

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

<b>Paper Code:</b> US06CBIT02	<b>Total Credit: 3</b>
<b>Title Of Paper:</b> Animal Biotechnology	

Unit	Description in detail	Weighting (%)
1	Overview and basic steps of animal cell culture, Transformation of animal cells for evolution of continuous cell lines, Stem cells - Basic properties, Types and applications, Culture method of Haematopoietic stem cells.	
2	Hybridoma technology- Introduction and steps for construction of hybridoma cell line, production of MAbs through hybridoma, genetically engineered MAbs vector and stem cell method, Types and application of MAbs.	
3	Organization of Human Genome. HGP and its significance. Introduction to genetic disorders (sickle cell anaemia, Alzheimer, cystic fibrosis and muscular dystrophy) and their cure by gene therapy.	
4	Transgenic technology- Introduction, method of transfection (microinjection, electroporation, retroviral, Ca-phosphate co-precipitate methods), introduction of knockout mice and its significance. Inducible expression system, gene inhibition and transgenic technology for functional genomics.	

**Basic Text & Reference Books:**

- Animal cell culture - Freshney
- Gene manipulation - G.B. Old & Primrose
- Molecular Biotechnology - Glick & Galston
- Genetics - Clug & Cummings
- Gene Cloning - T.A. Brown.
- Biotechnology and genomics - P K Gupta

