CSE 101 – Introduction to Computer Engineering

1)

a) 8A9 (Hexadecimal)

8-> 1000 A-> 1010 9-> 1001

1000 1010 1001 (Binary)

b)EF3 (Hexadecimal)

E-> 1110 F-> 1111 3-> 0011

1110 1111 0011 (Binary)

c)0001 1110 0001 (Binary)

0001-> 1 1110-> E 0001-> 1

1E1 (Hexadecimal)

d)1111 1110 1101 1011 (Binary)

1111-> F 1110-> E 1101-> D 1011-> B

FEDB (Hexadecimal)

2)436F6D7075746572

According to ASCII table

43->C 6F->o 6D->m 70->p 75->u 74-> t 65->e 72->r

Message: **Computer**

3)

a)5-1

5 -> 00101 -1 -> 11110

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  00101      This process is overflow
 +11110
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 100011
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b)5-11

5-> 00101 -11-> 10101

00101

+10101

11010 No overflow.

4)

a)01001011 AND 10101011

Result: 00001011

b)01001011 OR 10101011

Result: 11101011

c)01001011 XOR 10101011

11100000

5)

a)7123

7-> OR process

Apply OR process to value in register 2 and value in register 3. Then put the result to register 1.

b)2BCD

2-> LOAD process

Load CD value to register B

6)Assembly program

LOAD R1,[0xA0]

LOAD R2,[0xA1]

LOAD R3,0x0F

LOAD R4,0xF0

AND R1,R1,R4

AND R2,R2,R3

OR R0,R1,R2

STORE R0,[0xA2]