Roll No ....

EC-504
B.E. V Semester
Examination, June 2016
Microprocessors 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.

1. a) List the features of 8086 microprocessors.
   b) Explain the maximum mode signals of 8086.
   c) Explain the rules for memory segmentation.
   d) Explain the purpose of pointers and index registers.

   OR

   Draw and explain a block diagram showing 8086 in maximum mode configuration.

2. a) Explain the difference between direct and indirect addressing mode.
   b) Explain base relating addressing.
   c) Explain the function of linker.
   d) Write a program to calculate factorial of a number.

   OR

   Write a program to convert a BCD number into a Hex number.

3. a) Explain the bit set/reset mode of 8255.
   b) List the differences between 8253 and 8254.
   c) Explain the data transfer mode of DMA.
   d) Discuss the organization and architecture of USART with a functional block diagram.

   OR

   Give the interfacing scheme of 8257 with 8086.

4. a) What is interrupt service routine?
   b) Explain interrupt cycle.
   c) What do you mean by interrupt priorities?
   d) Generate a real time clock by generating a periodic interrupt request signal on the $\overline{NMF}$ input of 8086.

   OR

   Explain the operating modes of 8259.

5. a) List the features of 8051 microcontroller.
   b) Explain the byte level logical instructions of 8051.
   c) Write an 8051 assembly language program to transfer letter 'C' serially at 9600 baud rate, continuously.
   d) Give steps to program 8051 for receiving serial data.

   OR

   State various modes available for timer in 8051.

******