

MSD STATE UNIVERSITY- AZAMGARH

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

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



10/10/2023
(Convener)



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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SLM
10/10/2023
(Convenor)

MSD STATE UNIVERSITY- AZAMGARH

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

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

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.

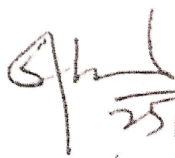
UNIT: 3 Stains and Staining and Techniques

- 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.


25/10/2023
(Coordinator/convener)



MSD STATE UNIVERSITY- AZAMGARH

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

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

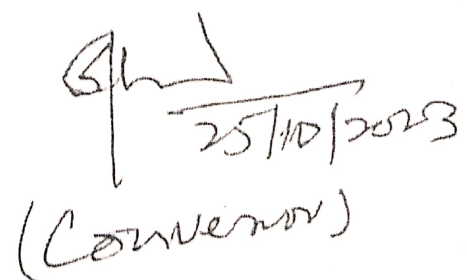
I. Double Helical Structure of DNA.

II. Physio-Chemical property of DNA.

III RNA and Its type.

IV Concepts of enzyme and It's Classification.




25/10/2023
(Convener)

MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-1st SEM
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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MSD STATE UNIVERSITY- AZAMGARH

Syllabus for MINOR subject of B.Sc-3rd SEM
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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A double-headed arrow with 'H₂O' written above it.
A circle with 'DNA' written inside it.
A signature 'Dea' written to the right.

Handwritten notes:
A signature 'S.K.' written above a horizontal line.
The date '26/10' written below the line.
The word '(CONVENOR)' written in large parentheses below the date.

