

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

Paper Code: US06CBCH01	Total Credit: 3
Title Of Paper: Molecular Biology- II	

Unit	Description in detail	Weightage (%)
I	Regulation of Gene Expression Principle of gene regulation Definition : constitutive enzyme, induced enzyme, constitutive gene expression, inducible and induction, repressible and repression activators, repressors, operon Lac operon hypothesis Tryptophan operon hypothesis Regulation of gene expression in eukaryotes Transcriptionally active chromatin Dna binding activators and co-activators	25%
II	Gene Mutation & Repair Definition: mutation, hotspots, mutagens, Base analogues Agents modifying purines and pyrimidine, Agents producing distortion in DNA Thymine dimer, X-rays Mismatch repair, Base excision repair Nucleotide excision repair, Direct repair : UV repair system in e-coli	25%
III	Recombinant Dna Technology & Genetic Engineering Purification of DNA, Preparation of total cell DNA Preparation of Plasmid DNA cloning vector (in Brief) : Plasmid, Lambda phase, Cosmid, Phagemids, Ti-plasmids, PBR-322, YAC, BAC Restriction Endonuclease: its types and Functions.	25%
IV	Applied Genetics Detection of recombinant clone, Use of gene probes Southern blotting, Northern blotting Western blotting, PCR : method and applications RFLP (brief), DNA finger printing : method and application Gene library (brief), Gene sequencing Sanger's method, Maxam and gilbert's method	25%

Basic Text & Reference Books:

- Principle of Biochemistry-Lehninger
- Gene-Levin-8
- Molecular Biology of the Gene-Watson et al
- Gene Cloning by T.A. Brown
- Elements of Biotechnology by R. K. Gupta.

