

ques 2:

1 123 :

$2^3$

128 64 32 16 8 4 2 1  
0 1 1 1 1 0 1 1

$$\begin{array}{r} 123 \\ - 64 \\ \hline 59 \\ - 32 \\ \hline 27 \\ - 16 \\ \hline 11 \end{array}$$

∴ Binary of 123 is 01111011

2 74

128 64 32 16 8 4 2 1  
0 1 0 0 1 0 1 0

$$\begin{array}{r} 74 \\ - 64 \\ \hline 10 \end{array}$$

Binary of 74 is 01001010

3 - 60

i) Write binary of 60

128 64 32 16 8 4 2 1  
0 0 1 1 1 0 0

$$\begin{array}{r} 60 \\ - 32 \\ \hline 28 \\ - 16 \\ \hline 12 \end{array}$$

Binary of 60:

1's compl<sup>n</sup> - 0 0 1 1 1 1 0 0  
 add binary 1 - ~~to~~

$$\begin{array}{r}
 11000011 \\
 + 00000001 \\
 \hline
 110000100
 \end{array}$$

∴ Binary of -60 is 110000100

4 ~11

$$\begin{array}{r}
 11 \Rightarrow 1011 \\
 11 \Rightarrow 00001011 \\
 1's\ compl \quad 11110100 \\
 + \quad \quad \quad 0001
 \end{array}$$

$$\begin{array}{r}
 11110101
 \end{array}$$

$$\begin{array}{r}
 1011 \\
 + \quad 111 \\
 \hline
 1100 \Rightarrow 12
 \end{array}$$

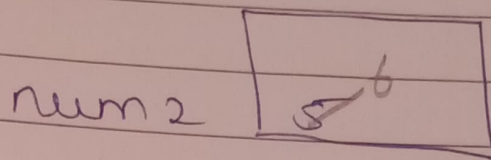
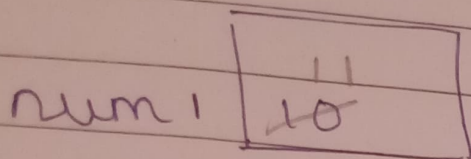
∴ ~(11) = -12

Q-3

$$\text{num1} = 10$$

$$\text{num2} = 5$$

$$(\text{num1}++ \mid \text{num2}) \& ((++\text{num2})^{\text{num1}})$$



$$\text{num1}++ \mid \text{num2}$$

$$\text{num1}++ = 10 \Rightarrow 1010$$

$$\text{num2} = 5 \Rightarrow 0101$$

$$1111 \Rightarrow 15$$

$$15 \& ((++\text{num2})^{\text{num1}})$$

$$++\text{num2} = 6 \Rightarrow 0110$$

$$\text{num1} = 11 \Rightarrow 1011$$

$$11010 \Rightarrow 13$$

$$15 \& 13$$

$$15 \Rightarrow 1111 \&$$

$$13 \Rightarrow 1101$$

$$11010 \Rightarrow 13$$

$$(\text{num1}++ \mid \text{num2}) \& ((++\text{num2})^{\text{num1}})$$

$$= 13$$