

II Semester

MSD STATE UNIVERSITY- AZAMGARH

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

(I/II)

Sub: ZOOLOGY

UNIT: 1 FUNDAMENTAL UNIT OF LIFE

Cellular Theory

Cell Organelles (Ribosome, Mitochondria, Golgi body, Nucleus & Plasma membrane)

Structure of cell (Prokaryotic & Eukaryotic Cells)

UNIT: 2 TISSUES

Epithelial & connective tissue

Muscular tissues

Nervous tissues

UNIT: 3 DIVERSITY IN LIVING ORGANISM

5- Kingdom classification

3-Domain system

Animal classification

Binomial nomenclature

UNIT: 4 NATURAL RESOURCES

Biogeochemical cycle (CNP)

Global Warming

Acid Rain

Water: Universal solvent

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UNIT: 5 INFECTIOUS DISEASES

Concept of infectious diseases

Health & its significance

Principles of treatment & prevention of infectious disease

UNIT: 6 GENETICS & CELLULAR REPRODUCTION

Cell cycle

Cell division (mitosis & its significance)

Mendel's Law's of inheritance

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IV Semester

MSD STATE UNIVERSITY- AZAMGARH

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

(III/IV)

Sub: ZOOLOGY

UNIT: 1 FOOD & HEALTH

Balanced diet

Dietary fibers

Malnutrition

UNIT:2 BIOMOLECULES – I

Carbohydrate

Protein

UNIT:3 BIOMOLECULES – II

Fat/Lipids

Vitamins

UNIT:4 PHYSIOLOGY-I

Digestive system

Respiratory system

Circulatory system

UNIT : 5 PHYSIOLOGY – II

Excretory system

Skin/ Integumentary system

UNIT : 6 CO-ORDINATION & CONTROL

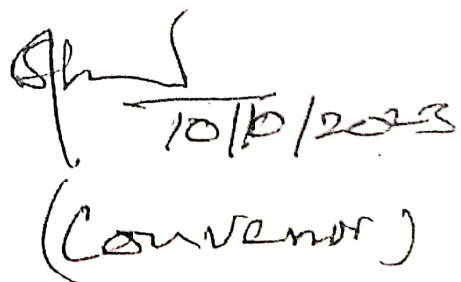
Endocrine system

Nervous system








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(II) Semester

MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-1st SEM (I/II)
Sub: 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.

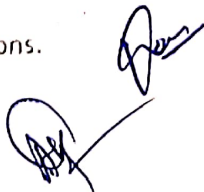
UNIT: 3 Stains and Staining and Techniques

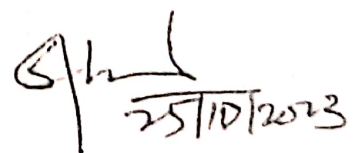
- I. Gram Staining & Leishman's staining
- II. Principle, construction and application of Compound Microscope
- III. Electron Microscope and Types

UNIT: 4 Microbial Interactions

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






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IV Semester

MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-3rd SEM (III/IV)
Sub: MICROBIOLOGY

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 It's Classification.


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MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-1st SEM (I/II)

Sub: BIOCHEMISTRY

UNIT: 1 Basic of Biochemistry

- I. Contributions of Indian Biochemists.
- II. Concept of PH & PH determination
- III. Water as universal solvent

UNIT: 2 Carbohydrates

- I. Monosaccharide-Structure of Aldoses and Ketoses.
- II. Structure of biologically important sugar derivatives.
- III. Reducing and Non-reducing sugars.

UNIT: 3 Amino acids & Proteins

- I. Physical and chemical properties of amino acids
- II. Structure and classification of Proteins.
- III. Uncommon amino acids and their functions.

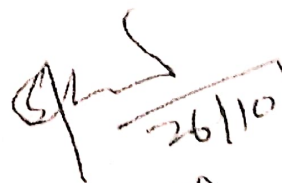
UNIT: 4 Lipids and Vitamins

- I. Building block of lipids-Fatty acids
- II. Classification of lipids.
- III. Water and Fat soluble vitamins.








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(IV) Semester

MSD STATE UNIVERSITY- AZAMGARH

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

(III/IV)

Sub: BIOCHEMISTRY

UNIT: 1 Basic of Biophysics

- I. Chemical bonding.
- II. Ionic bond ,covalent bond, Hydrogen bond & Vander Waals forces
- III. . Structure and property of water

UNIT: 2 Microscopy

- I. Principle of Light Microscopy
- II. Electron Microscopy.
- III. Permannet and Temporary slide preparations.

UNIT:3 Proteins and Electrophoresis

- I. Structure of Proteins.
- II. Basic principles of Electrophoresis.
- III. Gel Electrophoresis:PAGE,SDS_PAGE.

UNIT:4 Nucleic Acid and Centrifugation

- I. Double Helical Structure of DNA.
- II Physio-Chemical property of DNA.
- III-Basic rules of sedimentation, sedimentation coefficient & principle of Centrifugation.

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