

Mathematics

Paper: VIII-B

Course: Practical

Full marks: 30.

Time :4 hours

Answer the following questions: (3×10=30)

1. (i) Find a real root of the equation $x^3 - 9.5x^2 - 8.6x - 21.3 = 0$ by fixed point iteration method correct to six significant figures.

OR,

(ii) Values of $\tan x$ for $0.10 \leq x \leq 0.30$ are given in the following table:

x	0.10	0.15	0.20	0.25	0.30
y=tanx	0.1003	0.1511	0.2027	0.2553	0.3093

Find $\tan(0.50)$.

2. (i) Calculate Correlation Coefficient between X and Y from the following table:

X	91	97	108	121	67	124	65	73	111	53
Y	71	75	69	97	70	91	39	61	80	47

OR,

(ii) A random sample of size 10 was drawn from a normal population with an unknown mean and a variance of 44.1 . If the observations are 65, 71, 80, 76, 78, 82, 68, 72, 65, 81 , obtain a (i) 95% and (ii) 99% confidence interval the population mean.

3. (i) Write a C program to find the roots of the equation $x^3-8x-4=0$ Newton Raphson method corrected to 6 decimal places.

OR,

(ii) Write a C program to find the value of $y(1.1)$ from:

$dy/dx = 3x+y^2$ using Runge-Kutta method corrected to 6 decimal places (take $h= 0.1$)