Total No. of Questions :5] *[Total No. of Printed Pages : 2*

Roll No .....

EI/IC - 501

B.E. V Semester

Examination, June 2016

Microprocessors And Microcontroller

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 question 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) List the rules for memory segmentation of 8086.
   b) Explain the minimum mode signals of 8086.
   c) State the interrupt priorities for 8086 interrupts.
   d) Draw and explain the timing diagrams of input and output transfer of 8086 in maximum mode.

OR

Sketch block diagram showing basic 8086 minimum mode system. Explain functions of 8282 latches and 8286 transceiver.

Unit - II

2. a) Explain the base-plus-index addressing mode.
   b) What is the function of stack pointer?
   c) Explain the use of PUSH and POP instructions in 8086.
   d) Write an assembly language program to generate a delay of 5 minutes.

OR

Write an assembly language program to perform an addition of 3×3 matrix.

Unit - III

3 a) Explain the bit set/reset mode of 8255.
   b) List the differences between 8253 and 8254.
   c) Explain the control word formation with suitable example.
   d) Draw the interfacing diagram for 8086 base system (minimum mode) with the following specifications:
      i) 16 KB RAM
      ii) 8KB EPROM
   Also show the required latches, buffers and decoder.

OR

Discuss the organization and architecture of 8251A (USART) with a functional block diagram.

Unit - IV

4: a) Write a program to generate a square wave on the post-1.
   b) Draw and explain the interrupt structure of 8051.
   c) Explain the PUSH and POP instructions in 8051.
   d) Write a short note on interrupt priority.

OR

Explain the various types of Jump instructions according to range.

Unit - V

5 a) Write an 8051 C program to send the sum of values –12 and +15 to port P1 (Use of signed numbers)
   b) Draw the bit pattern of TMOD register.
   c) Write a C program for the DS 89C4x0 to transfer letter 'A' through 'Z' serially at 9600 baud continuously. Use the second serial port with 8-bit data and 1 stop bit.
   d) Explain the methods for excitation of stepper motor.

OR

Draw and explain the interfacing of ADC 0848 to 8051.

******