B.E. (Computer Technology) Fourth Semester (C.B.S.)

Advanced Microprocessor & Interfacing Paper – III

P. Pages : 2 **TKN/KS/16/7378**

Time : Three Hours * 0 4 8 5 * Max. Marks : 80

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 the operations carried out by BIU of 8086 microprocessor. Also explain how physical address of memory is generated in 8086. **6**

b) Explain addressing modes of 8086 with one example each. **7**

OR

2. a) Write a program to transfer the string of 10 bytes stored from address. 2000H: 2000H to memory address. 5000H: 1A1BH. **6**

b) Interface 32KB EPROM and 16KB RAM with. 8086 in minimum mode. Starting address for RAM is 00000H and for EPROM it is F0000H. **7**

3. a) Interface 8 bit ADC with 8086. Also write a program to take the 10 samples of analog signals, convert it into digital equivalent and store it from effective address 5000H. **8**

b) Explain different I/O techniques. **5**

OR

4. a) Draw and explain interfacing of $4*4$ Hexadecimal keyboard and one seven segment display with 8086. **6**

b) Interface 8253 with 8086. Also write a program to generate a pulse of width of 5msec at 8253 output. Assume frequency for 8253 is of 1 MHZ. **7**

5. a) Draw and explain internal architecture of 8259. **7**

b) Interface 8251 with 8086. Also write a program to transfer message "WELCOME" serially in asynchronous mode. **7**

OR

6. a) Draw and explain internal architecture of 8255. Also explain control word format of 8255. **7**

b) Explain all ICW's and OCW's of 8259. **7**

7. a) Explain maximum mode configuration of 8086. Also explain the need of 8288 bus controller IC. **7**

b) Draw and explain internal architecture of 8087. **6**

OR

8. a) Explain what do you mean by loosely coupled and closely coupled configuration. **6**

b) Explain various data types supported by 8087 NDP. **7**

9. a) Explain memory organization of 8051. **6**

b) Explain the functions of following pins of 8051. **8**

i) $E\overline{A}$ ii) ALE

iii) XTAL1 & XTAL2 iv) $\overline{PSEN}$

OR

10. a) Draw and explain internal block diagram of 8051. **9**

b) Explain real mode and protected mode operations. **5**

11. a) Explain memory management unit of Pentium. **7**

b) Explain basic concept of RISC. Processor. Explain its advantages and disadvantages over traditional concept. **6**

OR

12. a) Draw and explain architecture of Pentium super scalar processor. **8**

b) What is Task state segment (TSS)? How it is addressed. **5**

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