

## **APPLIED MICROBIOLOGY**

**PH. 5.3**

**THEORY**

**3 hours/ week**

### **UNIT -I**

1. Introduction to the scope of microbiology.
2. Classification of microbes and their taxonomy. Morphological study of Bacteria, Actinomycetes, Fungi, rickettsiae, spirochetes and viruses.
3. Identification of Microbes : Stains and types of staining techniques, electron microscopy.
4. Nutrition, cultivation and isolation bacteria, actinomycetes, fungi and viruses. Preservation microbial cultures.

### **UNIT -II**

5. Microbial genetics – Mutations, Isolation of mutants, factors influencing rate of mutation, mutagens. Transformation, conjugation, transduction and protoplast fusion.
6. Control of microbes by physical and chemical methods.
  - a) Disinfection, factors influencing disinfectants and antiseptics and their evaluation.
  - b) Sterilization, different methods, validation of sterilization methods & equipment.

### **UNIT -III**

7. Test for sterility – Sampling media and general procedure. Control tests and inactivation of inhibitory substances.

### **UNIT -IV**

8. Microbiological assay of antibiotics – penicillin, streptomycin and tetracycline, Vitamins – vitamin B12 and amino acids – lysine.