2024

FUNDAMENTALS OF COMPUTER — GENERAL

Paper : DSE-5.1eBG

Full Marks : 80

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group - A

1. Describe the primary functions of ROM within a computer system. 5

2. How does disk fragmentation impact the performance of magnetic disks? 5

   Or,

   Explain the working principle of optical storage devices. 5

Group - B

3. Compare and contrast Hard Disk Drives (HDD) and Solid-State Drives (SSD). 3+3

   Or,

   What are ribbon cables and how are they used inside computer systems? 2+4

4. Differentiate between a mainframe computer and a supercomputer, focusing on their uses and capabilities. 6

   Or,

   List the five generations of computers, highlighting the key technology of each. 6

5. List and briefly describe the types of registers found in a typical CPU. Provide examples of each. 6

6. Describe the components of a System Bus (Address Bus, Data Bus, Control Bus). Provide examples of the information each carries. 2×3

7. Name and explain two examples of pointing devices. Describe the function of a scanner in computing systems. 3+3

   Or,

   What role does a printer play in output? Mention different types of printers. 2+4

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8. List three major functions of an operating system. 2×3

Or,

Differentiate between system software and application software. 6

9. What is a flowchart and what are its main components? 2+4

Or,

Draw a flowchart shows different stages of loan repayment with interest accumulation. Calculate the total repayment amount over a set period. 6

10. A company accepts product returns based on purchase data and condition of the product. Prepare a limited entry decision table from the following table : 6

Return Period (Days)	Product Condition	Return Status
<= 30	Any	Accepted
> 30	Unused	Accepted
> 30	Used	Rejected

11. What do you mean by topology? Briefly discuss the different types of typologies. 6

Group - C

12. (a) What is the difference between analog and digital transmission?

(b) Describe the working principle of half-duplex communication with an example. 4+4

13. What are the functions of the Transport layer in both OSI and TCP/IP models? 4+4

Or,

(a) What are the characteristics of a Wide Area Network (WAN)?

(b) Define a Storage Area Network (SAN) and explain its purpose in data storage. 4+4
