Assignment 1

Full Marks: 20
Pass Marks: 10

Que: 1 (3X2=6 Marks)

1.1) Round off the following numbers to two decimal places.
2.3742, 81.255, 52.275, 48.21416

1.2) Round off the following numbers to four significant digits.
0.70029, 0.00022218, 2.36425, 38. 46235

1.3) Calculate (_/102 - _/101) correct to four significant digits.

Que: 2 (2X2=4 Marks)

2.1) if $u = 3v^7 - 6v$, find the percentage error in u at v=1, if the error in v is 0.05.

2.2) if y = (0.31x+2.73)/(x+0.35), where the coefficients are rounded off; find the absolute and relative error in y when $x = 0.5 \pm 0.1$.

Que: 3 (3X2=6 Marks)

If $a = 10.00 \pm 0.05, b = 0.0356 \pm 0.0002, c = 15300 \pm 100$ & $d = \pm 62000 \pm 500$, find the maximum absolute error in:

a) a+b+c+d
b) a+5c-d
c) c^3

Que: 4 (1X4=4 Marks)

If $u = 5xy^2/z^3$,
$\Delta x = \Delta y = \Delta z = 1$ &
$x = y = z = 1$;

Find the maximum value of relative error.
(Hint: Use general error formula)