



- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.

1. a) Explain physical address formation in 8086 with suitable example. 4
- b) Explain the functions of following pins of 8086. 6
- i)  $\overline{MN}/\overline{MX}$  ii)  $\overline{ALE}$
- iii)  $\overline{DT}/\overline{R}$  iv)  $\overline{DEN}$
- c) Draw the flag register of 8086 and explain status flags. 4

**OR**

2. a) Write a program to transfer 10 bytes of data from memory address 5000 : 2000 H to memory address 7000 : 3000 H. 7
- b) Draw and explain internal architecture of 8086 microprocessor. 7
3. a) Explain different input/output techniques. 5
- b) Interface 8253 with 8086 at address 5000 H and write a program to generate a square waveform at counter 0. The frequency of square wave is 1 KHz. Assume 8253 operates at frequency of 1 MHz. 8

**OR**

4. a) Interface DAC with 8086 and write a program to generate sawtooth waveform at DAC output. 7
- b) Draw and explain internal block diagram of 8253 (PIT). Also explain what do you mean by "Read on fly". 6
5. a) Draw and explain internal architecture of 8255 (PPI). 6
- b) Explain all ICW's and OCW's of 8259. Also explain initialization sequence of 8259. 7

**OR**

6. a) Explain dedicated interrupts of 8086. 6  
b) Draw and explain internal block diagram of CRT controller 6845. 7
7. a) Explain maximum mode signals of 8086. 6  
b) Explain all the data types supported by NDP. 7

**OR**

8. a) Draw and explain interfacing of 8279 A with 8086. 7  
b) Explain different transfer modes of 8237. 6
9. a) Explain following instructions of 8051. 8  
1) SWAP 2) DJNZ R0, target  
3) DA 4) MUL AB  
b) Explain real mode and protected mode of 80386. 6

**OR**

10. a) Explain following pins of 8051. 6  
1)  $\overline{EA}$  2)  $\overline{PSEN}$   
3) ALE 4) Reset  
b) Explain PSW register of 8051. 4  
c) Draw the structure of 80386 descriptor. 4

11. a) Explain basic features of RISC processors. 7  
b) Explain the organization of floating point unit. 6

**OR**

12. a) Explain design issues of RISC processors in short. 6  
b) Explain process of multitasking using TSS. 7

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