K.T.S.P. Mandals

Sahebraoji Buttepatil Mahavidylaya,Rajgurunagar

Syllabus Completion Report

Academic Year 2024-2025

Department of Zoology

F. Y. B. Sc.

Course Title: **Cell Biology and Biomedical Techniques (T)** **Semester II**

Course Code: **ZOO - 151 - T**

Sr. No.	Month	Topics	Teacher
1	Dec	**Overview of Cells :** 1.1 Prokaryotic (*E. coli*) and Eukaryotic (Plant & Animal) cells. 1.2 Microscopy – Simple and Compound microscope. 1.3 Micrometry 1.4 Types of Stains: Acidic, Basic and Neutral.	PPS
2	Dec & Jan	**Plasma Membrane:** 2.1 Models of plasma membrane. 2.2 Transport across membranes: Active and Passive transport, Facilitated transport, endocytosis, exocytosis. 2.3 Cell – Cell Junction: Structure and function, Tight junctions, Adherent junctions, Gap junctions, Desmosomes and Hemi-desmosomes.	PPS
3	Jan	**Cell organelles: Structure and functions -** 3.1 Nucleus and nuclear pore complex. 3.2 Endoplasmic Reticulum. 3.2 Golgi Complex. 3.3 Lysosomes. 3.4 Ribosome. 3.5 Peroxisomes. 3.6 Mitochondria	PPS
4	Jan	**Cell Division:** 4.1 Cell Cycle. 4.2 Mitosis. 4.3 Meiosis.	PPS

5	**Feb**	**Introduction and Scope of Biomedical Techniques.** 5.1 Lab safety techniques and sterilization.	PPS
6	**Feb**	**Laboratory Instruments: Introduction, principle and working -** 6.1 Centrifugation. 6.2 Chromatography. 6.3 Spectroscopy. 6.4 Electrophoresis. 6.5 Microtomy	PPS
7	**Feb and March**	**Biomedical Instruments: Introduction, Principle & Brief working of -** 7.1 Electrocardiography (ECG). 7.2 Ultrasound / Sonography. 7.3 Polymerase Chain Reaction (PCR).	PPS
8	**March**	**Clinical Techniques: Introduction and working principle.** 8.1 Blood collection 8.2 Anticoagulants. 8.3 Preparation and staining of blood smears. 8.4 Differential Leucocyte Count. 8.5 Hemocytometry (RBC and WBC). 8.6 Hemoglobin estimation	PPS
9	**March**	**Urine analysis:** 9.1 Collection of urine sample. 9.2 Preservation of urine sample. 9.3 Routine urine analysis – Physical, bio-chemical and microscopic examination	PPS

As per above mention theory of syllabus of semester II completed successfully.

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