

**Class XI**  
**Subject: Bio Technology**  
**Syllabus**

<b>Month</b>	<b>Name of Book</b>	<b>Topics &amp; Chapters</b>	<b>Theory Period</b>	<b>Revision Periods</b>	<b>Practical</b>
April		Unit_1 Introduction to Biotechnology Historical perspectives, production strategies in biotechnology. Quality control, Good Manufacturing practices, Product Safety, Good Laboratory Practices, Intellectual property, Global market, Public Perception. Biotechnology in India and Global Trends.	20	4	16
May		Unit-II Biomolecules Chapter-1 Building blocks of biomolecules - Carbohydrates – Sugars and their derivatives, building block of proteins- Amino Acids, Building block of lipids- simple fatty Acid, Sphingosine, Glycerol and cholesterol, Building block of nucleic acid – Nucleotides. Biochemical Transformations.	20	4	16
June					
July		Chapter-2 Structure and function of macromolecules- carbohydrates – The energy givers, proteins- The performers, Enzyme- The catalysts, Lipids and Biomembrane – The Barrier. Nucleic acid- The Managers. Biochemical Techniques Techniques based on molecular weight or size. Techniques based on polarity or charge Techniques based of spectroscopy Techniques based on solubility	20	4	16
August		Unit 3 : Chapter-1 Principles of Genetics. Historical perspective, Multiple alleles, Linkage and crossing over Genetic mapping, gene interaction, sex linkage, sex linked inheritance, extra nuclear inheritance , Quantitative inheritance, genes at population level,	19	5	16
September		Unit 3: Chapter 2: Discovery of DNA as genetic material, Mutations, DNA Repair, Genetic Disorders Genome function Genome organisation, DNA Replication , fine structure of genes, from gene to protein, Transcription, The basic processes, Genetic code, Translation, Regulation of Gene Expression	19	5	16

October		Unit 4: Cell and Development Chapter -1 Basic Unit of Life Cell Structure and components, Tissues and organs, stem cells Biodiversity Organisation of life.	19	5	16
November		Chapter-2 Cell Growth and Development Cell division, Cell cycle, Cell communication, movement, Nutrition, Gaseous exchanges, internal Transport, Maintaining the internal environment, reproduction, in vitro fertilization Animal and plant development, Immune Response in Animals, Programmed Cell Death, Defense Mechanism in plants	19	5	16
December		Cellular Techniques Microscopy, Cell fractionation, Cell sorting, Cell growth determination.	15	3	12
Jan		Genetical Techniques Chromosomal Techniques, Mutagenic Techniques, Recombination in bacteria, Breeding methods in plants, pedigree analysis in Human	18	6	16
February		Revision			
March		Exam			