

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

Paper Code: US06CBIT01	Total Credit: 3
Title Of Paper: Recombinant Dna Technology And Applications	

Unit	Description in detail	Weighting (%)
1	Recombinant DNA technology - Introduction and steps involved, restriction enzymes, nucleic acid modifying enzymes-klenow fragment of DNA pol-I, alkaline phosphatase, polynucleotide kinase, reverse transcriptase, DNA ligase, DNase-1, RNase, methylase, exonuclease.	
2	Prokaryotic cloning and expression vectors- Bacteriophage-λ vectors- replacement & insertional vectors cosmid, phagemid. BAC.	
3	Eukaryotic cloning and expression vectors-yeast vectors-YEP, YIP, YCP, SV-40, retroviral vector, MAC; plasmid based vectors- co-integrate & binary vectors. Introduction into eukaryotic expression system.	
4	Introduction to Bioinformatics. Significance of Bioinformatics in Biological Science- Biological Databases (Accession codes & identifications) Examples of Biological.Database (A) Nucleotide sequence Databases (B) Protein sequence databases (EMBL, Gene Bank). Primary Nucleotide sequence, databases, protein sequences, databases).	

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

