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C20-CM–403

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BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

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 macro-operation.

2. What is the purpose of instruction register?

3. Draw the flowchart for the fixed point multiplication.

4. Represent –127 and –128 using signed 1's compliment representation.

5. Compare main and auxiliary memory in any four aspects.

6. What is the principle of locality of reference?

7. What is the need for an interface?

8. Define bus system.

9. Define microprocessor and give one example.

10. What is stack segment register?

PART—B

8×5=40

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

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

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

11. *(a)* Explain the block diagram of simple accumulator based CPU.

(OR)

(b) Explain the purpose of the following :

(i) Accumulator register

(ii) Memory buffer register

12. *(a)* Explain the different types of instructions with examples.

(OR)

(b) Explain the fixed point addition and subtraction operations with flowchart.

13. *(a)* Explain the principle of virtual memory organization.

(OR)

(b) Explain the cache memory organization.

14. *(a)* Explain DMA controlled transfer.

(OR)

(b) Explain the different modes of data transfer.

15. *(a)* Explain the PIN diagram of 8086 microprocessor.

(OR)

(b) Explain the functional block diagram of Intel Pentium processor.

PART—C

10×1=10

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. List the features of 8086, 80286, 80386 and 80486 processors.

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