

$$a) (100111)_2 = (39)_{10}$$

$$(1 \times 2^5) + (0 \times 2^4) + (0 \times 2^3) + (1 \times 2^2) + (1 \times 2^1) + (1 \times 2^0)$$

$$32 + 0 + 0 + 4 + 2 + 1$$

$$39$$

$$b) (121)_{10} = (1111001)_2$$

$$\begin{array}{r} 121 \div 2 = 60 \text{ R } 1 \\ 60 \div 2 = 30 \text{ R } 0 \\ 30 \div 2 = 15 \text{ R } 0 \\ 15 \div 2 = 7 \text{ R } 1 \\ 7 \div 2 = 3 \text{ R } 1 \\ 3 \div 2 = 1 \text{ R } 1 \\ 1 \div 2 = 0 \text{ R } 1 \end{array}$$

1111001

$$\begin{array}{r}
 \begin{array}{c} 10 \\ \hline 10 \end{array} \quad \begin{array}{c} 1 \\ \hline 1 \end{array} \quad \begin{array}{c} 6 \\ \hline 1 \end{array} \quad \begin{array}{c} 3 \\ \hline 2 \end{array} \quad \begin{array}{c} 2 \\ \hline 1 \end{array} \\
 \hline
 1111001
 \end{array}$$

$$c) (121)_3 = (51)_{16} (1100)_2$$

$$\begin{array}{ccc}
 1 & 2 & 1 \\
 001 & 010 & 001 \\
 5 & 1 &
 \end{array}$$

$$d) (ABC)_{16} = (101010111100)_2$$

$$\begin{array}{ccc}
 A & B & C \\
 1010 & 1011 & 1100
 \end{array}$$