

# **MAHATMA GANDHI UNIVERSITY**

## **Dept. of Biotechnology**

### **CBCS SYLLABUS**

#### **SEMESTER - IV**

**(CBCS-INTER-DISCIPLINARY PAPER)**

### **APPLICATIONS OF BIOTECHNOLOGY**

#### **UNIT I- RECOMBINANT DNA TECHNOLOGY**

- 1.1. Cloning
- 1.2. Enzymes
- 1.3. Vectors
- 1.4. Techniques Employed-PCR, Transformation & Blotting
- 1.5. Human Genome Project

#### **UNIT II- PLANT BIOTECHNOLOGY**

- 2.1. Plant Tissue Culture-Media, Explant, Initiation of Callus
- 2.2. Micro-propagation
- 2.3. Product of Commercial Products
- 2.4. Transgenic Plants and Crop Improvement

#### **UNIT III- ANIMAL BIOTECHNOLOGY**

- 3.1. Animal Tissue Culture
- 3.2. Development, Cloning and use of Transgenic Animals
- 3.3. Stem Cells & Their Applications

#### **UNIT IV- INDUSTRIAL BIOTECHNOLOGY**

- 4.1. Fermentation
- 4.2. Screening and Strain Development
- 4.3. Microbial Products
  - . Dairy Products
  - . Beverages
  - . Antibiotics
  - . Vitamins

## RECOMMENDED BOOKS

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|--------------------------------------|------------------------|
| 1. Bioinformatics                    | Rastogi                |
| 2. Bioinformatics                    | David W Mount          |
| 3. Plant Biotechnology               | Chandra Karthick       |
| 4. Text book of Animal Biotechnology | B. Singh, S. K. Gautam |
| 5. Gene Cloning and DNA Analysis     | Terry Brown            |