H Roll No. 2294038

TCS–403

B. TECH. (CSE)
(FOURTH SEMESTER)
MID SEMESTER
EXAMINATION, March, 2024

MICROPROCESSORS

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) Draw and explain the block diagram of a digital computer. Why address bus is unidirectional while the data bus is bidirectional ? (CO1)

OR

(b) Write an 8085 programe to add 10 bytes stored in contiguous memory locations starting with address 2000H. Store the result at some memory location. (CO1)

P. T. O.

2. (a) Assume accumulator A = FF H and register B = E9H. Determine the accumulator contents and status of all 8085 flags when instruction ADD B is executed. (CO1)

OR

(b) Discuss the following pins of 8085 :(CO1)

(i) ALE

(ii) TRAP

(iii) AD0-AD7

(iv) SOD

(v) IO/M'

3. (a) Draw and explain the internal architecture of microprocessor 8085. (CO1,2)

OR

(b) Ten bytes are stored in memory locations starting at address 3000H. Write an 8085 assembly language programme to move this memory block to new memory location starting at address 4000H. (CO1,2)

4. (a) Explain in detail, the concept of Interrupts of 8085 microprocessor. Why is TRAP called a non-maskable interrupt ? (CO2)

OR

(b) Explain Instruction Cycle, Machine Cycle and T state. Determine the total T-states required to execute the instruction MVI A, 07H. (CO2)

5. (a) (i) Explain the various rotate instructions in 8085.

(ii) Assume accumulator contains the data 43H. Determine the contents of accumulator after execution of four successive RRC instruction. (CO2)

OR

(b) Draw the timing diagrams for opcode fetch cycle assuming that opcode 7A is present at memory location 3005H. (CO2)