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Q2 //

a) $(735)_8 \Rightarrow (?)_{10} \quad (477)_{10}$

$$\begin{array}{r} 7 \quad 3 \quad 5 \\ \hline 8^2 \quad 8^1 \quad 8^0 \end{array}$$

$$\begin{array}{r} 64 \quad 8 \quad 1 \\ \Rightarrow (64 \times 7) + (8 \times 3) + (1 \times 5) = \\ 448 + 24 + 5 = \boxed{477} \end{array}$$

b) $(525)_6 \Rightarrow (?)_{10}$

$(197)_{10}$

$$\begin{array}{r} 5 \quad 2 \quad 5 \\ \hline 6^2 \quad 6^1 \quad 6^0 \end{array}$$

$$\begin{array}{r} 36 \quad 6 \quad 1 \\ \Rightarrow (36 \times 5) + (6 \times 2) + (1 \times 5) = \\ = 180 + 12 + 5 = \boxed{197} \end{array}$$

Q2 //

$$a) (1.10010)_2 \Rightarrow (?)_{10} , (?)_{16}$$

$$1.10010 = (1 \times 2^0) + (1 \times 2^{-1}) + (0 \times 2^{-2}) + (0 \times 2^{-3}) + (1 \times 2^{-4}) + (0 \times 2^{-5})$$

$$= 1 + 0.5 + 0 + 0 + 0.0625 + 0 = (1.5625)_{10}$$

$$1.10010 \Rightarrow$$

$$\begin{array}{r} \cancel{10011} \\ \cancel{3} \mid \cancel{0010} \\ \mid 2 \end{array}$$

$$\frac{1001}{2} \cdot \frac{1001}{4} = (1.9)_{16}$$

$$b) (110.010)_2 \Rightarrow (?)_{10} , (?)_{16}$$

$$110.010 = (1 \times 2^2) + (1 \times 2^1) + (0 \times 2^0) + (0 \times 2^{-1}) + (1 \times 2^{-2}) + (0 \times 2^{-3})$$

$$= 4 + 2 + 0 + 0 + 0.25 + 0 = 6.25 \quad (6.25)_{10}$$

$$110.010 \Rightarrow \frac{0110}{6} \cdot \frac{0100}{4} \Rightarrow (6.4)_{16}$$

Q3 //

$$\textcircled{a} \ 10000000 \Rightarrow 01111111 \Rightarrow 1 \text{ e' com.} \\ \Rightarrow 10000000 \Rightarrow 2 \text{ e' com.}$$

$$\textcircled{b} \ 00000000 \Rightarrow 11111111 \Rightarrow 1 \text{ e' com.} \\ \Rightarrow 10000000 \Rightarrow 2 \text{ e' com.}$$

$$\textcircled{c} \ 11011010 \Rightarrow 00100101 \Rightarrow 1 \text{ com.} \\ \Rightarrow 00100110 \Rightarrow 2 \text{ e' com.}$$

$$\textcircled{d} \ 01110110 \Rightarrow 1001001 \Rightarrow 1 \text{ com.} \\ \Rightarrow 10001010 \Rightarrow 2 \text{ com.}$$

Q4//

a)
$$\begin{array}{r} 10011 \\ - 10001 \\ \hline 00010 \end{array} \rightarrow 2, \text{com.}$$

$$\begin{array}{r} 10011 \\ + 01111 \\ \hline 10010 \end{array} \Rightarrow \boxed{00010}$$

b)
$$\begin{array}{r} 100010 \\ - 100011 \\ \hline 011101 \end{array} \rightarrow 2, \text{com.}$$

$$\begin{array}{r} 100010 \\ + 011101 \\ \hline 111111 \end{array} \rightarrow 000001 \rightarrow 2, \text{com, and we add the negative sign}$$

$$= -(000001)$$

c)
$$\begin{array}{r} 1001 \\ 101000 \\ \hline 100001 \end{array} \rightarrow 011000, 2, \text{com.}$$

$$\begin{array}{r} 1001 \\ + 011000 \\ \hline 100001 \end{array} \rightarrow 011111 \Rightarrow -(011111)$$

d)
$$\begin{array}{r} 110000 \\ - 010101 \\ \hline 101011 \end{array} \rightarrow 101011, 2, \text{com.}$$

$$\begin{array}{r} 110000 \\ + 101011 \\ \hline 101011 \end{array} \Rightarrow \boxed{011011}$$

Q5// 5.137 ondalık sayısının BCD ve excess-3 kodunu temsil

edin.

$$5.137 \Rightarrow 0101.0001 \ 0011 \ 0111$$

* excess-3

$$\begin{array}{r} 0101.0001 \ 0011 \ 0111 \\ \text{we add } 3 \rightarrow \text{in Bcd} + 0011 \ 0011 \ 0011 \ 0011 \\ \hline 1000.0100 \ 0110 \ 1010 \end{array}$$

$$\Rightarrow 5.137 \text{ excess-3 kolu} \Rightarrow 1000.0100 \ 0110 \ 1010$$

Q6// iftal edildi