**Algebraic & Transcedental equations**

1. Theorems, definitions.
2. Bi – section Method.
3. Regula – Falsi Method.
4. Newton Raphson Method.
5. Fixed point Iteration Method.
6. Gauss Elimination Method by partial pivoting
7. Gauss Jordan Method
8. Jacobi – Iteration Method
9. Gauss Seidal Method
10. Decomposition Method

**Finite differences & Interpolation**

1. Properties of forward difference.
2. Construct forward difference tables
3. Properties of del.
4. Questions on constructing forward difference tables
5. Questions of Properties of del.
6. Relation between operators
7. Problems on interpolation
8. Method of separation of symbols
9. Questions in between
10. Newton Gregory Backward Interpolation
11. Interpolation with unequal intervals
    1. Lagrange interpolation formula.
    2. Newton’s divided difference formula.
12. Find polynomial of lowest degree which assumes

**Numerical Differentiation**

Questions

**Numerical Integration**

1. Newton – Cote’s Quadrature formula
   1. Trapezeidal rule
   2. Simpson’s 1 – 3rd rule.
   3. Simpson’s 3 – 8th rule.
   4. Weedle’s rule
2. Evaluate with all 4 rules

**Numerical Solutions of Different equations**

1. Picards Method
2. Taylor Series Method of solving I.VP
3. Euler’s method, euler’s modified method
4. Rangi – kutta Second order
5. Rangi – kutta 4th order