SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Mathematics)
Semester: VI
Syllabus with Effect from: November/December-2013

Paper Code: US06CMTH05	Total Credit: 3
Title Of Paper: Graph Theory	

Unit	Description in detail	Weighting (%)
I	Graph , Applications of graph , Finite and infinite graph , Incidence and Degree , Isolated vertex , Pendant vertex and null graph , Isomorphism , Sub graphs , Walks , Paths and circuits , Connected and disconnected Graphs Components .	
II	Euler graphs , Operation on graph , More on Euler graphs ,Hamiltonian paths and circuits , Trees and their properties , Pendant vertices in a tree , Distance and centers in a tree , Counting trees .	
III	Spanning Trees , Fundamental circuits , Finding all spanning trees of a graph , Cut-sets and their properties , All cut-sets in a graph ,Fundamental circuits and cut sets , Connectivity and separability , Network flows .	
IV	First and second isomorphisms , Planer graphs , Kuratowski's Two graphs , Different representations of a planar graphs , Detection of Planarity geometric and combinatorial dual.	

Recommended Texts:

- Narsingh Deo, Graph theory with application to engineering and Computer science, Fourth printing, prentice Hall of India, 1987. Chapter 1 (except 1.6), chapter 2 (except 2.3,2.10), chapter 3 (except 3.

Basic Text & Reference Books:-

- J.Clark and A.D.Holton, A ¯rst look at Graph Theory, First Indian Reprint. Allied Publishers,1995.
- D.B.West, Introduction to graph theory, prentice Hall of India, New Delhi, 1999.