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

Advanced Microprocessor & Interfacing

P. Pages : 2 **NIR/KW/18/3375**

Time : Three Hours * 1 3 1 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.

1. a) Draw and explain the pipeline architecture of 8086 microprocessor. **8**

b) Explain the following pins of 8086 processor. **6**

a) ALE b) $\overline{BHE}$

c) $mN/\overline{mX}$ d) $\overline{TEST}$

e) $DT/\overline{R}$ f) NMI

OR

2. a) Explain the addressing modes of 8086 microprocessor. **6**

b) Interface 32kB EPROM and 16kB RAM with 8086 in minimum mode, starting address for RAM is 00000H and EPROM is F0000H. **8**

3. a) Interface 8 bit DAC to 8086 microprocessor and write a program to generate triangular wave. **7**

b) Explain the different I/O techniques. **6**

OR

4. a) Draw and explain 4x4 matrix keyboard and one seven segment display with 8086. **7**

b) Interface 8253 with 8086 and write a program to generate a square wave of frequency 1kHz at 8253 output. Assume frequency of 8253 is of 1 MHz. **6**

5. a) Draw and explain internal block diagram of 8259 PIC? **7**

b) Draw and explain block diagram of 8237 DMA controller. **6**

OR

6. a) Draw and explain the internal architecture of 8255. **7**

b) Explain all ICW'S and Occo's? **6**

7.	a)	Draw and explain maximum mode configuration of 8086. Also explain need of 8288 bus controller IC.	**7**
	b)	Explain the various data types supported by 8087 NDP.	**7**

OR

8.	a)	Explain the different keyboard and display modes of 8279?	**7**
	b)	Explain what do you mean by loosely coupled and closely coupled configuration.	**7**
9.	a)	Draw and explain 8051 internal architecture.	**7**
	b)	Explain the internal memory organization of 8051.	**6**

OR

10.	a)	Explain real and protected mode operations.	**7**
	b)	Explain paging mechanism of 80386?	**6**
11.	a)	Give the functional description of Pentium Architecture?	**7**
	b)	Write short note ON special Pentium register?	**6**

OR

12.	a)	Explain the basic concept of RISC processor? Explain its advantages and disadvantages over traditional concept.	**7**
	b)	What is task state segment (TSS)? How it is addressed.	**6**

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