

MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-1st SEM

Sub: MICROBIOLOGY

General microbiology

UNIT: 1 Introduction of Microbiology

- I. Branches of Microbiology.
- II. Contributions of Microbiologists': A.V.Leeuwenhoek, Edward Jenner, Louis Pasteur, Alexander Flemming & Robert Koch.
- III. 5-Kingdom classification proposed by Whittaker & 3 Domains of Microorganisms.

UNIT: 2 Microbes

- I. Structure of bacteria and its classification.
- II. General properties of virus and structure of virus.
- III. General features of *Rickettsia*, PPLO, Prions and Virioids.

UNIT: 3 Stains and Staining and Techniques

- I. Gram Staining & Leishman's staining
- II. Principle, construction and application of Compound Microscope
- III. Electron Microscope and Types

UNIT:4 Microbial Interactions

- I. Microbe interactions: Mutualism, Commensalism, Competition, Parasitism and Predation
- II. Mycorrhiza and its applications.
- III. Microbe and Human interactions.

MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-3rd SEM

Sub: MICROBIOLOGY

Basic - Biochemistry or microbial Physiology

UNIT: 1 Microbial Nutrient Uptake and Transport

- I. Microbial Classification based on nutrient and energy source.
- II. Nutrient uptake mechanism.
- III. Primary and secondary active transport.

UNIT:2 Water and Carbohydrates

- I. Structure and property of water.
- II. Structure and Classification of Carbohydrates.
- III. Carbohydrates Metabolism : Fermentation , Glycolysis & Kreb's cycle.

UNIT:3 Proteins and Lipids

- I. Structure and Classification of Proteins.
- II. Concept of Primary and Secondary Protein.
- III. Structure and Classification of Lipids.

UNIT:4 Nucleic Acid and Enzyme

- I. Double Helical Structure of DNA.
- II. Physio-Chemical property of DNA.
- III. RNA and Its type.
- IV. Concepts of enzyme and Its Classification.