Computer Organisation & Architecture
Practice Test - 1

1) 1.2345

$0.2345 \times 2 = 0.469$
$0.469 \times 2 = 0.938$
$0.938 \times 2 = 1.876$
$0.876 \times 2 = 1.752$

$(1.2345)_{10} = (1.0011)_2$

-4.567

2	4	$0.569 \times 2 = 1.138$
2	2 - 0	$0.138 \times 2 = 0.268$
	1 - 0	$0.268 = 0.536$

$(4.567)_{10} = (-100.1001)_2$

$(-100.1001)_2 + (1.0011)_2 = -[(100.1001)_2 - (1.0011)_2]$

$$\begin{array}{r} 100.1001 \\ -\ 1.0011 \\ \hline (11.0110)_2 \end{array}$$

$(-100.1001)_2 + (1.0011)_2 = (-11.0110)_2$
$= -1.10110 \times 2^1$

2)

a) $1.0011 \times 2^{-2} \times 1.111 \times 2^{-1}$
$1.0011 \times 1.111 \times 2^{-3}$

$10.00111101 \times 2^{-3}$
1.00011101×2^{-2}

$(1.111) \times (1.0011)$

$$\begin{array}{r} 10011 \\ \times\ 1111 \\ \hline 10011 \\ 10011 \\ 10011 \\ +\ 10011 \\ \hline 10.0011101 \end{array}$$

b) $1.111 \times 2^{-1} \times -1.001 \times 2^{-3}$

$1.111 \times -1.001 \times 2^{-4}$

-10.000111×2^{-4}

-1.000111×2^{-5}

-ve Sign

Since one of the number is -ve

1001

x 1111

1001

1001

1001

+ 1001

10.0 0011 1 1