BSP408 BASIC MICROBIOLOGY LAB.

Course Outcomes:

After undergoing the course, students will be able to :

CO 1. Understand basic techniques and instrumentation inmicrobiology.
CO 2. Apply the techniques of sterilization of media and glassware.
CO 3. Isolate, identify and culture microorganisms
CO 4. Perform microbial motilitytests.
CO 5. Execute the filter sterilization and microbialisolation.

1. Introduction to basic techniques and instrumentation inmicrobiology
2. Microscopic observations of microorganisms andmicrometry
3. Staining techniques: Properties of stains, microbial smear preparation, simple and differential staining for morphological studies, Gram's staining, endospore staining, intracellular lipids, acid-fast staining, flagella, viability tests and relief (negative)staining;
4. Microbial motilitytests.
5. Microbial culture media, microbialgrowth
6. sterilization of media and glassware, filtersterilization
7. stock culture, subculture, maintenance ofculture.
8. Techniques of microbialisolation.

BSP409 GENETICS LAB

Course Outcomes:

After undergoing the course, students will be able to:

- Understand the importance of *D. melanogaster* as an excellent model in Genetics.
- Maintain and conduct experiments using*D. melanogaster*.
- Conduct crossing experiments to learn Mendelian and non-Mendelian Genetics
- Solve genetic problems such as legal issues like paternity and maternity disputes.

1. Salient features and method of maintenance of *Drosophila melanogaster* culture.
2. Techniques for handling and examining the flies.
3. Preparation of salivary gland chromosomes of *D. melanogaster* and identification of different arms.
4. Preparation of salivary gland chromosomes in *D. nasuta*
5. Identification of blood types in human.
6. Experiments to demonstrate patterns of inheritance of a few characters (Crossing).
7. Study of (i) mating behaviour in *Drosophila* (ii) somatic mitosis in *Drosophila*.
8. Biochemical separation of eye pigments in *Drosophila*
9. Genetic problems.

BSP410 BIOCHEMICAL TECHNIQUES LAB

Course Outcomes:

After successful completion of the course, students will be able to:

CO 1. Separate the mixtures by planar and column chromatographic techniques.
CO 2. Undertake quality analyses required in food industry by identifying additives, vitamins, preservatives, proteins, sugars and aminoacids.
CO 3. Use UV-Vis spectrophotometry forestimation.
CO 4. Operate flame photometry.
CO 5. Perform electrophoretic techniques forseparationanddeterminationofmolecularweight.
CO 6. Perform immune-diffusion techniques and ELISA for detecting presence and

quantityofantigens.

CO 7. Use centrifugation for separation ofmolecules.

1. Ascending, descending and circular paper chromatography for separation ofamino acids/carbohydrates
2. TLC of amino acids (1D and 2D)/carbohydrates
3. UV-Visible Spectrophotometry-verification of Beer Lambert'slaw
4. Flame photometry and its application in the estimation of serum, calcium, potassium and lithium and sodium.
5. HPLC(Demonstration)
6. Gel electrophoresis- native and SDS-PAGE and estimation of molecular weight of Proteins
7. ELISA for quantification of anantigen.
8. Immunodiffusion
9. Centrifuge use and application of centrifugations techniques forseparation
10. Separation by filtration technology