## SARDAR PATEL UNIVERSITY Programme & Subject: B.Sc (Mathematics) Semester: V Syllabus with Effect from:June-2013

Paper Code: US05CMTH02	Total Credit: 3
Title Of Paper: Real Analysis - II	

Unit	Description in detail	Weighting (%)
Ι	Sequences ; bounds of a sequence ; convergence of sequences ; Limit point of	
	a sequence ; Bolzano-Weierstrass theorem ; Limit superior and Limit inferior	
	of a sequence ; Convergent and divergent sequences ;Cauchy's general	
	principle of convergence ; Cauchy sequences ; Algebra of sequences ;	
	Monotonic sequences	
II	Infinite series ; Definition ; A necessary condition for convergence; Cauchy'	
	general principle of convergence ; some preliminary theorems ; Positive term	
	series ; Comparison tests for positive term series ; Cauchy' root test ;	
	D'Alembert test.	
III	Functions of several variables: Explicit and implicit function ; The	
	neighbourhood of a point ; The limit of a function ; Repeated limits ; Conti-	
	nuity ; Partial derivatives; Change of variables ;	
IV	Taylor's theorem and Maclaurin's theorem for function of two variables;	
	Extreme values of functions of two variables.	

## **Recommended Texts :**

 S.C.Malik, principles of Real Analysis, Revised Edition, New Age International, New Delhi, 2000. Chapter : 3, 4( Except article 6, 7, 8, 9, 10 ),11 ( Except article 4,5,6,7,11 ).

## Basic Text & Reference Books:-

S.C.Malik and Savita Arora, mathematical Analysis, second Edition New Age International Pvt. Ltd., New Delhi 2000.

