CLASS- XII (2021-22)

COURSE STRUCTURE (THEORY)

Units	Term-I	Marks
Unit-V	Protein and Gene Manipulation	35
	Term-II	
Unit-V	Protein and Gene Manipulation (Continued)	05
Unit-VI	Cell Culture and Genetic Manipulation	30
	Practicals	
	Term-I	15
	Term-II	15
	Total	**100**

TERM-I

Unit-V Protein and Gene Manipulation **35 Marks**

Chapter-1: Recombinant DNA Technology

Introduction, Tool of DNA technology, Making of rDNA molecule, Introduction of recombinant DNA into host cells, Identification of recombinants, Polymerase Chain Reaction (PCR), DNA Sequencing.

Chapter-2: Protein Structure and Engineering

Introduction to the world of proteins, Structure-function Relationship in proteins, Characterization of proteins, Protein based products, Designing proteins (Protein Engineering)

Chapter-3: Genomics, Proteomics and Bioinformatics

Gene prediction and counting, Genome similarity, SNPs and Comparative genomics, Functional genomics, Proteomics,

TERM-II

Unit-V Protein and Gene Manipulation

Information sources, Analysis using bioinformatics tools. 05 Marks

Unit-VI Cell Culture and Genetic Manipulation **30 Marks**

Chapter-1: Microbial Cell Culture and its Applications

Introduction, Microbial nutrition and culture techniques, Measurement and kinetics of microbial growth, Isolation of microbial products, Strain isolation and improvement, Applications of microbial culture technology.

Chapter -2: Plant Cell Culture and Applications

Introduction, Cell and tissue culture techniques, Applications of cell and tissue culture, Transgenic plants with beneficial traits, Biosafety of transgenic plants