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

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EX - 502

B.E. V Semester

Examination, June 2016

Microprocessor 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.

1. a) Define:
   i) BHE ii) ALE
   b) Describe instruction queue of 8086.
   c) Explain memory interfacing of 8086 based system.
   d) Draw internal organization of 8086 microprocessor and draw pin diagram of 8086 microprocessor.

   OR

   Draw block diagram of minimum mode configuration of 8086 based system.

2. a) Describe meaning of each bit of flag register.
   b) Define:
   i) DB ii) DW
   c) Illustrate the role of stack during subroutine call.
   d) Write a program to generate a delay of one second using 8086 microprocessor with 6MHz Clark's frequency.

   OR

Explain STACK mechanism of 8086 microprocessor with suitable example.

3. a) What is BSR mode of 8255?
   b) Explain meaning of control word of 8255.
   c) Compare memory mapped I/O and peripheral I/O.
   d) Draw block diagram of 8255 and timing diagrams for input and output data transfer under handshake mode.

   OR

   Draw block diagram of programmable interval timer (8254) and discuss different mode of operations.

4. a) Differentiate microprocessor and microcontroller.
   b) Define:
   i) SP ii) PC
   c) Draw internal RAM organization of 8051 microcontroller.
   d) Write a program for 8051 microcontroller to add two 16-bit numbers.

   OR

   Explain interrupt mechanism of 8051 along with SFRs associated with interrupt.

5. a) Define:
   i) TMOD ii) SCON
   b) Explain successive approximation ADC.
   c) Write a short note on stepper motor.
   d) Write a program in C for the 8051 to transfer the letter 'A' serially at 9600 baud continuously. Use 8-bit data and 1 stop bit.

   OR

   Design a 8051 based system to firing a thyristor for speed control of D.C motor.

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