

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

Paper Code: US03CBIT02	Total Credit: 3
Title Of Paper: Applications of Biotechnology - I	

Unit	Description in detail	Weighting (%)
1	Plant tissue culture - history, pros and cons of plant tissue culture, sterilization techniques. Composition and preparation of MS medium, Totipotency - its concept and introduction to callus growth (batch and continuous)	
2	Animal and cell tissue culture - History, introduction, laboratory requirements, media - artificial and natural, cell culture and cell lines. Potential and applications of stem cells	
3	Introduction to transgenic animals - technique (physical and vector methods), applications with examples (mice, fish and sheep).	
4	Biofertilizers - types (bacterial, fungal and algal) and significance. Mushroom cultivation - process and significance. Single cell proteins - production and application. Biopesticides and Bioinsecticides	

Basic Text & Reference Books:

- Plant tissue culture - Kalyan Kumar De (1st Edition)
- Plant tissue culture and organ culture - Reinert and Bajaj (1st Edition)
- Animal Cell Culture - Freshney
- 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

