Code: 19EE3602

III B.Tech - II Semester – Regular Examinations – JUNE 2022

MICROPROCESSORS & MICROCONTROLLERS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours   Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
   2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
   3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
   4. All parts of Question paper must be answered in one place.

PART – A

1. a) Specify the general purpose registers of 8086.

   b) List any four assembler directives.

   c) Write the significance of control word register of 8255.

   d) Discuss the various interrupts of 8051.

   e) Sketch the interfacing diagram of external memory of 8051.

PART – B
UNIT – I

2.   a) Draw the architecture of 8086 microprocessor and explain the function of each block.   6 M

   b) Explain the minimum mode operation of 8086 microprocessor.   6 M

OR

3. a) Explain the bus operation of 8086 processor.   6 M

 b) Draw the memory read cycle timing diagram in minimum mode configuration.   6 M

UNIT – II

4. a) Distinguish macros and procedures. Also mention its merits and demerits.   6 M

 b) Develop an ALP to generate Fibonacci series up to 6 numbers.   6 M

OR

5. a) List out with example the string instructions.   6 M

 b) Develop an ALP to generate and check whether the given number is palindrome or not.   6 M

UNIT-III

6. a) Explain the operation of programmable interrupt controller with neat block diagram.   6 M

 b) Interface Digital to Analog converter with 8086 to generate square waveform.   6 M

OR

7. a) Explain the operating modes of 8255 PPI.   6 M

 b) Interface stepper motor control to operate in clock wise and anticlock wise direction.   6 M

UNIT – IV

8. a) Explain the addressing modes of 8051 with an example.   6 M

    b) Develop an ALP for 8051 to perform SWAP, SET and RESET a byte.   6 M

OR

9. a) Explain the operation of TIMER register in 8051.   6 M

    b) Write an ALP to perform arithmetic operations (ADD and SUBTRACT) using 8051.   6 M

UNIT – V

10. a) Interface ADC with 8051 and verify the operation using algorithm.   6 M

    b) Explain the interfacing of 8051 with LEDs.   6 M

OR

11. a) Interface 8051 with seven segment display.   6 M

    b) Interface 16k memory with 8051.   6 M