Differential Equations-1

- 1. Identify and classify different types of differential equations including exact and non-exact differential equations.
- 2. Solve exact differential equations using integrating factors and determining the solutions.
- 3. Understand and apply Clairaut's equations to solve differential equations.
- 4. Solve linear homogeneous differential equations using appropriate methods.
- 5. Solve second-order differential equations using various techniques including method of undetermined coefficients and variation of parameters.
- 6. Solve higher order homogeneous differential equations using characteristic roots and reduction of order.
- 7. Solve higher order non-homogeneous differential equations using particular solutions and the method of undetermined coefficients.

