

SARDAR PATEL UNIVERSITY
Programme: BSC (BIOTECHNOLOGY)
Semester: IV
Syllabus with effect from: November 2012

Paper Code: US04CBIT02	Total Credit: 3
Title Of Paper: Applications of Biotechnology - II	

Unit	Description in detail	Weighting (%)
1	Law of inheritance. Mendel's laws of heredity, monohybrid and dihybrid crosses. Extrachromosomal inheritance - Mechanism (one suitable example).	
2	Introduction to gene cloning, insertional inactivation, preparation of competent cells. Construction of recombinant DNA and transformation. Visual selection by antibiotic, and blue - white selection	
3	Method and significance of embryo, anther, pollen, ovary, ovule meristem culture in detail. somatic embryogenesis and somatic organogenesis	
4	Protoplast isolation and fusion methods, screening and selection of somatic hybrids, cytoplasmic hybrids - methods of fusion and significance of somatic hybrids and cybrid with examples.	

Basic Text & Reference Books:

- Plant tissue culture - Kalyan Kumar De (1st Edition)
- Plant tissue culture and organ culture - Reinert and Bajaj (1st Edition)
- Biotechnology in crop improvement - Harvinder Singh Chawla (1st Edition)
- Plant Tissue culture - Rajdhan
- Biotechnology - B D Singh
- Genetics - P K Gupta
- Cell biology, genetics, molecular biology, evolution and ecology - P.S. Verma and R.S. Agarwal

