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BOARD DIPLOMA EXAMINATION, (C-20)

NOVEMBER/DECEMBER—2022

DCME – FOURTH SEMESTER EXAMINATION

COMPUTER ORGANIZATION AND MICROPROCESSORS

Time : 3 hours] [*Total Marks* : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define stored program concept.

2. What is the purpose of MAR?

3. Write about two address instruction and give an example.

4. What is floating point representation? Give an example.

5. Write the principle of locality of reference.

6. Write the need for memory hierarchy in a computer.

7. List any five peripheral devices.

8. What is the need for an interface?

9. List the basic functional units inside 8086 microprocessor.

10. Write the uses of MN/$\overline{\text{MX}}$ and M/$\overline{\text{IO}}$ pins of 8086 processor.

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. *(a)* Draw the block diagram of accumulator based CPU and explain the functions of each unit.

(OR)

(b) Define the following terms :

(i) Instruction cycle

(ii) Fetch cycle

(iii) Execute cycle

12. *(a)* Explain floating point division operation with flow chart.

(OR)

(b) Explain implied, register, register indirect, relative addressing modes.

13. *(a)* Explain cache memory organization.

(OR)

(b) Explain about virtual memory organization.

* **14.** *(a)* Explain about Bus system.

(OR)

(b) Explain synchronous and asynchronous mode of data transfer.

15. *(a)* Draw and explain functional block diagram of Intel Pentium processor.

(OR)

(b) Write the features of 80286 and 80386 processors.

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. "Associative memory is faster than other memories". Justify the above statement.

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