B.E. Fourth Semester (Computer Science & Engineering., Computer Engineering) (CGS)

10314 : Assembly Language Programming : 4 KS 04 / 4 KE 04

P. Pages : 2 | AU - 2602

Time : Three Hours | Max. Marks : 80

* 0 5 5 7 *

Notes : 1. Assume suitable data wherever necessary.
2. Illustrate your answer necessary with the help of neat sketches.
3. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) Explain the software model of 8086 microprocessor. **6**

b) Calculate the value of each of the physical addresses that follows. Assume all numbers are hexadecimal numbers. **8**

i) 1000 : 1234 ii) 0100 : ABCD
iii) A200 : 12CF iv) B2C0 : FA12

OR

2. a) Explain register organization of 8086. **6**

b) Draw and explain internal architecture of 8086 microprocessor. **8**

3. a) Explain the instruction format used in 8086 microprocessor. **7**

b) Explain the following instructions with example: **6**

i) LES ii) XCHG iii) IN

OR

4. a) What do you mean by addressing modes? Explain with example various memory operand addressing modes. **9**

b) Assume that (AX) = $ABCD_{16}$ and (BX) = 4321_{16}. What is the result of executing ADD AX, BX? **4**

5. a) Explain flag manipulation instruction of 8086. **6**

b) Explain the shift instructions with example. **7**

OR

6. a) Give that (DL) = 8DH, (CL) = 03H & (CF) = 1. Determine the result after executing following instructions. **8**

i) ROR DL, CL ii) ROL DL,CL
iii) RCL DL, CL iv) RCR DL,CL

b) Explain in detail CMP instruction. Also differentiate between CMP and SUB instruction. **5**

SECTION - B

7.	a)	What are the advantages of Macro over subroutine?	**6**
	b)	What is stack? How stack is implemented in memory? Explain stack related instructions.	**7**

OR

8.	a)	Differentiate between i) CALL and JUMP instruction. ii) NEAR and FAR procedure.	**6**
	b)	Explain subroutine and subroutine handling instructions.	**7**
9.	a)	Draw and explain the block diagram of 8255 PPI.	**8**
	b)	Differentiate between I/O mapped I/O and memory mapped I/O.	**6**

OR

10.	a)	Explain the isolated I/O interface of 8086 in brief.	**7**
	b)	Write a sequence of instructions that inputs the byte of data from inputs ports at I/O addresses $A000_{16}$ and $B000_{16}$ adds these values together and saves the sum in memory location IO_SUM.	**7**
11.	a)	Explain with the help of diagram Interrupt vector table.	**7**
	b)	What do you understand by interrupt? Explain interrupt types & their priority.	**6**

OR

12.	a)	Explain the following Interrupt handling instructions: i) IRET ii) INT N iii) RESET	**6**
	b)	Explain interrupt processing sequence of 8086 with the help of flowchart.	**7**

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