

BT-4/J08**8626****Computer Architecture and Organization****Paper : CSE-202-E**

Time : Three Hours]

[Maximum Marks : 100

Note :- Attempt any FIVE questions, selecting at least ONE question from each unit.

UNIT-I

1. (a) Explain Von-Neuman model of computer. 6
- (b) Explain multilevel viewpoint of machine. 6
- (c) What is MIPS ? How it is used to measure the performance of a computer ? 8
2. (a) An instruction is stored at location 300 with its address field at location 301. The address field has the value 400. A processor register R1 contains the number 200. Evaluate the effective address if the addressing mode of the instruction is :
 - (i) Direct
 - (ii) Immediate
 - (iii) Relative
 - (iv) Register indirect
 - (v) Index with R1 as the index register 10
- (b) Compare and contrast RISC and CISC. 10

UNIT-II

3. (a) What are various techniques of microinstruction sequencing ? Explain. 10
- (b) Discuss the various instruction set formats. 10
4. (a) Differentiate Hardwired and microprogrammed control unit. 10
- (b) Explain in detail General Register Organized CPU. 10

UNIT-III

5. (a) Why we need memory hierarchy ? 5
- (b) What is Virtual Memory ? How address mapping takes place in virtual memory ? 8
- (c) Explain working of a Cache Memory. Why we need cache initialization ? 7
6. (a) What is content addressable memory ? Explain the match logic in CAM. 10
- (b) Differentiate Static and Dynamic memories. 10

UNIT-IV

7. (a) Evaluate the expression $X = (A + B) * (C - D)$ using
 - (i) Three address instruction
 - (ii) Two address instruction
 - (iii) One address instruction
 - (iv) Zero address instruction. 8
- (b) Discuss Priority interrupts. Explain different methods for establishing priorities in detail. 12
8. Write short notes on :
 - (a) DMA
 - (b) Superscalar Processing
 - (c) Instruction Cycle
 - (d) Parallelism. 20