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Reg.No............................

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL-2022

COMPUTER ARCHITECTURE

[Maximum marks: 100]   (Time: 3 Hours)

PART – A
Maximum marks : 10

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

1. Define computer architecture.

2. List the four functions of the computer.

3. Write the expansions of (a) RAID (b) CD (c)DVD (d) HD

4. List the operations of a processor.

5. In one or two sentences write about the micro operations.   (5 x 2 = 10)

PART – B
Maximum marks : 30

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

1. List the four structural components of the computer and explain each.

2. Write about the three functional group of data lines of the computer with sketch.

3. Define a cell in the semiconductor memory and with a neat diagram explain its

   operations. Also write the properties shared by the memory cells.

4. What are the benefits of using glass substrate in a hard disk over the aluminium substrate.

5. Explain the functions of I/O module and also draw the general structure of the module.

6. Write the micro operations performed in the Fetch, Indirect and Interrupt cycles.

7. With a neat block diagram explain the control unit . Also write about the three step

   process which leads to the characterization of the control unit.   (5 x 6= 30)

PART – C

Maximum marks : 60

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

UNIT –I

III. (a) Write about the three key components of the Von Neumam architecture. (7)

   (b) Compare DRAM and SRAM. (8)

OR

IV.(a) Write about the characteristics of the memory system. (8)

  (b) Explain the key characteristics of the cache design. (7)

UNIT-II

V. (a) Write about the physical characteristics of the hard disk. (7)

  (b) With the neat diagram explain the read and write mechanism in the hard disk. (8)

OR

VI. (a) Draw the format of a sector in an optical disk and explain each field. (8)

  (b) Compare various raid levels. (7)

UNIT-III

VII. (a) Name the generally available visible registers of the microprocessor and write the purpose of each register. (8)

  (b) Explain the instruction cycle in detail. (7)

OR

VIII. Write in detail about the instruction pipe lining. (15)

UNIT-IV

IX. Write about the Hardware control unit and micro programmed control unit. (15)

OR

X. Explain in detail Flynn's classification of multiple processor organization with neat diagram. (15)

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