(Pages : 3) **N – 5883**

Reg. No. .....

Name : .....

Sixth Semester B.Tech. Degree Examination, April 2022

13.603 MICROPROCESSORS AND APPLICATIONS (E)

(2013 Scheme)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. Each question carries **4** marks.

1. Write note on CALL and RETURN Instructions.
2. How flag register is organized in 8085?
3. Distinguish between synchronous and asynchronous data transfer.
4. Explain any two control signals in 8086.
5. How many flags are there in 80386? Which are the additional flags incorporated in it as compared to 8086?

(5 × 4 = 20 Marks)

PART – B

Answer **one** full question from each module. Each question carries **20** marks.

Module I

6. (a) Draw and explain the architecture of 8085. **10**

   (b) Explain the function of subroutine with relevant example. What are the instructions used for executing a subroutine? **10**

OR

P.T.O.

7. (a) Explain the function of following pins of 8085 **10**

(i) $AD_0 - AD_7$

(ii) READY

(iii) Trap

(iv) HOLD & HLDA

(v) INTR

(b) Assume the contents of accumulator as 81 FI and carry flag as 00H. Illustrate the accumulator content after RRC and RAP instructions. **6**

(c) Explain the function of following registers in 8085

(i) Stack pointer **4**

(ii) Program counter.

Module II

8. (a) Design memory system to interface 2K ROM and 4K RAM using 2K × 8 bit memory chips. **10**

(b) Explain the interrupt structure of 8085. **10**

OR

9. (a) What is meant by machine cycle? **5**

(b) Explain RIM instruction **5**

(c) Draw and explain the timing diagram of instruction LDA 2000H. **10**

Module III

10. Explain minimum and maximum mode configuration in 8086 with diagram. **20**

OR

11. (a) Describe various addressing modes available in 8086 with example **12**

(b) Explain the functions of the following in 8086: **8**

(i) flag register

(ii) Instruction pointer

(iii) Index Register

(iv) Segment Register

Module IV

12. Explain the block diagram, modes of operation and control word structure of peripheral chip 8255. **20**

OR

13. (a) How can a DAC be interfaced to 8085? **10**

(b) Explain the paging mechanism of 80386 **10**