TED (10—)08

(REVISION—2010)

Reg. No. .....

Signature .....

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—OCTOBER, 2011

COMPUTER ARCHITECTURE

(Common for IF, CM, CT)

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART—A

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Write the need for assembler.
2. State the function of a bus.
3. List the two modes of DMA transfer.
4. Give the definition of memory cycle time.
5. Define control word. (5x2=10)

PART—B

II Answer any *five* questions. Each question carries 6 marks.

1. Write notes on instruction sequencing.
2. Differentiate between memory mapped I/O and I/O mapped I/O.
3. Illustrate the operation of Universal serial bus.
4. Discuss the working of magnetic tapes.
5. Illustrate the implementation of SRAM.
6. Draw the single bus and three bus organization of datapath.
7. Write the control sequence for branch-on-zero instruction. (5x6=30)

PART—C

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT – I

III With the neat sketch of processor-memory connection, explain the basic operational concepts of a computer system. 15

Marks

UNIT – II

V (a) Illustrate the direct data transfer between memory and peripherals. 7

(b) Write short notes on : (i) Parallel port (ii) Asynchronous bus. 8

OR

VI (a) Explain the device identification and multiple requests handling method of interrupt driven I/O. 8

(b) Describe the sequence of events of data transfer in SCSI. 7

UNIT – III

VII (a) Describe asynchronous and synchronous DRAM. 10

(b) Write notes on Rambus memory. 5

OR

VIII (a) With a neat sketch, explain the organization of virtual memory. 10

(b) Discuss the different types of ROM's. 5

UNIT – IV

IX (a) With necessary diagrams, explain the organization of hardwired control unit. 8

(b) Illustrate the connection of MDR with memory bus and system bus. 4

(c) Write the control sequence for storing a word from register R2 to memory location pointed by R1. 3

OR

X (a) Explain micro programmed control unit. List the advantages and disadvantages. 9

(b) Discuss the basic concepts of pipelining. 6