

part b:

Q $(93)_{10} + (DE)_{16} ?$

Ans Hex Sum is

$$(93)_{10} + (DE)_{16}$$

Now convert Hexa-decimal number form 93 and DE to their binary equivalent.

$$\begin{array}{r} 93 \rightarrow 10010011 \\ DE \rightarrow 11011110 \\ \hline 101110001 \end{array}$$

$$101110001 = 171$$

$$\text{Hence } (93)_{10} + (DE)_{16} = (171)_{10}$$

OR

$$\begin{array}{r} 93 \\ DE \\ \hline 171 \end{array} \Rightarrow (171)_{10}$$

(c) $(-27)_{10}$ from $(68)_{10}$

Sol:

$$27 = 00011011$$

$$-27 = 11100100$$

$$\begin{array}{r} 11100101 \end{array}$$

$$01000100$$

$$11100101$$

$$\boxed{1}00101001$$

$$68 = 01000100$$

$$(00101001)_2$$

$$\begin{array}{r} 68 \\ -27 \\ \hline 41 \end{array}$$

$$\begin{array}{cccccccc} 7 & 6 & 5 & 4 & 3 & 2 & 1 & 0 \\ 0 & 0 & 1 & 0 & 1 & 0 & 0 & 1 \end{array}$$

$$2^5 + 2^3 + 2^0$$

$$32 + 8 + 1 = 41$$