M.Sc.(Biotechnology) (C.B.C.S. and Old Pattern) Sem-I

PSBIT103 / BT1-T003-Paper-III : Biophysical Techniques

P. Pages : 1 **GUG/S/19/11148**

Time : Three Hours * 3 0 8 8 * Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.

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

OR

Write notes on.

a) Gel filtration chromatography. **8**

b) Determination of molecular weight of biopolymer through viscosity. **8**

2. Describe the principle and working of high speed ultracentrifuges. **16**

OR

a) Write basic principles of centrifugation and derive expression for sedimentation coefficient. **8**

b) Discuss how molecular weight of macromolecules is determined by calculating sedimentation velocity. **8**

3. Describe in detail principle, working and applications of UV-Vis spectrophotometer. **16**

OR

Write notes on :

a) Nuclear Magnetic resonance spectroscopy. **8**

b) Mass spectrophotometry. **8**

4. Explain the design and working of Geiger-Muller counter. **16**

OR

a) Explain falling drop method for the measurement of stable isotopes. **8**

b) Explain advantages and limitations of tracer techniques in radioactivity. **8**

5. Write short notes on.

a) Brief concept of HPLC. **4**

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

c) Mass spectrophotometry. **4**

d) Radioactive and stable isotopes. **4**

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