Registration No. :

Total number of printed pages – 2

B. Tech

PCEL 4303 (New)

Sixth Semester (Back) Examination – 2013
MICROPROCESSOR AND MICROCONTROLLERS
BRANCH : CSE,EEE,ELECTRICAL
QUESTION CODE : B283
Full Marks – 70
Time : 3 Hours

Answer Question No. *1* which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.

1.   Answer the following questions :   2 ×10

(a)   What is memory segmentation ?

(b)   Draw the timing diagram for the instruction SUB B.

(c)   Write three instruction used to clear the content of accumulator used in 8085 μP.

(d)   What is the importance of signal $\overline{BHE}$?

(e)   Represent 8051 PSW register.

(f)   Write an assembly language program to find the smaller of the two numbers using 8085 instructions.

(g)   What is the role of register B in 8051 ?

(h)   What is a line driver ?

(i)   What is operating frequency if 7 MHz is the oscillation frequency of 8086 μP ?

(j)   What is the value of AX after the program execution ?

          MOV CX, 0002
          MOV AX, 46AB
          MOV BX, C7AD
     Labe : OR AX, BX
          LOOP Label

P.T.O.

2. (a) What is addressing mode ? Describe the addressing mode of 8051 microcontroller with example. 5

(b) Write the salient features of 8051 microcontroller. 5

3. (a) Describe the external memory addressing technique of 8086 μP. 5

(b) Draw the timing diagram for memory write bus cycle in maximum mode. 5

4. (a) Write a program to add 15 decimal numbers using 8086 instruction set. 5

(b) What is 80386 virtual mode operation ? 5

5. (a) How do you enable and disables interrupts in 8085 and 8086 ? 4

(b) Explain 8255 mode definition format. Write a program for 8085 to get a data byte from port B and add FFH to this data. Output the result to port A. Assume that 8255 is configured in memory mapped mode. 6

6. (a) What is DMA operation ? How does DMA controller establish communication with 8086 microprocessor ? 5

(b) What are the different instruction types of 8086 microprocessors ? Bring out the difference between jump and loop instructions. 5

7. (a) Describe the programming model of 8085 microprocessor. 5

(b) Discuss 8051 unchipped RAM and how does it differentiate external and internal program memory. 5

8. Write short notes on any **two** of the following : 5×2

(a) Assembler directives

(b) 8086 minimum mode operation

(c) 8259 Programmable Interrupt Controller

(d) Stack and Subroutine.

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