

# Module - 1

## Digital Concepts & Techniques

@@ binary

@@ radix & base

### Decimal to binary

eg: convert  $(12.05)_{10}$  to binary

$$\begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \quad 0 \\ \hline 2 & 3 \quad 0 \\ & 1 \quad 1 \end{array}$$

$$\therefore (12)_{10} = (1100)_2$$

$$\therefore (12.05)_{10} \approx (1100.0010)_2$$

$$0.15 \times 2 = 0 \text{ .3}$$

$$0.3 \times 2 = 0 \text{ .6}$$

$$0.6 \times 2 = 1 \text{ .2}$$

$$0.2 \times 2 = 0 \text{ .4}$$

$$\therefore (.05)_{10} \approx (.0010)_2$$