Curriculum Plan: B.Sc. (Phy. Sc.) (Semester III)- Combinatorics
2025-26 Odd Sem

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			Marks Distribution	**Theory** - 90
				Internal Assessment- 30 **Tutorial – 40**
			Classes Assigned	**Lectures: 2 per week**
	References	Essential Readings 1. Sane, Sharad S. (2013). Combinatorial Techniques. Hindustan Book Agency (India). 2. Tucker, Alan (2012). Applied Combinatorics (6th ed.). John Wiley & Sons, Inc.		
	Week	**Topics**		
	1st week	Generating functions: Generating function models		
	2nd week	Calculating coefficients of generating functions		
	3rd week	Polynomial expansions, Binomial identity		
	4th week	Exponential generating functions. Recurrence relations		
	5th week	Recurrence relation models.		
	6th week	Divide-and-conquer relations		
	7th week	Solution of linear recurrence relations, Solutions by generating functions		
	8th week	Revision of Unit 2 and Class test		
	9th week	Partition theory of integers		
	10th week	: Ordered partition, Unordered partition		
	11th week	Ferrers diagram, Conjugate of partition		
	12th week	Self-conjugate partition		
	13th week	Durfee square		
	14th week	Euler's pentagonal theorem.		
	15th week	Revision of last Unit and Class Test		