COMPUTER ARCHITECTURE-I

Time Allowed : 3 Hours *Maximum Marks : 80*

Note : Attempt five questions in all, selecting ***one*** question from each unit in addition to compulsory **Question No. 1**. All questions carry equal marks.

Compulsory Question

1. Describe :
   (a) Paper tape
   (b) Flat-panel display
   (c) Polling
   (d) Stack based CPU
   (e) Register transfer language
   (f) Burst mode in DMAC
   (g) Instruction Register
   (h) Status Flags. 8×2=16

UNIT-I

2. Describe :
   (a) Tracker Ball
   (b) OMR

(c) Touch Screen

(d) Inkjet Printer 4×4=16

3. (a) Explain the working of DMA.

(b) Discuss various ways of connecting devices on the wire bus. 2×8=16

UNIT-II

4. How a floating pt. no. is represented in a computer? Represent $(6.5)_{10}$ in a 32-bit location having 24-bits for mantissa and 8-bits for exponent. 16

5. Explain the use of shift operations and explain shift counter. 16

UNIT-III

6. (a) Describe various memory mapping techniques.

(b) Explain various problems related to management of memory hierarchy. 2×8=16

7. (a) Explain the concept of paging and discuss two page replacement methods.

(b) Discuss Cache memory, schemes for Cache organisation and multilevel Cache. 2×8=16

UNIT-IV

8. (a) Explain various types of addressing modes.

(b) Explain variious registeres in a CPU. 2×8=16

9. (a) Explain Stack operations with suitable examples.

(b) Differentiate between vertical and horizontal microprogramming. 2×8=16