



19/12/23

**School of Biological Sciences
Doon University
Dehradun, Uttarakhand
Question Paper: End-Semester Examination
Session: Aug 2023 – Dec 2023**

B.Sc. Biological Sciences with Research (Third Semester)

Course: Biochemical Techniques

Course Code: BSS108

Total Marks: 50

Maximum Time: 2:00Hrs

PART I: Give answers to any five questions:

(Marks: 2 X 5 = 10)

1. What is iso-electric focusing?
2. What is the use of Ethidium bromide in Agarose gel electrophoresis?
3. What will happen if we do not use β -mercaptoethanol in the protein sample loading dye?
4. Define sedimentation coefficient in centrifugation. What is its unit?
5. Define Relative centrifugal force (RCF) on a particle in centrifugation. Write its formula.
6. What is isosbestic point in spectrophotometry?

PART II: Give answers to any four questions:

(Marks: 5 X 4 = 20)

7. Write a shortnote on column chromatography.
8. Differentiate between SDS-PAGE and Agarose gel electrophoresis.
9. Write a short note on various types of paper chromatography.
10. Explain Density Gradient Centrifugation with diagram.
11. What are the applications and limitations of UV-visible spectroscopy?
12. Explain the working principle of a Compound Microscope with diagram.

PART III: Give answers to two questions:

(Marks: 10 X 2 = 20)

13. Explain in detail the principle, working and instrumentation of SDS-PAGE with the help of suitable diagram.
14. Explain the different types of centrifuges with diagram. What are their uses?
15. Describe the instrumentation and working of Transmission Electron Microscope (TEM) with diagram.