

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

Bachelor of Engineering Subject Code: 3130005

Semester – III

Subject Name: Complex Variable & Partial Differential Equations

MID SEMISTER EXAM SYLLABUS

1. Polar Form of Complex Numbers, Powers and Roots

Complex Variable – Differentiation : Differentiation, Cauchy-Riemann equations, analytic functions, harmonic functions, finding harmonic conjugate; elementary analytic functions (exponential, trigonometric, logarithm) and their properties.

2. Complex Variable - Integration

Contour integrals, Cauchy-Goursat theorem (without proof), Cauchy Integral formula (without proof), Liouville's theorem and Maximum-Modulus theorem (without proof).

3. Partial differential equations

First order partial differential equations, solutions of first order linear and nonlinear PDEs, Charpit's Method

4. Homogeneous and nonhomogeneous linear partial differential equations

Solution to homogeneous and nonhomogeneous linear partial differential equations second and higher order by complementary function and particular integral method. Separation of variables method to simple problems in Cartesian coordinates, second-order linear equations and their classification.