

Roll No .....

**EC-504****B.E. V Semester**

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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

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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.

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OR

State various modes available for timer in 8051.

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