E-JUN 2006 2108

Subject Code—4255

P.G.D.C.A. EXAMINATION

(Second Semester)

MS-07

COMPUTER ORGANIZATION AND ARCHITECTURE

Time : 3 Hours *Maximum Marks : 100*

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

1. Define Micro-operation. State and explain all arithmetic, logic and shift micro-operations. Draw the circuit diagram for 4 bit arithmetic circuit and explain it. Also draw the circuit diagram for one stage of arithmetic logic shift unit.

P.T.O.

2. (a) Draw the diagram for common bus system of basic computer and explain the operations of different registers attached to it. 10

   (b) Draw the flow chart for instruction cycle and explain it. 10

3. (a) Differentiate between microprogrammed and hardwired control units. Also explain the function of microprogram sequencer. 12

   (b) List and explain various characteristics of RISC and CISC machines. 8

4. (a) State and explain various types of addressing modes with the help of suitable examples. 12

   (b) Differentiate between general register organization and stack organization of CPU. 8

5. (a) What is Pipelining ? Explain instruction pipelining in detail. 10

   (b) Write a short note on Superscalar Processor. 10

6. Define Cache Memory. Discuss the significance of hit ratio. State and explain the three different types of mapping procedures when considering the organization of cache memory. 20

7. State the three possible modes of data transfer and explain them in detail including priority interrupt, DMA controller etc. 20

8. Write short notes on the following :

   (a) Virtual Memory 7

   (b) SPEC Marks 6

   (c) Storage Technologies. 7