Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No .....

MEPE-202

M.E./M.Tech. II Semester

Examination, June 2016

Advanced Microprocessor and Application

Time : Three Hours

Maximum Marks: 70

Note : i) Attempt any five questions.
ii) This paper contain total eight questions.
iii) All questions carry equal marks.

1. a) Draw a pin diagram of 8-bit microprocessor and describe meaning of each pin in short. 7
   b) Draw a neat sketch of interfacing scheme of 64 KB memory using eight 8 KB memory chips. 7

2. a) Explain with example of different addressing modes supported by a 16-bit microprocessor. 7
   b) Consider an architecture of a 16-bit microprocessor and answer following: 7
      i) If the current values in the stack segment register and stack pointer are COOOh and FFOOh respectively. What is the address of TOP of the stack?
      ii) For the base and offset addresses in (i) how many words of data are currently held in the stack if maximum allowable space is allocated for stack.
      iii) Show how the value EE11h from register AX would be pushed on to the TOP of stack as mentioned in section (i).

3. a) Draw block diagram of 8255 and design a address decoding scheme for 8255 interface with 8085 or 8086 in I/O mapped I/O mode. Address of port A should be 20h and what are the other addresses. 7
   b) Explain working of programmable interrupt controller (8259) using suitable block diagram. 7

4. a) Describe various methods of analog to digital conversion using suitable example. 7
   b) Design a scheme of interfacing of 8085 or 8086 microprocessor with ADC 0801 or any 8-bit successive approximation ADC. 7

5. a) Differentiate microprocessor and microcontroller. List out different criterions to select microprocessor or microcontrollers for an application. 7
   b) Draw internal block diagram of 8051 microcontroller and explain each block in brief. 7

6. a) Write a program to generate a square wave of 10 KHz using 8051 microcontroller with clock frequency of 12 MHz. 7
   b) Write a program using 8085 or 8086 microprocessor to sort three numbers in ascending order. 7

7. a) What is an interrupt in microprocessor. Explain interrupt mechanism of any 8-bit or 16-bit microprocessor. 7
   b) Draw timing diagram of memory read instruction cycle. 7

8. Write short note on any two : 14
   a) Programmable interval timer (8253)
   b) Memory mapped I/O scheme
   c) On chip timer mechanism of 8051 microcontroller.

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