Transform And Partial Differential Equations

06/06/16

Unit - I

Z - Transforms and Difference Equations.

Z - transforms - Elementary properties - Inverse Z-transforms - Convolution theorem - Formation of difference equations - solution of difference equations using Z-transform.

Unit - II

Fourier Transforms

Fourier integral theorem (without proof) - Fourier transform pair - Sine and cosine transforms - properties - Transforms of simple functions - Convolution theorem - Parseval's identity

Unit - III

Fourier Series

Dirichlet's conditions - General fourier series - odd and even functions - Half range sine series - Half rang

Cosine series - Parseval's identity - Harmonic analysis - Lagrange's linear equal

Unit - IV

Partial Differential equation

Formation of PDE - Solution of standard types of first order PDE - Lagrange's linear equation - Homogeneous linear PDE of several and higher order with constant co.eff

Unit - V

Application of PDE

Solution of one dimensional wave equation - one D eqn of heat conduction - steady state solution of 2D of heat conduction - Fourier series - solutions in Cartesian Co ordinates