

Curriculum Plan : B.A.(P), III Sem (II Year)

Theory of Equations & Symmetries

Ms. Garima Gaur Assistant Professor Department of Mathematics Kalindi College (University of Delhi) Delhi- 110008 Mobile: 9953227989 E- mail: garimagaur@kalindi.du.ac.in			Marks Distribution	Theory	90 Marks
			Classes Assigned	Internal Assessment	30 Marks
				Lectures	3 lectures per week
				Practical	
References		1. Burnside, W.S., & Panton, A.W. (1979). The Theory of Equations (11th ed.). Vol. 1. Dover Publications, Inc. (4th Indian reprint. S. Chand & Co. New Delhi). 2. Dickson, Leonard Eugene (2009). First Course in the Theory of Equations. John Wiley & Sons, Inc. The Project Gutenberg eBook: http://www.gutenberg.org/ebooks/29785			
	Week	Topics			
	1st week	General properties of polynomials and equations.			
	2nd week	Statement of the Fundamental theorem of algebra and its consequences.			
	3rd week	Theorems on imaginary, integral and rational roots.			
	4th week	Descartes’ rule of signs for positive and negative roots.			
	5th week	Relations between the roots and coefficients of equations.			
	6th week	Applications to solution of equations when an additional relation among the roots is given.			
	7th week	De Moivre’s theorem for rational indices, the nth roots of unity and symmetries of the solutions.			
	8th week	Cardon’s method of solving cubic equations.			
	9th week	Descartes’ method of solving biquadratic equations.			

	10th week	Elementary symmetric functions and symmetric functions of the roots of an equation.	
		SEMESTER BREAK	
	11th week	Newton's theorem on sums of the like powers of the roots.	
	12th week	Computation of symmetric functions.	
	13th week	Transformation of equations by symmetric functions and in general.	
	14th week	Revision	
	15th week	Revision	
	16th week	Discussion of Important Questions	