

**POLLACHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

107/1-B, POOSARIPATTI, POLLACHI - 642 205.

Degree/ Branch: B. E / Common to all Branch**Semester/ Year: I / I****Subject Code / Name: GE2112/ Fundamentals of Computing and Programming**

(Question Bank)

UNIT I: Introduction to Computers**Part A (2 marks for each question)**

1. In your own words, explain what a computer is.
A computer is an electronic device used for performing calculation and controlling operations to process the information in order to achieve the desired result.
2. Describe four different types of computers.
 - Micro Computers
 - Mini Computers
 - Mainframe Computers
 - Super computer
3. What is hardware?
Hardware refers to all visible devices that are assembled together to build a computer system. This includes various input devices, CPU, Output devices and memory.
4. What is software?
Software is the set of programs, which are used to perform specific task for different purposes.
5. What is the central processing unit of a computer?
CPU referred as brain of a computer. It is set of electronic circuitry which executes stored program instruction it controls all internal, external devices, operates only on binary data, i.e. data composed on 1's and 0's. It is also known as a processor.
6. Why is it so important to the operation of the computer?
The CPU is a brain of the computer system converts data (input) into meaningful information (output).
7. Describe different applications, or uses, of computers.
 - Education
 - Science
 - Medicine and health care
 - Entertainment
 - Business application
 - Publishing

- communication
8. What is a bit?
A bit is the smallest unit of information held in a computer.
 9. What is a byte?
A combination of bits that represent one character. A byte is usually composed of 8 bits.
 10. What is the meaning of computer 'memory'?
Memory refers to the temporary internal storage areas within a computer. The term memory is usually used as shorthand for 'physical memory', which refers to the actual chips capable of holding data.
 11. What is RAM?
The main type of memory and the most familiar to users is random access memory (RAM). RAM is the same as main memory. A computer can both write data into RAM and read data from RAM.
 12. What is a storage device?
The purpose of storage in a computer is to hold data or information and get that data to the CPU as quickly as possible when it is needed. Computers use disks for storage. Hard disks that are located inside the computer and floppy or compact disks that are used externally.
 13. What is a diskette?
A small, removable, flexible plastic disk covered with a thin layer of a magnetisable substance, onto which digital data can be recorded and stored. It is also known as a floppy disk.
 14. What is a hard drive?
The storage area within the computer itself, where megabytes of space are available to store bits of information.
 15. What is a database?
A structured assembly of logically related data designed to meet various applications.
 16. What is an optical disk?
Optical disk: A storage device that uses reflecting surfaces and laser technology to read and write data on a disk. It is also known as a laser disk.
 17. What is documentation and why is it so important?
Information needed to develop, use or maintain computer hardware and software and to permit access and retrieval of the data.
 18. Define viruses.
A computer program that is planted in one computer and then transferred, hidden in useful information, to one or more other computers with the intention of corrupting or wiping out information in the recipient computer.
 19. What are the characteristics of a computer?
 - Speed

- Accuracy
- Automatic
- Endurance
- Versatility
- Reduction of cost

20. What are the input devices used in computer?

- Keyboard
- Mouse
- Joystick
- Touch Sensitive Screen
- Light Pen
- Digital Stills Camera
- Bar Codes
- Smart Cards
- Voice Data Entry

21. What are the output devices?

- Monitor
- printer
- speaker

22. What do you mean by primary memory?

Primary storage is directly connected to the central processing unit of the computer. It must be present for the CPU to function correctly.

23. What do you mean by desktop?

The area on the display screen where icons are grouped is often referred to as the desktop because the icons are intended to represent real objects on a real desktop.

24. List the functions of CPU?

- Process Management
- Memory Management
- Secondary Storage Management
- File Management

25. What are the main operations of CPU?

- Fetch
- decode
- execute
- Write back.

26. Write about the cache memory?

It is a special type of internal memory. Some of the information in the main memory is duplicated in the cache memory, which is slightly slower but of much greater capacity than the processor registers, and faster but much smaller than main memory.

