

PRACTICAL COURSES BSP406 BIOCHEMISTRY LAB

Course Outcomes:

After undergoing the course, students will be able to:

- CO 1. Develop skills required for biochemical qualitative and quantitative work
- CO 2. Learn methods to proteins, carbohydrates, lipids and NPN substances.
- CO 3. Operate instruments used in biochemistry labs
- CO 4. Conduct biochemical tests to diagnose some metabolic diseases.

1. Handling of pipette and understanding accuracy and precision of pipette
2. Qualitative analysis of carbohydrates: monosaccharides, disaccharides and polysaccharides
3. Qualitative tests for the proteins,
4. Qualitative tests for lipids and NPN substances.
5. Preparation of buffers and its pH determination
6. Preparation of normal, molar and percent solutions
7. Understand serial dilutions
8. Estimation of amino acids and nitrogen analysis by Micro-Kjeldahl method
9. Enzyme activity: Effect of temperature, pH, Km determination
10. Spectrophotometric estimation of metabolites: serum protein, sugar, creatinine, urea, uric acid
11. Colorimetric analysis of vitamins, ascorbic acid etc.,
12. Estimation of plant phenolics
13. Tests to measure glycosuria, proteinuria etc

BSP407 CELL BIOLOGY LAB

Course Outcomes:

After undergoing the course, students will be able to :

- CO 1. Acquire skills required in Cell Biology
- CO 2. Learn methods to study cell division and cell cycle
- CO 3. Develop skills in histological staining techniques isolate the sub-cellular organelles.
- CO 4. Perform experiments in cell biology

1. Micrometry and camera lucida drawings
2. Cell (RBC) counting using haemocytometer
3. Study of plasmolysis in cells of *Rheo* leaves.
4. Determination of mitotic index in onion root tips
5. Preparation of tissues for histology, Sectioning & Staining - Differential staining of tissue sections
6. Histochemistry-localization of a) Carbohydrates b) Proteins c) Nucleic acids
7. Hematoxylin staining and study on histology of liver, intestine, stomach, ovary, etc.,
8. Study of mitotic stages in onion root tip
9. Study of meiosis in Onion inflorescence/grasshopper testis
10. Study of chromosomal aberration in *Allium cepa* after chemical induction
11. Cell viability assays
12. Isolation of Sub cellular organelles
13. Measurement of Na-K ATPase in membrane fractions
14. Determination of osmotic fragility of erythrocyte membranes