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COURSE: NUMERICAL
COMPUTING



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Assignment # 02:-

i) 100.875

Convert into binary form?

$$\begin{array}{r|l} 2 & 100 \\ \hline 2 & 50-0 \\ 2 & 25-0 \\ 2 & 12-1 \\ 2 & 6-0 \\ 2 & 3-0 \\ & 1-1 \end{array}$$

$$100 = 1100100$$

$$.875$$

$$.875 \times 2 = 1.75 - 1$$

$$.75 \times 2 = 1.5 - 1$$

$$.5 \times 2 = 1.0 - 1$$

$$.875 = 0.111$$

$$100.875 = 1100100.111$$

ii) Find Exponent = ?
(Biased)

$$1100100.111$$

$$\begin{aligned} \text{Biased exponent} &= 6 + 127 \\ &= (133)_{10} \end{aligned}$$

iii) Find Mantissa? = $(10000101)_2$

$$\boxed{1100100.111} \text{ (ignore left most digit)}$$

100100.111 is Mantissa!

According to IEEE-754 format
in 32-Bits

