

# FACULTY OF ENGINEERING

## B.E. 2/4 (CSE) I Semester Suppl. Examination

May/June - 2008

### Subject : Computer Organization & Architectures

Time : 3 hours ]

[Max. Marks : 75

[Note : Answer **all** questions of Part-A

Answer **five** questions from Part-B.

#### PART - A (25 marks)

1. The following transfer statements specify a memory. Explain the memory operation in each case : 3
  - (a)  $R2 \leftarrow M[AR]$
  - (b)  $M [AR] \leftarrow R3$
  - (c)  $R5 \leftarrow M [R5]$
2. What logic microoperations can be performed with two variables ? 3
3. Differentiate between 'Direct Address' and 'Indirect Address'. 2
4. What are the various phases of each Instruction cycle ? 2
5. What is the advantage of microprogrammed control ? 3
6. Differentiate between External Interrupts and Internal Interrupts. 2
7. What do you understand by 'Memory Interleaving' ? 3
8. What is the advantage of 'Block Transfer'? 2
9. How is the full duplex transmission system different from half duplex transmission ? 2
10. Where is the 'Translation Look Aside Buffer" used ? 3

**PART - B** (5×10=50 marks)

11. (a) Draw the 4-bit Adder-subtractor circuit using full-adders and exclusive OR gates. 5
- (b) Draw the flow-chart for Interrupt cycle and explain. 5
12. (a) What is a “microprogram sequencer” ? Draw the block diagram and explain. 6
- (b) Briefly explain about RISC architecture with it’s characteristics. 4
13. (a) What is pipelining ? Explain with the help of space time diagram, how speed up is achieved. 5
- (b) Draw the diagram of BCD adder and briefly explain it’s operation with suitable example. 5
14. (a) Explain how the Asynchronous Serial Transfer of data takes place between two units. 6
- (b) Explain briefly about IBM 370 I/o channel. 4
15. (a) Give the block diagram and function table of a typical RAM chip. 5
- (b) How does the Set Associative mapping of Cache organization overcome the disadvantages of the direct mapping scheme ? 5
16. (a) What are shift Microoperations ? Explain—logical shift, circular shift, Arithmetic shifts. 6
- (b) With examples explain— Register Indirect addressing mode and Relative addressing mode. 4
17. Write short notes on any **two** : 5×2=10
- (a) Registers for Basic computer
- (b) Instruction Pipelining
- (c) Daisy chaining priority.