

SARDAR PATEL UNIVERSITY
Programme: BSC (BIOTECHNOLOGY)
Semester: V
Syllabus with effect from: June 2012

Paper Code: US05CBIT02	Total Credit: 3
Title Of Paper: Molecular Techniques	

Unit	Description in detail	Weighting (%)
1	Electrophoresis - Principle, methodology and factors affecting protein and nucleic acid electrophoresis. PCR- Introduction, Principle, basic methodology, factors affecting and application, site-directed mutagenesis.	
2	Nucleic acid hybridization, colony and plaque hybridization, Southern, Northern and western blotting, Dot-Blot, differential screening. In situ hybridization, FISH (radioactive and non radioactive detection of hybridization), Autoradiography.	
3	Molecular markers - RFLP, RAPD, AFLP, SNP, Satellite DNA. DNA Fingerprinting - Process and its application. Construction of c-DNA library & genomic DNA library.	
4	DNA sequencing - chain termination, chemical cleavage and automated. DNA Foot printing- types and application. In vitro transcription and in vitro translation, various systems and application.	

Basic Text & Reference Books:

- From genes to clones - Ernst winnaker
- Genetic engineering - Old & Primrose; Biotechnology and genomics - P K Gupta
- Genes and cloning - T A Brown ; A text book of biotechnology - R C Dubey

