

23257

**M. Tech. 1st Semester
(Electrical Power Systems)
Examination-May, 2015**

MICRO PROCESSOR & MICRO CONTROLLER

Paper : MTEPS-101

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any five questions. Each question carries equal marks.

1. (a) Describe the register organisation of 8086.
Discuss the function of each register. (10)
- (b) What are the addressing modes of 8086 ?
Discuss them in brief. (10)
2. (a) Describe the different logical instructions in the 8086. (8)

23257-200-(P-4)(Q-8)(15) (1)

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- (b) Write a program to find the number of even and odd data bytes present in the given array having one hundred byte type data. (12)
3. (a) Describe the maximum code configuration of the 8086-based system with necessary block diagram. (10)
- (b) With necessary waveforms, describe the bus timings for bus request and grant in minimum and maximum modes. (10)
4. (a) Draw a diagram showing the memory and I/O map when memory-mapped I/O and I/O-mapped I/O schemes are used. (10)
- (b) What is meant by variable port addressing in the 8086 and how many I/O devices can be connected to the 8086 by this method ? (10)

23257-200-(P-4)(Q-9)(15) (2)

5. (a) How many interrupt lines the 8086 possesses ? (3)

(b) Write a program to create a file named AGE in the PC and store 100 bytes of data in it, which have to be taken from the memory block starting at 3000H : 2000H, if the software instruction INT 0AH is executed by the PC. Make use of the DOS interrupt INT 21H. (17)

6. (a) Generate a triangular waveform using the DAC 0800. (12)

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(b) Show interface connections for a microprocessor-based scheme for controlling a stepper motor. (8)

7. (a) Describe the different modes of operation of the keyboard interface with the 8279. (8)

(b) Draw the block diagram and explain the operations of the 8251 serial communication interface. (12)

8. (a) Draw and explain the architectural details of the 8051. (15)

(b) Explain the stack operation in the 8051. (5)

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