Roll No. ..... Total Pages : 02

BT-5/D-23 45277

COMPUTER ARCHITECTURE

ES-CS-AIML-309A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Explain Digital arithmetic operations using Booth's algorithm for multiplication and division. 15

2. Draw a neat block diagram of memory hierarchy in a computer system. Compare the parameters size, speed and cost per bit in hierarchy. 15

Unit II

3. What is Program interrupt ? Discuss about the way the interrupt is handled by the Computer by describing the interrupt cycle by mean of flowchart. 15

4. What is Instruction cycle ? Discuss about memory reference instructions and register reference instructions. 15

Unit III

5. (a) What are the characteristics of CISC architecture ? How is it different from RISC characteristics ? **8**

   (b) Differentiate between general register organization and stack based organization. **7**

6. What do you mean by addressing modes ? How are the operands chosen during program execution based on the addressing modes of the instruction ? Explain with example. **15**

Unit IV

7. (a) What are handshaking signals ? Explain the handshake control of data transfer during input and output operation. **8**

   (b) Explain short note on DMA controller and transfer. **7**

8. What is the difference between isolated I/O and Memory-mapped I/O ? What are the advantages and disadvantages of each ? **15**