

4. Write an assembly language program a) To find the square root of a number b) To arrange ten numbers in descending order. $7 \times 2 = 14$

UNIT-III

5. What is EU in 8086? Discuss about all the registers of EU. $2 + 12 = 14$
6. Write the function of DF, IF and TF bits in 8086? Write the different memory segments used in the 8086 and their functions. $6 + 8 = 14$

UNIT-IV

7. Describe briefly about the internal memory organization of 8051 microcontroller. Discuss about timers and interrupts of 8051. $7 + 7 = 14$
8. Sketch the architecture of 8051 microcontroller. Discuss about all the flags of 8051 microcontroller. $4 + 10 = 14$

UNIT-V

9. a) What is control word? Discuss the control word format of 8255 in I/O and BSR modes. 4
- b) How many 8Kx4 RAM ICs are needed to construct a 32Kx8 RAM IC? The memory address of the last location of a 1 KB memory chip is FBFFH. What is the address of the first location? $2 + 8 = 10$
10. What is a 74LS138 decoder? Write its truth table. Interface two 8K x8 RAM chips and a 8Kx 8 EPROM chip with 8085, using a 74LS138 decoder, such that the starting addresses assigned to them are 6000H, 8000H and 0000H, respectively. $2 + 2 + 10 = 14$

2025/EVEN/12/33/ECE-405(A)/077

B.Tech Even Semester Examination, May, 2025**Electronics & Communication Engineering**

(4th Semester)

Course No: ECE-405*(Microprocessors & Microcontrollers)**Full Marks: 70**Pass Marks: 28**Time: 3 hours***Note:**

1. Attempt any five questions taking one from each unit.
2. Begin each answer in a new page
3. Answer parts of a question at a place
4. Assume reasonable data wherever required
5. The figure in the right margin indicates full marks for the question
6. All the mathematical symbols and abbreviations have their usual meanings.

UNIT-I

1. a) "Microprocessor is a programmable logical device"- explain with example.
- b) What are subroutines? Explain the process of subroutine execution in a program. $7 + 7 = 14$
2. What do you mean by general purpose and special purpose registers of 8085? Discuss about all the general purpose and special purpose registers. $4 + 10 = 14$

UNIT-II

3. What are conditional and unconditional instructions? Write the the differences between conditional and unconditional jump instructions with an assembly language program $4 + 10 = 14$

Turn Over