Paper Code: PS02SMTH21	Total Credit: 2
Title Of Paper: Mathematics	

Unit	Description in detail	Weighting (%)
I	**Vectors and Matrices** Vectors in Rn, dot product and norm. Matrix addition and scalar multiplication, Matrix multiplication, transpose of matrix, square matrices: Diagonal, upper and lower triangular, symmetric, skew symmetric, orthogonal matrices. Determinants of matrices up to order 3.	25%
II	**Graph Theory** Graph, multigraph, degree of vertex, paths, connectivity, subgraph, connected components, cut points, bridges, Special graphs: complete, regular and bipartite graphs, matrices and graphs.	25%
III	**Planar Graphs and Trees** Planar graphs, Maps and regions, Euler's formula, Nonplaner graphs, coloured graphs, colors and maps, trees.	25%
IV	**Elementary Data Analysis** Discrete and continuous frequency distribution, cumulative frequency distribution, graphical representation, Measures of central tendency: Mean, Median, Mode.	25%

Basic Text & Reference Books :-

1. S.Lipschutz and Marc Lars Lipson : Discrete Mathematics, Schaum's series (International edition,1992).
2. Vinay Kumar: Discrete Mathematics (BPB Publication, First edition - 2002)
3. S. C. Gupta, Fundamentals of Statistics, Himalaya Publishing House, 2004