**Binary , Octal and Hexadecimal conversion(fast method) :**

***EX***:

1 2 7 5 4 3 Octal

1 0 1 0 1 1 1 1 0 1 1 0 0 0 1 1 Binary

A  F  6  3  Hexadecimal

=(44899)decimal how !

***EX:***

2 1 4 4 3 5  Octal

1 0 0 0 1 1 0 0 1 0 0 0 1 1 1 0 1 Binary

1  1  9  1 D  Hexadecimal

***H.w:***

(1011100011)B =( ?)0 =(?)H

(AF31C)H= (?)O =(?)B

(37012)0= (?)B =(?)H

**Arithmetic operation :**

1-Binary addition :

Carry sum

0 + 0 = 0

0 + 1 = 1

1 + 0 = 1

1 + 1 = 1 0

***EX:***

1 1 1

11 100 111 110

+11 + 10 + 11 +100

110 110 1010 1010

**2-Binary subtraction :**

0 – 0 = 0

1 – 1 = 0

1 – 0 = 1

10 0 – 1 = 1 with borrow 1

***EX:***

10 10

1. 11 101 110

-01 -10 -011 -101

10 01 010 001

**3-Binary multiplication :**

0 x 0 = 0

0 x 1 = 0 the same manner as in Decimal

1 x 0 = 0

1 x 1 = 1

***EX:***

11 111

X 11 x 101

11 111

+ 11 + 000

1001 111

100011

**Hexadecimal addition :**

***EX:***

23 58 2B

+16 +22 +84

39H 7AH  AFH