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(20426)

Roll No.

B.Sc.(Bio-Tech.) - I Year.

**3460**

**B.Sc. (Bio-Tech.) Examination, April-2026**

**Instrumentation and Bio analytical**

**Techniques**

**(B-106)**

*Time : Three Hours ]*

*[Maximum Marks : 50*

**Note :** Attempt any **five** questions. **All**

questions carry equal marks.

1. Explain Isoelectric focusing and discuss about application's of Electrophoresis in analyzing macromolecules. 10
2. Explain the principle of chromatography and give a brief note on different methods of chromatographic techniques. 10

**P.T.O.**

3. Distinguish between column, Thin layer and paper chromatography methods. 10
4. Give an account on different types of NMR techniques. 10
5. Explain the principle, procedure for the analysis of biomolecules using UV-visible spectrophotometer. 10
6. Describe the principle and functioning of X-ray photoelectron spectroscopy. 10
7. Describe in brief any **two** of the following: 5×2=10
  - (a) Principle and working of colorimeter
  - (b) Importance of radioisotopes in biological studies
  - (c) Immunoelectrophoresis techniques

8. Describe the different parts of electron microscope. What is the difference between electron microscope and optical microscope? 10
9. Write short note on any **two** of the following: 5×2=10
- (a) pH meter
  - (b) X-ray crystallography
  - (c) Phase contrast microscopy
10. What do you understand by MALDI-TOF? Write its application in biological sciences. 10

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