

# NUMERICAL ANALYSIS

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**B.A./B.Sc. III  
Semester-V**

$$\begin{aligned} \phi_P - (-\phi_P) &= \int_{ABPQ} \mathbf{q} \cdot d\mathbf{r} - \int_{ABP} \mathbf{q} \cdot d\mathbf{r} \\ \phi_P &= \left[ \int_{ABP} + \int_{PQ} - \int_{ABP} \right] \mathbf{q} \cdot d\mathbf{r} = \int_{PQ} \mathbf{q} \cdot d\mathbf{r} \\ &= \mathbf{q} \cdot \int_{PQ} d\mathbf{r} \text{ as } \mathbf{q} \text{ is constant along } PQ \\ &= \mathbf{q} \cdot \boldsymbol{\eta} = \mathbf{q} \cdot \mathbf{a}_{PQ} \end{aligned}$$

vector along  $PQ$  and so  $\mathbf{a}_{PQ} = \vec{PQ} = \boldsymbol{\eta}$

$\phi_P = -\mathbf{q} \cdot \mathbf{a}$   $\mathbf{q}$  is constant along  $PQ$

directional derivative of  $\phi$  along

# NUMERICAL ANALYSIS

*For B.A./B.Sc. III Year (Fifth Semester) Students of  
K.U., M.D.U., C.D.L.U. and All Haryana Universities*

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WITH BEST COMPLIMENTS FROM:

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ASM

**SPECIMEN COPY**



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*A Sister Concern of Pragati Prakashan, Meerut*

## 1. FINITE DIFFERENCE OPERATORS

1. Definitions 1
2. Finite Difference Operators 1
3. Finite Differences 2
4. Forward Differences 2
5. Forward Difference Table 2
6. Backward Differences 4
7. Backward Differences Table 4
8. Central Differences 5
9. Properties of the Operators  $E$  and  $\Delta$  7
10. Relation Between the Operators 7
11. Prove the Following Identites 8
12. Relations Between the Various Operators 9
13. Differences of a Polynomial 13
14. Method to Find One or More Missing Terms 14
15. Effect of an Error in a Difference Tabular Values 17
- Exercise 19

## 2. INTERPOLATION WITH EQUAL INTERVALS

21-34

1. Introduction 21
2. Newton Gregory Forward Interpolation Formula 22
3. Newton-Gregory Backward Interpolation Formula 23
- Exercise 33

## 3. INTERPOLATION WITH UNEQUAL INTERVALS

35-60

1. Introduction 35
2. Divided Differences 35
3. Properties of Divided Differences 36
4. Newton's Divided Differences Formula for Unequal Intervals 38

7.      

Exercise 171

**9. NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS** 175-216

1. Introduction 175
  2. Solution of a Differential Equation 175
  3. Single Step Methods 175
  4. Multiple Step Methods 175
  5. Picard's Method 175
  6. Taylor's Series Method 182
  7. Euller's Method 186
  8. Modified Euler's Method 190
  9. Runge-Kutta Method 196
  10. Predictor Corrector Methods 203
  11. Milne-Simpson's Method 203
  12. Adams-Bash Forth Method 208
- Exercise 215

**PRACTICALS IN C**

**QUESTION PAPERS**

**LOG & ANTILOG TABLE**

217-240

241-258

259-262