

Microprocessor & Microcontroller

P. Pages : 2 TKN/KS/16/7412/7417

Time : Three Hours Max. Marks : 80

Notes : 1. All questions carry marks as indicated.

2. Assume suitable data whenever necessary.

3. Illustrate your answers whenever necessary with the help of neat sketches..

1. a) What are the features of 8086? Explain the different operating modes of 8086. 8

b) Draw and explain the clock generator 8284 circuit of 8086. 6

OR

2. a) Explain the different addressing modes of 8086 with examples. 6

b) Explain following instructions of 8086 with example LOCK, XLAT, WAIT, MOVSB. 8

3. a) How does 8086 handle interrupts? Explain interrupt vector table of 8086. 7

b) Write a program to compare two string of 10bytes long, if both string are same set carry flag & if both string are different then reset carry flag. 6

OR

4. a) Draw and explain the block diagram of 8255PPI. 7

b) Explain all keyboard modes of 8279 in short. 6

5. a) What are the different operating mode of 8254, Explain the mode-3 operating mode of 8254 in details. 7

b) Explain the 8254 control word format and design a pulse train generator with the help of 8254 to generate a pulse train of frequency 1KHz and duty cycle is 25%. 6

OR

6. a) Draw the block diagram of 8251 & explain each block in brief. 7

b) Explain the ICW's of 8259 by giving bit definition of each ICW. 6

7. a) Explain the communication between 8086 and 8087 in brief with neat diagram 7

b) Discuss any four instruction of 8087 6

OR

8. a) Explain the operation of DMA 8237 in details. 6
b) Draw & Explain the circuit diagram of 8086 in maximum mode. 7
9. a) Draw and explain the PSW of 8051 microcontroller. 6
b) What are the special function register of 8051. Explain any three of them. 8

OR

10. a) Write a program to make LED's ON-OFF alternately connected at port O of 8051 with neat interfacing diagram. 6
b) How does 8051 respond to interrupt. Explain interrupt structure of 8051 in details. 8
11. a) What do you mean by addressing mode? Discuss the different addressing modes of 8051 microcontroller. 6
b) Write a program to find smallest number in a block of 10 bytes which are present in internal memory from address 60H. Store smallest number in sequence. 7

OR

12. a) Explain the role of timer/ counter of 8051 microcontroller along with its control registers. 6
b) Explain the interfacing of stepper motor with 8051 microcontroller for rotating the stepper motor in clockwise direction at 200 rpm. 7
