B.Sc. Semester - V
HOME ASSIGNMENT
2024 - 25 .

MATHEMATICS (DSE)
NUMERICAL METHODS

MM - 20

Section A

Solve any two question (2x2 = 4)

1. Define interpolation and extrapolation.
2. Write Newtons forward difference interpolation formula.
3. Write Newtons Backward difference interpolation formula.

Section B

Solve any two question (2x3 = 6)

4. Given sin45 = 0.7071, sin50 = 0.7660, sin55 = 0.8192, sin60 = 0.8660 find sin52 by using any method of interpolation.
5. Find the cubic polynomial which takes the following values.

x	0	1	2	3
y	1	0	1	10

6. Find the polynomial which fits the data in the following table.

x	3	5	7	9	11
y	6	24	58	108	174

Section C

(1x10 = 10)

7. Estimate the sale for 1966 Using the following table

Year	1931	1941	1951	1961	1971	1981
Sale in thousand	12	15	20	27	39	52

8. The length of the day was 12 hours on march 19th, 14 hours on April 18th, and 15 hours 40 minutes on may 18th estimate:
(a) The length of the day on may 3rd.
(b) The mean length of the day during the period march 19th to may 18th.