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C20-CM–403

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BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2024

DCM – 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. What is macro operation?

2. What is the purpose of program counter?

3. What are the basic types of information representation?

4. Distinguish between fixed point and floating point representation.

5. Define auxiliary memory.

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

7. Define interface.

8. List various bus systems.

9. Define microprocessor and write its importance.

10. Write the functions of ALE and MN/$\overline{\textbf{MX}}$ pins of 8086 processor.

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 about instruction cycle, fetch cycle and execution cycle.

(OR)

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

12. *(a)* List and explain any four addressing modes.

(OR)

(b) Explain floating point multiplication operation using Booth's algorithm.

13. *(a)* Define the following terms :

(i) Access rate

(ii) Access time

(iii) Cycle time

(OR)

(b) Explain the principle of virtual memory organization.

14. *(a)* Explain synchronous and asynchronous data transfer.

(OR)

(b) Explain programmed I/O method of data transfer.

15. *(a)* Distinguish between 8086 and 80286 processors.

(OR)

(b) Draw the functional block diagram of 8086 and explain each unit.

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. What is cached data in cache memory? How does it work? Is cached data important? Should you keep it (or) clear it? Justify your answer.

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