(c) What is the difference between the synchronous and asynchronous serial communication ? Explain the function of the following pins of 8251 USART :(CO4)

(i) C/D'

(ii) R × D

(iii) T × EMPTY

5. (a) Draw and discuss the internal architecture of 8254 PIT. (CO5)

(b) Explain the control word format and various modes of 8254 PIT. (CO5)

(c) Explain the working of ADC 0808. Show its interfacing with the microprocessor. (CO5)

H Roll No. .....

TCS–403

B. TECH. (CSE)
(FOURTH SEMESTER)
END SEMESTER EXAMINATION,
June/July, 2022

MICROPROCESSORS

Time : Three Hours

Maximum Marks : 100

Note : (i) All questions are compulsory.

(ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.

(iii) Total marks in each main question are **twenty**.

(iv) Each sub-question carries 10 marks.

1. (a) Discuss the following registers of 8085 microprocessor : (CO1)

(i) Program counter

(ii) Stack pointer

(iii) Accumulator

(iv) Instruction register

P. T. O.

(b) Explain the function of the following pins of 8085 : (CO1)

(i) ALE

(ii) TRAP

(iii) IO/M

(iv) READY

(c) Interface a 4 KB RAM with 8085 such that the starting address is 8000H. What will be the last address of this RAM ? (CO1)

2. (a) What is the difference between direct and register indirect addressing mode of 8085 ? Write instructions to save the contents of accumulator at memory address 2500 H using : (CO2)

(i) Direct addressing mode

(ii) Register indirect addressing mode

(b) What do you mean by the machine cycle and T-state ? Draw a neat timing diagram for instruction MVI A, 45H. (CO2)

(c) Write an 8085 assembly language program to add two 16 bit numbers stored at memory locations 3000H and 3002H. (CO2)

3. (a) Draw and discuss the internal architecture of 8086 microprocessor. (CO3)

(b) Discuss the concept of memory segmentation in 8086. How it generates the 20 bit physical address ? (CO3)

(c) Discuss various addressing modes of 8086 with examples. (CO3)

4. (a) Discuss the modes of 8255 PPI. Explain the 8255 control word format for I/O mode. (CO4)

(b) Draw and explain the internal architecture of 8259 PIC. (CO4)