***Assignment #2***

For each add instruction in this problem, assume that EAX contains the given contents before the instruction is executed, and give the contents of EAX as well as the values of the CF, OF, SF, and ZF flags after the instruction is executed:

 EAX before Instruction

(a) 00 00 00 45 add eax, 45

**EAX = EAX + 45**

**00 00 00 45**

**+ 45**

**= 00 00 00 8A**

**0100 0101 + 0100 0101 = 1000 1010**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 0(as result not zero)**

(b) FF FF FF 45 add eax, 45

**EAX = EAX + 45**

**EAX = FF FF FF 45 + 0000 0045**

**EAX = FF FF FF 8A**

**0100 0101 + 0100 0101 = 1000 1010**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 1(as NEGATIVE)**

**ZF = > 0(as result not zero)**

(c) 00 00 00 45 add eax, -45

**eax = eax - 45**

**eax = 00000045 - 45**

**eax = 00000000**

**0100 0101 - 0100 0101 = 0000 0000**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 1(as result zero)**

(d) FF FF FF 45 add eax, -45

**eax = eax - 45**

**eax = FFFFFF45 - 45**

**eax = FFFFFF00**

**0100 0101 - 0100 0101 = 0000 0000**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 0(as result not zero)**

(e) FF FF FF FF dd eax, 1

**EAX= eax + 1**

**EAX = FFFFFFFF + 1**

**EAX = 00000000**

**1111 1111 + 0000 0001 = 1 0000 0000**

**CF = 1 (as no carry ) OF=1 (as no overflow) SF= 0(as positive)**

**ZF = >0 (as result not zero)**

(f) 7F FF FF FF add eax, 100

**EAX = 7FFF FFFF + 0000 0100 = 8000 00FF**

**CF = 1 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 0(as result not zero)**

(g) 00 00 00 99 add eax, 1

**EAX = 0000 0099 + 0000 0001 = 9A**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 0(as result not zero)**

(h) 00 00 03 AF add eax, 10

**EAX = 00 00 03 AF + 0000 0010 = 3BF**

**CF = 0 (as no carry ) OF=0 (as no overflow) SF= 0(as positive)**

**ZF = > 0(as result not zero)**