**Subject Code : CCSHS1**

# MICROBIOLOGY

**OBJECTIVES:**

To enable students

a. understand the role of microorganisms in health and disease.
b.
c. Microorganisms in relation to food spoilage, food borne diseases and food preservation.

**UNIT – I.**

**a. Bacteria:** General characteristics of Bacteria.Bacterial Morphology, Cell structure. Motility, Nutrition, Reproduction and respiration. Bacterial diseases-air, Water and Food-borne-diseases.

**b. Viruses:** General characteristics of viruses.Viral diseases – symptoms. Characteristics and Control of viral diseases – (Chickenpox, Dengue, Aids Measles, Poliomyelitis, Influenza, Commoncold)

**c. Yeasts:** General characteristics of Yeast. Economic importance of yeasts.

**UNIT – II.**

**a. Molds:** General characteristics of moulds. Economic Importance of moulds.

**b. Protozoa:** General characteristics of protoza, Morphology and life history of entamoeba histolytica, plasmodium, protozoal diseases-Dysentery, Malaria.

**c. Soil Microbiology:** Role of Microorganisms in Nitrogen cycle.

**UNIT – III.**

**a. Microorganisms in water:**Bacteriological examination of water,Test for E.coli, Water borne diseases qnd their control.

**b. Microorganisms in air :** Droplet infection and air borne disease and their control.

**c. Microorganisms in Milk:** Spoilage of Milk, Prevention and control of spoilage. Pasteurisation – Methods, Principles and advantages.

**UNIT – IV.**

**a. Micro-organisms in food:** Microbial food spoilage, food-borne- Diseases – food poisoning and food infection and their control, food preservation.

**b. Micro-organisms in Sewage:** Microbial role in sewage. Biological treatment of sewage – Principles and methods.

**c. Hygiene education :**Meaning, need, content-personal hygiene and environmental hygiene.

**UNIT – V.**

**a. Sterilization and disinfection** - Principles and methods of Sterilization, Physical and chemical disinfectants – advantages.

**b. Immunity:** Immunization programme, its relevance to communicable diseases.

c. Infection, resistance in immunity, phagocytosis, antigen and antibody reaction.

**PRACTICALS:**

1. Examination of yeast, mold, protozon, and pathogenic bacteria.
2. Examination of unstained organisms – Hanging drop preparation method.
3. Examination of stained organisms – simple – staining and grams method of staining.
4. Study of sterilizing equipments.

**RELATED EXPERIENCE:**

Visit to: Water Works, Dairy Farm, Sewage Farm, Public Health Laboratories.

**REFERENCE BOOKS:**

1. Joshus, A.K. 1972 Microbiology Published by the Author First Edition.
2. Frazier. W.C.1972 Food Microbiology Tata-Mc. Graw – Hill Book Company, New Delhi.
3. Pelzar and Reid 1965 Microbiology Mc. Graw Hill Book Company, London.
4. Philip L. Carpenter 1961 Microbiology, W.D.Sunders Company, Philadelphia and London.
5. A.J.Salle. 1961 Principles of Bacteriology Mc.Graw Hill Book Company,
6. Kenneth, L.Burdon 1958 Microbiology, The Mac Millan Co., New York.