

MATHEMATICS --- SEM VI

Q1 Evaluate $\sqrt{12}$ corrected to four decimal places by Newton-Raphson method.

Q 2. Use Bisection method find 2nd root of $x^2 + 3x + 1 = 0$.

Q3 Explain four scope of operation research .

Q4 Use Lagrange interpolation method find $f(10)$

x	5	6	9	11
y	12	13	14	16

Q 5 .using Simpson 1/3 rule find $\int_0^6 \frac{dx}{1+x^2}$.

Q6 use north west corner rule solve the transportation problem

TO

		I	II	III	IV	SUPPLY	
FROM	A	13	11	15	20		2
	B	17	14	12	13		6
	C	18	18	15	12		7
DEMAND		3	3	4	5		15

Q.7 Define 'Absolute error' and 'Relative error'. An approximate value of π is given by 3.1428571 and its true value is 3.1415926. Find absolute and relative errors.

Q8. Evaluate $\sqrt{15}$ corrected to four decimal places by Newton-Raphson method.

Q9 Prepare divided difference table for data

X	4	5	7	10	11	13
y	48	100	294	900	1210	2028

Q10 Using Lagrange formula find $f(10)$

X	5	6	9	11
Y	12	13	14	16

Q11 Apply Newton divided difference formula find $f(8)$

X	1	2	4	7	12
y	22	30	82	106	216

Q12. Write newton forward interpolation formula.

Q13. Value of $\Delta^2 f(x)$

Q14 The value of $\nabla^2 f(a + 2x)$

Q15. The value of $(1 + \Delta)(1 - \nabla)$.

Q16 . Prove $1 + \Delta = E$

Q17. Write about truncation error.