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Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(EE) (2013 Batch E-II) (Sem.-2)
MICROPROCESSOR AND MICROCONTROLLER

Subject Code : MTEE-205B

Paper ID : [A2510]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carry TWENTY marks.

1. Design a microprocessor based system for the measurement, display and control of speed of a motor. (20)
2. a) Explain MIN mode operation of 8086 with the help of timing diagram. (10)
b) How the 20-bit effective address is calculated in 8086 process? If the 8086 execution unit an effective address of 5050H and OS contains 7000H. What physical address will the BIU produce? (10)
3. Explain the addressing modes of 8086 with the help of an example. (20)
4. a) Write an 8086 assembly language program to find the smallest 16-bit number in a 16-bit data array. (14)
b) What is the function of watch-dog timer? (6)
5. a) With neat diagram explain the timer / counter functions in 8051 Micro Controller. (10)
b) What is pipelining? How is it achieved in 8086? What are its advantages? (10)
6. a) Draw the internal architecture of 8086. (10)
b) Discuss the advantages of microcontroller based system over microprocessor based system. Enlist the salient features of 8051 microcontroller. (10)
7. a) Explain interfacing of stepper motor with 8051 and write program to control stepper motor. (10)
b) Describe the hardware features of the 8051 microcontroller. (6)
8. a) Write a program in 8051 to generate a square wave with an ON time of 4 ms and an OFF time of 10ms on bit 0.0 of port 0. Assume the crystal frequency of 11.052 MHz. (10)
b) Explain the various addressing modes of 8051 microcontroller. (10)