

Roll No. ....

Total Pages : 2

**BT-5/D-22**

**45201**

**COMPUTER ORGANIZATION AND ARCHITECTURE**

**Paper : PC-IT-305-A**

**Time : Three Hours]**

**[Maximum Marks : 75**

**Note :** Attempt *five* questions in all, selecting atleast *one* question from each unit. All questions carry equal marks.

**UNIT-I**

1. (a) What is Von-Neumann model of machine? Explain along with Flynn's classification of computers. (7.5)  
(b) Explain various functions of an operating system in detail. (7.5)
2. (a) Discuss the various types of instruction available in a typical computer. (7.5)  
(b) Explain any three peripheral devices used for I/O purpose in computers. (7.5)

**UNIT-II**

3. (a) What do you mean by register transfer? Explain basic symbols of register transfer using suitable examples. (5)  
(b) Explain the working and design of a 4-bit arithmetic circuit. Also draw the table for the circuit. (10)

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448 [P.T.O.]

4. (a) What is microprogram sequencer? Explain its working in detail. (7.5)  
(b) Explain the difference between hardwired control and microprogrammed control. Is it possible to have a hardwired control associated with a control memory? (7.5)

### UNIT-III

5. What is an instruction format? Explain various types of CPU organization. Write an assembly program using three-address instructions, two-address instructions, one-address instructions, zero-address instructions and RISC instructions. (15)
6. (a) Explain any five types of addressing modes using suitable examples. (7.5)  
(b) Write a short note on program interrupt. (7.5)

### UNIT-IV

7. (a) What is cache coherence? How the problem of cache coherence can be solved? (7.5)  
(b) What is DMA? Explain its working in brief. (7.5)
8. (a) What is an IOP? Explain its working. (7.5)  
(b) Discuss the memory hierarchy in detail. (7.5)
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