Total No. of Questions :5]

Roll No .....

EC - 504

B.E. V Semester

Examination, June 2015

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 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.

Unit - I

1. a) Draw the internal block diagram of 8086.

   b) What is the function of bus interfacing unit?

   c) What are segment registers? Explain the purpose of them.

   d) Draw and explain the timing diagram of input and output transfers of 8086 in maximum mode.

   OR

   Explain the general bus operation of 8086 with the help of timing diagram.

Unit-II

2. a) Explain the String addressing mode.
   b) What is the function of Stack pointer?
   c) Write an operations performed by the 8086 microprocessor CALL instruction.
   d) Draw and explain the interrupt acknowledge cycle of 8086.

OR

Design an 8086 based system with the following specifications:

i) 8086 in maximum mode
ii) 64 kbyte EPROM
iii) 64 kbyte RAM

Unit-III

3. a) Draw the functional block diagram of 8255.
   b) Draw the status word format of 8251A.
   c) Illustrate the different modes of operation of 8255.
   d) Interface a 4×4 Hex Keyboard to 8255. Write a program which will detect keyclosure and store key number in register AL.

OR

Explain the architecture, organization and various modes of operation of a programmable DMA controller 8257.

Unit-IV

4. a) List the differences between maskable and non-maskable interrupts.
   b) What are advantages of using 8259?
   c) Explain the different operating modes of 8257.

   d) Explain in brief the different types of DMA data transfer.

OR

Write an initialization program to transfer 2000 bytes of data from memory to peripheral. The starting address in memory is 25AOH. After the transfer DMA operation should be terminated. Use memory mapped I/O.

Unit-V

5. a) Explain bit level logical instructions of 8051.
   b) Write a program for counter 1 in mode 2 to count the pulses and display the state of TL_1 count on port 2. Assume that clock input is connected to T_1 pin.
   c) Write a program to display counter 0 on 7- segment LEDs. Assume that clock input is connected to Pin.
   d) Explain operating modes for serial port in 8051

OR

Explain the memory structure of 8051.

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