

MAHATMA GANDHI UNIVERSITY

Dept. of Biotechnology

CBCS SYLLABUS

SEMESTER - III

(CBCS-INTER-DISCIPLINARY PAPER)

CONCEPTS OF BIOTECHNOLOGY

UNIT I- CELL BIOLOGY

- 1.1. Cells as basic units of living organisms
- 1.2. Ultra structure of Prokaryotic Cell and Eukaryotic Cell
- 1.3. Organelles: Mitochondria, Chloroplast, Endoplasmic Reticulum, Golgi apparatus, Lysosomes and Vacuoles.
- 1.4. Cell cycle & Cell Division
- 1.5. Abnormalities of Cell Cycle

UNIT II- MICROBIOLOGY AND IMMUNOLOGY

- 2.1. Classification of Microorganisms
- 2.2. History and Scope of Microorganisms
- 2.3. Microbial Diseases, Diagnosis, Preventive Measures
- 2.4. Immune system – Innate and Adaptive, Auto Immune Diseases
- 2.5. Vaccines

UNIT III- GENETICS AND MOLECULAR BIOLOGY

- 3.1. Basics Genetics
- 3.2. Modern Genetics, Concepts of Chromosome and Gene
- 3.3. Genetic Material- DNA, RNA
- 3.4. Genetic Disorders, Karyotyping, Genetic Counselling
- 3.5. Mutations & Cancer

UNIT IV- BIOINFORMATICS

- 4.1. Introduction to Bioinformatics
- 4.2. Bioinformatics Databases
- 4.3. Tools used in Bioinformatics
- 4.4. Applications of Bioinformatics

RECOMMENDED BOOKS

1. Genetics Gardner (Macmillan Press)
2. An introduction to Genetic Analysis Griffith et.al.,- Freeman and Company
3. Cell Biology S.C. Rastogi (New Age International (P) Ltd)
4. The Cell Cooper
5. Genetics B.D. Singh
6. Cell and Molecular Biology De Robertis
7. Cell and Molecular Biology Lodish
8. Cell Biology and Genetics P.K Gupta
9. Biotechnology H. K Das
10. Biotechnology-1 R.S. Setty and G. R. Veena
11. Biotechnology-II R.S. Setty and V. Sreekrishna
12. Immunology Ivan Roitt
13. Immunology Kuby
14. Industrial Biotechnology Casida, Rastogi