27. What are the types of RAM?

- Dynamic RAM
- Static RAM

28. What are the types of printers?

- Dot Matrix Printers
- Line Printer
- Ink-Jet Printers
- Laser Printers

29. What is the usage of scanners?

- Graphics
- Data-Entry
- Digital-Files

30. Convert the hexadecimal number 1C to decimal.

Solution:

$$\begin{array}{cc} 1 & C \\ 0001 & 1100 = 2^4 + 2^3 + 2^2 = 16 + 8 + 4 = 28 \end{array}$$

31. Convert the binary number to hexadecimal: 1100101001010111

Solution:

$$\begin{array}{cccc} 1100 & 1010 & 0101 & 0111 \\ C & A & 5 & 7 = CA57 \end{array}$$

32. Convert octal number 2374 in decimal number.

Solution:

$$\begin{array}{cccc} \text{Weight} & 8^3 & 8^2 & 8^1 & 8^0 \\ \text{Octal number} & 2 & 3 & 7 & 4 \\ 2374 = (2 \times 8^3) + (3 \times 8^2) + (7 \times 8^1) + (4 \times 8^0) = 1276 \end{array}$$

33. Convert the octal numbers 25 and 140.

Solution:

$$\begin{array}{ccccccc} \text{Octal Digit} & 2 & 5 & & 1 & 4 & 0 \\ \text{Binary} & 010 & 101 & & 001 & 100 & 000 \end{array}$$

34. Convert the following binary numbers to octal: 110 101, 10111001

Solution:

$$\begin{array}{ccccccc} \text{Binary Number} & 1 & 1 & 0 & 1 & 0 & 1 & & 1 & 0 & 1 & 1 & 1 & 0 & 0 & 1 \\ \text{Octal} & 6 & & & 5 = 65 & & & & 5 & & 7 & & & 1 & & = 571 \end{array}$$

35. Convert the decimal number 359 to octal.

Solution

$$\begin{array}{ll} 359/8 = 44.875 & 0.875 \times 8 = 7 \text{ (LSD)} \\ 44/8 = 5.5 & 0.5 \times 8 = 4 \\ 5/8 = 0.625 & 0.625 \times 8 = 5 \text{ (MSD)} \end{array}$$

The number is 547.

36. Convert the binary whole number 101101 to decimal

Solution:

$$\begin{array}{l} \text{Weight} : 2^5 \ 2^4 \ 2^3 \ 2^2 \ 2^1 \ 2^0 \\ \text{Binary no:} \ 1 \ 0 \ 1 \ 1 \ 0 \ 1 \\ \text{Value} : 32 \ 0 \ 8 \ 4 \ 0 \ 1 \\ \text{Sum} = 45 \end{array}$$

37. Convert the decimal number 650 to hexadecimal

Solution

$$\begin{array}{ll} 650/16 = 40.625 & 0.625 \times 16 = 10 = A \text{ (LSD)} \\ 40/16 = 2.5 & 0.5 \times 16 = 8 = 8 \\ 2/16 = 0.125 & 0.125 \times 16 = 2 = 2 \text{ (MSD)} \end{array}$$

The hexadecimal number is 28A

38. What is Information age?

Computer left its own impression in the modern civilization, this is called information age.

39. Define Accuracy

It is defined as degree of it's measured or calculated quantity to its actual or true value.

40. Describe about versatility

Computers are versatile in nature. It can perform multiple tasks simultaneously.

Part B (16 Mark Questions)

1. Explain the characteristics of the computer
2. Give a brief notes about evolution of the computer
3. Compare the advantages of various generation of computers
4. Compare the disadvantage of various generation of computers
5. What are all the classification of computer and explain in brief.
6. Where the computers are being used? Describe it.
7. Explain the basic computer organization
8. Give a brief notes about the CPU & it's working principles
9. List the input devices and explain it
10. Name some of the output devices and give brief notes about it.
11. Explain the memory management in computer
12. Conversion
 - (i) 1001111_2 to octal
 - (ii) 1101111_2 to hexadecimal
 - (iii) 120_8 to binary
 - (iv) 227_8 to hexadecimal

- (v) 78_{16} to binary (vi) AB_{16} to octal
13. Convert the decimal number system to required number system
(i) 850_{10} to binary (ii) 1050_{10} to octal (iii) 1020_{10} to hexadecimal (iv) 4550_{10} to octal system
14. Convert a number from any system to decimal system
(i) 100_2 (ii) 1234_8 (iii) 113_{16}
15. Convert a number from one system to other system
(i) $(12.25)_{10}$ to binary (ii) $(130.25)_{10}$ to octal (iii) $(225.25)_{10}$ to hexadecimal (iv) $(6.50)_8$ to binary