

COMPUTER ARCHITECTURE

(Common for
Computer & IT)

Time : 3 Hours Min. Passing Marks : 25 Maximum Marks : 80

Instruction to Candidates :

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit-I

OR

- (a) Explain Flynn classification of computer architecture based on streams. [8]
- (b) Write 3 different types of shift micro-operations in Register Transfer Language. [8]
- (a) Divide 0100100001 by 11001 using restoring division algorithms. Show the steps. [8]
- (b) How will you subtract 2 floating point numbers? Explain with an example. [8]

OR

Unit-IV

- (a) Explain bus transfer micro operation. Write it in Register Transfer Language. [8]
- (b) Explain the concept of Von-Neuman Architecture. [8]
- Design a 16 by 4 RAM Explain binary cell also. [16]

OR

- Unit-II
- (a) Design a 4 bit ALU. [8]
- (b) Draw reservation table for 10 instructions. Also explain the instruction pipeline stages. [8]
- Write short notes on any two :
 - Associative memory
 - Segmentation
 - LRU page replacement policy. [8×2=16]

Unit-V

- Unit-III
- (a) Explain speedup, efficiency and throughput in pipelining. [8]
- (b) Is there any difference in RISC & CISC architecture? Explain. [8]
- (a) What are the various modes of data transfer to and from the computers system? Explain [8]
- (b) Explain the I/O interface for a pen drive. [8]

OR

- Unit-III
- (a) Multiply 10101 & 11011 using Booth multiplier algorithm. Show the steps. [8]
- (b) Describe the working of Carry Save Adder. [8]
- Write short notes on any two :
 - Input Output Processor
 - DMA
 - Priority Intercept. [8×2=16]