

IMPORTANT QUESTIONS FOR TERM END EXAM by
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Question 1. Perform the following :

- a) Convert decimal 49.25 to binary and hexadecimal.
- b) Convert the following binary to decimal and hexadecimal :

1100.1101

1010111.01

Question 2. Add (-125) and (- 105) in 8-bit register using signed 2's complement representation of negative numbers. Also indicate overflow, if any.

Question 3. Simplify the boolean function

$F = \Sigma (0, 2, 4, 6, 8, 10)$ using a K-map and draw the logic diagram.

Question 4. Discuss the use of normalization and biased exponent for floating point representation using a suitable example.

Question 5. Write the characteristic table and excitation tables for the following :

JK Flip-flop

D Flip-flop

Question 6. Consider a computer having 256 word RAM and cache of 16 blocks (block size = 4 words). Where is a memory word location 120 mapped in cache, if

- direct mapping is used ?
- 2-way set associative mapping is used ?

Question 7. What is a RAID ? Explain various techniques used in a RAID to enhance reliability.

Question 8. Discuss various elements of an instruction.

Question 9. What is a micro-operation ? List the sequence of micro-operations in an instruction fetch.

Question 10. Explain the DMA technique for I/O operation.

Question 11. Explain the working of a microprogrammed control unit with the help of a diagram.

Question 12. Write a step-by-step process to explain how an interrupt is handled by a computer.

Question 13. What is the use of a large register file of RISC architecture ? Explain with the help of an example/diagram.

Question 14. Write an assembly language program to find the smallest number in a byte array of size 10 which is stored at location ARRAY. Make suitable assumptions.

Question 15. Discuss the flag register for the 8086 microprocessor.

Question 16. Explain the use of different segments in 8086 assembly language programming.

Question 17. Explain the register addressing mode and indirect addressing mode in the 8086 microprocessor.

Question 18. Differentiate between the following :

- a) SRAM and DRAM
- b) Hard disk and Magnetic tape storage
- c) Hardware and Software interrupts
- d) Program Counter (PC) and Code Segment Register
- e) PUSH and PUSHF instructions
- f) AAA and DAA instructions