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

Microprocessor

P. Pages : 2 **NKT/KS/17/7305**

Time : Three Hours * 0 5 0 7 * 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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain following pin function : **8**

i) RQ / $\overline{GT}$ ii) $\overline{BHE}$ / S_7

iii) TEST iv) MN / $\overline{MX}$

b) Explain in brief Register Organisation of μp 8086. **6**

OR

2. a) List the functions of BIU & EU & give their functional components. **7**

b) How does prefetch queue (IQ) help in improving performance ? Explain. **7**

3. a) Define addressing modes & explain its types. **7**

b) Find the errors in the following instructions & correct them. **6**

i) MOV AL, BX ii) MOV 1234h, Ax

iii) MOV CS, 2345h iv) MOV [SI], [Bx]

v) INC [SI] vi) ADD [3400h], AL

OR

4. a) Write an assembly language program to add data of 15 bytes of an array. **7**

b) Explain MUL & DIV instructions in detail. **6**

5. a) Explain the following instructions. **6**

i) SHR Ax, CL

ii) RCR

iii) RCL

b) Describe in brief conditional Jump instructions. **7**

OR

6.	a)	Describe in detail program status word of 8086.	**7**
	b)	Explain the working of the CMPS/CMPSB instruction with example.	**6**
7.	a)	Explain PUSH & POP instruction in detail.	**6**
	b)	Write an assembly language program to find largest number amongst the 10 bytes of data in stack.	**7**

OR

8.	a)	What is a macro ? How do you define it ? Show its use with example.	**7**
	b)	Compare conditional call & uncondition call.	**6**
9.	a)	Describe in detail IN & OUT instructions.	**6**
	b)	Differentiate between synchronous & asynchronous data transfer.	**7**

OR

10.		Draw & explain block diagram of IC 8255 with its BSR mode.	**13**
11.	a)	Describe the interrupts types of 8086.	**7**
	b)	Write short note on following instructions. i) CLI ii) STI iii) IRET	**7**

OR

12.	a)	Draw & explain block diagram of IC 8259.	**10**
	b)	Write short note on following modes of IC 8259 i) ICW ii) OCW	**4**

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