Paper Code: PS04EMTH07	Total Credit: 4
Title Of Paper: Theory of Partial Differential Equations	

Unit	Description in detail	Weighting (%)
I	First order equations - Cauchy problem for quasi-linear equation - weak solution of - non-linear first order PDE - method of characteristics.	25%
II	Cauchy problem for higher order equation - classification of second order equation by characteristics - linear equations and generalized solutions.	25%
III	Distributions - convolution and fundamental solutions.	25%
IV	Wave equation - spherical means - energy methods. Laplace equation - existence theory -eigen value and eigen functions. Heat equation - existence and uniqueness - regularity.	25%

Basic Text & Reference Books:-

➢ R.C. McOwen, Partial Differential equations, Pearson Education, 2004.
➢ Fritz John, Partial Differential Equations, Narosa, 1979.