MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

B. Sc. BIOTECHNOLOGY II YEAR TDC (2016-17)

B. Sc. IInd Year Practicals

Practical- III

(A) Biophysics and Biostatistics

1. To study the principle, construction and working of the following equipments:
   (a) Spectrophotometer (b) Centrifuge
   (c) pH meter (d) Electrophoresis apparatus
2. Demonstration of Lambert's and Beer's law.
3. To find out isoelectric point of amino acid
4. Study of Microscopes: Light microscope, Phase contrast microscope
5. Biostatistical exercised based on the following:
   (a) Mean (b) Mode
   (c) Median (d) Standard Error and standard Deviation
   (e) Probability (f) Coefficient of variation
6. Exercise based on frequency distribution and graphic representation.
7. Exercise based on hypothesis testing
8. To study different methods of chromatographic separation
   (a) Paper chromatography
   (b) Thin-layer chromatography
   (c) Column chromatography

B. Plant and Animal Physiology

1. To observe streaming movement of protoplasm in the cells of *Hydrilla*.
2. To demonstrate the phenomenon of plasmolysis in the cells of *Rhoeodiscolor*.
3. To demonstrate the phenomenon of osmosis by potato osmoscope.
4. To demonstrate opening and closing of stomata in leaf samples.
5. To demonstrate unequal transpiration in leaves using cobalt chloride paper.
6. To study the effect of various wavelengths of light on the process of photosynthesis.
7. To demonstrate that light, CO_2 and chlorophyll are necessary for photosynthesis.
8. To determine the value of Respiratory Quotient (RQ) of different substrates.
9. To demonstrate the continuity of vessels in higher plants.
10. Bioassay of auxin, cytokinin, GA_3, ABA and ethylene using appropriate plant material.
11. Identification of foodstuffs – Carbohudrates, proteins, lipids.
12. Demonstration of enzyme activity: Salivary action, Liver extract (glycogen).
13. Demonstration of oxygen uptake during respiration in cockroach.
14. Haematological estimates: RBC, WBC, Haemoglobin, PCV, ESR.

15. Demonstration of heart bead and effect of drugs on its using CAL tools.
16. Estimation of glucose and amino acids in urine.
17. Study of histological slides of mammalian endocrine glands.

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B. Sc. BIOTECHNOLOGY II YEAR TDC (2016-17)

IInd Year TDC Biotechnology

Practical I

Incorporating Paper I and II

Paper I: Principles of Plant Tissue Cultures
Paper II: Principles of Animal Cell Culture

Duration: 5 hours	Max Marks: 75
A. Major Exercise from Paper I	15
B. Major Exercise from Paper II	15
C. Minor Exercise from Paper I	10
D. Minor Exercise from Paper II	10
Spots 5 x 3	15
Viva-voce	05
Record	05

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B. Sc. BIOTECHNOLOGY II YEAR TDC (2016-17)

IInd Year TDC Biotechnology

Practical II

Incorporating Paper III and IV

Paper III: Basics of Molecular Biology
Paper IV: Immunology and Enzymology

Duration: 5 hours	Max Marks: 75
A. Major Exercise from Paper III	15
B. Major Exercise from Paper IV	15
C. Minor Exercise from Paper III	10
D. Minor Exercise from Paper IV	10
Spots 5 x 3	15
Viva-voce	05
Record	05

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

B. Sc. BIOTECHNOLOGY II YEAR TDC (2016-17)

IInd Year TDC Biotechnology

Practical III

Incorporating Paper V and VI

Paper V: Biophysics and Biostatics
Paper VI: Plant and Animal Physiology

Duration: 5 hours	Max Marks: 75
A. Major Exercise from Paper V	15
B. Major Exercise from Paper VI	15
C. Minor Exercise from Paper V	10
D. Minor Exercise from Paper VI	10
Spots 5 x 3	15
Viva-voce	05
Record	05