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EE-601**B.E. VI Semester**

Examination, December 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 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.

1. a) List the various addressing modes present in 8086.
 b) What are the three classifications of 8086 interrupts?
 c) What are the advantages of using memory segmentation?
 d) Explain the function of all the pins of 8086 processor.

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Explain the register organization of 8086.

2. a) Explain the uses of PUSH and POP instruction in 8086.
 b) Explain "EQU" assembler directive in 8086.
 c) Explain the functions of following 8086 signals.
 i) HLDA www.rgpvonline.com
 ii) RQ/GTO
 d) Write an ALP to generate a delay of five minutes.

OR

List out the shift instructions and rotate instructions in 8086. Give example for each.

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3. a) What is the difference between programmable internal timer 8253/8254? www.rgpvonline.com
 b) Compare I/O mapped and memory mapped I/P techniques.
 c) Explain the different modes of operation in 8255.
 d) Draw and explain the interfacing of 8-bit DAC with 8086.

OR

Draw the interfacing scheme of 8255 and 8086 in I/O mapped I/O mode.

4. a) Explain the function of the pins PSEN and EA of 8051.
 b) Compare Microprocessor and microcontroller.
 c) Write an ALP to realize following logic circuit using Boolean instructions of 8051.

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- d) Explain the interrupt structure of 8051.

OR

Write 8051 ALP to transmit "Hello World" to PC at 9600 baud for external crystal frequency of 11.0592 MHz.

5. a) How many timers do we have in 8051?
 b) Explain, how DAC can be interfaced to 8051.
 c) Draw the format of SCON register. Explain different bits in it.
 d) Draw and explain the interfacing D/A converter with 8051.

OR

Interface stepper motor to the 8051 microcontroller and write an ALP to rotate it 180°.

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