Roll No

EE-601

B.E. VI Semester

Examination, June 2016

Microprocessor and Microcontrollers

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit-I

1. a)   What is the function of BIU?
    b)   Define interrupts and interrupt routines.
    c)   Give the description of control flags of 8086.
    d)   With internal block diagram explain the structure of 8086 microprocessor.

OR

Draw the minimum mode configuration of 8086 microprocessor.

Unit-II

2. a)   Write a note on Assembler.
    b)   Define Subroutine.
    c)   What is meant by call return?
    d)   Discuss push and pop operation of 8086 stack.

OR

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Write 8086 assembly language program for :
i)   Multiplication of two 16 bit unsigned numbers
ii) Subtraction of two 32 bit numbers.

Unit-III

3. a)   Write a note on demand transfer mode of DMA transfer.
    b)   Write short note on 8254 timer.
    c)   What do you mean by memory mapped I/O scheme?
    d)   Explain the internal architecture of 8255. Explain function of each block.

OR

Draw the block diagram of 8251 and explain the function of each block.

Unit-IV

4. a)   Write a note on 8051 microcontroller.
    b)   Explain function of ALU in 8051 microcontroller.
    c)   Differentiate between a microprocessor and microcontroller.
    d)   Explain different types of I/O port configuration in 8051 microcontroller.

OR

Explain the short interrupts of 8051 microcontroller.

Unit-V

5. a)   Write a note on TMOD register of 8051 microcontroller.
    b)   Discuss TCON register of 8051 microcontroller.
    c)   Differentiate between topping and bottoming cycles.
    d)   Explain the 8051 based thyristor firing circuit.

OR

Explain various timer modes of 8051 microcontroller.

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