BTY555:BIOTECHNOLOGY LABORATORY-I

L:0 T:0 P:4 Credits:2

Course Outcomes: Through this course students should be able to

CO1 :: learn and expertise the process of nucleic acid extraction and their analysis

CO2 :: describe the methods for the isolation and screening of industrially important microorganisms and their learn about viability assessment

CO3 :: determine the qualitative and quantitative analysis of proteins

CO4 :: experiment the methods of antigen-antibody interactions and its application

CO5 :: estimate the proteins and DNA using molecular methods

CO6 :: devise different restriction digestion protocols in genomic DNA digestion

List of Practicals / Experiments:

Genomic DNA from plant

- Extraction of genomic DNA from plant by using cTAB method

RNA isolation

- Isolation of RNA from yeast cell using Trizol method.

Restriction digestion of DNA

- restriction digestion of plant DNA and size determination of digested by agrose gel electrophoresis

Protein estimation

- Estimation of proteins using Bradford method

Analysis of proteins

- Qualitative and quantitative analysis of protein using SDS PAGE

Detection of proteins by western blotting

- Detection of proteins by western blotting

Immunological assays

- Demonstration of antigen antibody interaction by ELISA method

Cell viability by MTT assay

- Evaluation of cell viability by MTT assay

Microbial biotechnology I

- Isolation of cellulases producer microorganisms from soil

Microbial biotechnology II

- Screening of cellulase producing microorganisms using Congo Red Method

Text Books:

1. LABORATORY MANUAL OF CELL BIOLOGY by RINA MAJUMDAR, RAMA SISODIA, PRESTEL PUBLISHING

References:

1. PRINCIPLES AND TECHNIQUES OF MOLECULAR BIOLOGY AND BIOCHEMIST by KEITH WILSON AND JOHN WALKER, CAMBRIDGE UNIVERSITY PRESS