuits (IC)**	• Computers were smaller, faster and more reliable • Consumed less power • High Level Languages were used
Third Generation Computers **IBM 360 series, Honeywell 6000 series**				
4	**Fourth Generation**	1975-1980	 **Microprocessor** Very Large Scale Integrated Circuits (VLSI)	• Smaller and Faster • Microcomputer series such as IBM and APPLE were developed • Portable Computers were introduced.
5	**Fifth Generation**	1980 - till date	 **Ultra Large Scale Integration (ULSI)**	• Parallel Processing • Super conductors • Computers size was drastically reduced. • Can recognize Images and Graphics • Introduction of Artificial Intelligence and Expert Systems • Able to solve high complex problems including decision making and logical reasoning
6	**Sixth Generation**	In future		• Parallel and Distributed computing • Computers have become smarter, faster and smaller • Development of robotics • Natural Language Processing • Development of Voice Recognition Software

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