

BIM / Third Semester / IT 217: Computer Organization

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions:

[10 × 1 = 10]

1. What are the methods of representing negative integers? Give examples.
2. What is the value of register A after performing arithmetic shift right if A=11101010?
3. How handshaking is different than strobe?
4. What is associative memory?
5. Write microinstruction format of basic computer.
6. How daisy chaining assigns priority?
7. Define locality of reference.
8. Differentiate between address space and memory space.
9. Define cache coherence.
10. Why interrupt initiated I/O is better than programmed I/O?

Group "B"

Exercise Problems:

[5 × 4 = 20]

11. Show the step by step multiplication using Booth algorithm if (+12) is multiplied by (-9).
12. How does a basic computer execute instruction? Describe with flowchart.
13. Write a program to multiply two positive numbers by a repeated addition method and explain each statement.
14. An instruction is stored at memory location 400 with its address field at location 401. The address field has value 500. A processor register R1 contains the number 250. Evaluate the effective address if the addressing mode of the instruction is:
(a) Direct (b) Immediate (c) Register indirect (d) Index with R₁ as index register
15. What is the purpose of memory hierarchy? Given a cache memory with access time 2ns and RAM with 10ns, if cache hit ratio is 80%. Find the average memory access time.

Group "C"

Comprehensive Answer Questions:

[2 × 5 = 10]

16. Define microprogrammed control unit. Explain any three interconnection structures for a multiprocessor.
17. How pipelining result in better performance of the system? Identify and explain different pipeline hazards with examples.

