

DAV PUBLIC SCHOOL SRESHTHA VIHAR, DELHI
SYLLABUS (23-24)
BIOTECHNOLOGY
CLASS XII

Learning objectives.

- 1) To enhance the applications of Science and Technology for human welfare.
- 2) To Explore Modern Biotechnology processes encompass a wide range of new products such as antibiotics, vaccines, monoclonal antibodies and many more.
- 3) To Understand developments in recombinant DNA technology have yielded numerous new useful products in the fields of healthcare and agriculture.
- 4) To Familiarizing the learners with the fundamental concepts, basic techniques and their applications of culturing.
- 5) To Developing skills and make the learners competent enough of experimental work from the knowledge gained through the study of the prescribed practicals.

The prescribed syllabus is expected to:

- help the learners know and understand basic facts and concepts of the subject at elementary stage.
- expose the students to different basic processes and basic techniques used in Biotechnology.
- familiarize the learners to understand the relationship of the subject to health, nutrition, environment, agriculture and industry, etc.
- develop conceptual competence in the learners so as to cope up with professional courses in future career.
- acquaint students with different applications of Biotechnology in everyday life.
- develop an interest in students to study Biotechnology as a discipline.

CURRICULUM DIVISION:

UNIT Test -1

Chapter – 1 Recombinant DNA technology

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

TERM-1

Chapter 1- Recombinant DNA technology

Introduction, Tool of Recombinant DNA technology, Making 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, Information sources, Analysis using bioinformatics

UNIT TEST -2

Chapter 4- 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.

TERM -2

Chapter 5- Plant cell culture technology

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

Chapter 6- Animal cell culture technology

Introduction, Animal cell culture techniques, Applications of animal cell culture, Stem cell technology

PRE BOARD EXAM

All chapters mentioned above.