D 120767 **(Pages : 2)** **Name.....**

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2025

Common Course for L.R.P. (Language Reduced Pattern)

A14—MICROPROCESSORS – ARCHITECTURE AND PROGRAMMING

(2019—2023 Admissions)

Time : Two Hours and a Half Maximum : 80 Marks

Section A

Answer the following questions (1-15).
Each question carries 2 *marks.*

1. What is the function of the instruction register in 8085 ?
2. Define memory mapping.
3. What does the Zero flag indicate in 8085 microprocessor ? Explain.
4. What is the function of the RESET IN and RESET OUT pins ?
5. What is the difference between ADD and ADC instructions ?
6. Write a program to increment the value in register A.
7. What is a T-state ? How many T-states does a typical memory read operation take in 8085 ?
8. What does the RRC instruction do ? Explain with an example.
9. How does indexing (using pointers) help in array processing ?
10. What is the function of PUSH and POP instructions ?
11. What is Subroutine ?
12. What is the difference between 8086 and 8088 microprocessors ?
13. What is the purpose of the Instruction Pointer (IP) ?
14. Why is segmentation used in 8086 microprocessors ?
15. What are the status flags in the 8086 microprocessor ?

(Ceiling : 25 marks)

Turn over

Section B

Answer the following questions (16 - 23).
Each question carries 5 *marks.*

16. Explain the memory classification in computer system.
17. Explain the special purpose registers of 8085.
18. Explain memory read cycle.
19. Explain I/O mapped I/O and memory mapped I/O.
20. Write an 8085 assembly language program to generate a time delay of 1ms using nested loop.
21. Draw the block diagram of 8237 and explain each block.
22. Explain any *two* addressing modes in 8086 with examples.
23. Describe how a physical address is calculated in 8086 using segment and offset values. Give examples.

(Ceiling : 35 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain the bus organization in 8085 in detail.
25. Explain the data transfer instructions in 8085.
26. Draw the block diagram of 8254 and explain the modes of operation.
27. Draw and explain the internal architecture of 8086.

(2 × 10 = 20 marks)