

M.Sc. (Biotechnology) (NEP Pattern) Semester-I  
**NEP-93 / 01MSCBT03 - Paper-III : Biophysical Techniques**

P. Pages : 1

Time : Three Hours



**GUG/S/25/15054**

Max. Marks : 80

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- Notes : 1. All questions are compulsory.  
2. Draw the diagram wherever it is necessary.

**1.** Explain the principle and working of SDS-PAGE electrophoresis. Give the applications. **16**

**OR**

a) Describe in detail ascending paper chromatography and its applications. **8**

b) Describe the determination of molecular weight of biopolymer through viscosity. **8**

**2.** Describe in detail determination of molecular weight by sedimentation velocity. **16**

**OR**

Write notes on

a) Density gradient centrifugation and applications. **8**

b) Types of centrifuge. **8**

**3.** Describe in detail principle, working and applications of uv-visible spectrophotometry. **16**

**OR**

a) Nuclear Magnetic Resonance spectrometry. **8**

b) Mass spectrometry. **8**

**4.** Describe the working mechanism and applications of liquid scintillation counter. **16**

**OR**

a) Autoradiography and Cerenkov radiation. **8**

b) Tracer techniques, advantages and limitations. **8**

**5.** Write a short notes on

a) Principles of partition & adsorption. **4**

b) Relative-centrifugal force. **4**

c) Lambert and Beer's Law. **4**

d) Radioactive decay. **4**

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