

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

COMPUTER ARCHITECTURE

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. State the use of program counter register.
2. Write the function of interrupt vector.
3. State the method of differential signaling in rambus memory.
4. Write the use of static memory.
5. Define control word.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Write notes on straight line sequencing.
2. Give a brief description of pipelining and super scalar operations.
3. Differentiate between memory mapped I/O and peripheral map I/O.
4. Explain the working of interrupt-service routine.
5. Write notes on : (a) EPROM (b) flash memory
6. Explain micro instructions.
7. Draw the architecture of Three Bus Organization.

(5×6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

III Explain the different factors that affect the performance of a computer system. 15

OR

IV With a diagram explain functional units of a computer system. 15

UNIT — II

V (a) Explain multiple request handling method of interrupt driven I/O. 7

(b) Write short notes on : (i) parallel port (ii) asynchronous bus. 8

OR

VI Write notes on : (i) PCI (ii) SCSI (iii) USB 15

UNIT — III

VII With a diagram describe the organization of bit cell in memory. 15

OR

VIII Explain virtual memory and describe its working. 15

UNIT — IV

IX (a) With diagram explain the organization of hardwired control unit. Also write its advantages and disadvantages. 8

(b) Write the control sequence instructions for storing a word from register R1 to memory location pointed by R2. 7

OR

X (a) Explain the role of cache memory in pipelining. 3

(b) Explain the organization of micro programmed control unit with necessary block diagram. 12