

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

Paper Code: US03CBIT01	Total Credit: 3
Title Of Paper: Fundamentals of Biotechnology - I	

Unit	Description in detail	Weighting (%)
1	Structure and functions of different forms of DNA (Watson and Crick model), Chargaff's rule, RNA (mRNA, tRNA & rRNA and snRNA). Plasmid DNA Definition and basic Properties of natural plasmids. Genetic code, Wobble hypothesis.	
2	Introduction to immune system, types of immunity (innate and acquired, active and passive, humoral and cell-mediated). Immune response- primary and secondary.	
3	Antigen - Definition, properties and classification, epitopes and haptens, Antibody - Definition, structure, type and function, blood groups types, ABO and Rh system.	
4	Replication - definition, property and features of prokaryotic DNA replication (Enzymes and proteins involved in replication). Unidirectional and bidirectional replication. Initiation, elongation and termination of replication, Closed clamp and Rolling Circle model of replication. Significance of replication.	

Basic Text & Reference Books:

- Biotechnology - Expanding Horizon - B D Singh (1st Edition)
- Biochemistry - Harper
- Molecular Biology of gene - Watson, Hopkins & Roberts (4th Edition)
- Genomics - T A Brown (3rd Edition)
- Immunology - Janis Kuby
- Principles of Biochemistry - Lehninger and Cocks (4th Edition)
- Elements of biotechnology - P.K. Gupta
- Text book of Biotechnology - R C Dubey

