

Roll No.

Subject Code—651-X

P.G.D.C.A. EXAMINATION

(Second Semester)

(Re-appear)

MS-07

**COMPUTER ORGANISATION
AND ARCHITECTURE**

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. A digital computer has a common bus system for 12 registers of 9 bits each. The bus is constructed with multiplexers.

How many selection inputs are there in each multiplexer ?

What size of multiplexers are needed ?

How many multiplexers are there in the bus ?

Draw a diagram of the bus system using three-state buffers and a decoder instead of multiplexers. 20

2. Explain instruction cycle with the help of flowchart. 20

3. Write a program to evaluate the arithmetic statement :

Using a general register computer with three address instructions.

Using an accumulator type computer with two address instructions.

Using an accumulator type computer with one address instructions.

Using a stack organized computer with zero address instructions. 20

4. Explain the difference between :

(i) Hardwired control and Micro Programmed Control

(ii) RISC and CISC. 20

5. Explain the Input-Output Processor. How does input-output processor communicate with CPU ? 20

6. What is the Cache coherence problem ? What are the Cache inconsistencies resulting from it ? Give a solution to this problem. 20

7. (a) Discuss about an interrupt driven transfer and a DMA transfer clearly bringing out the advantages and disadvantages of each technique. 10

- (b) Explain mode of transfer of data to and from peripherals. 10

8. Write short notes on the following :

(a) Transaction Processing Benchmarks

(b) Interleaving

(c) SPEC-MARKS

(d) Addressing Modes. 20