

B.Sc. (CBCS Pattern) Semester - IV
011A - Biotechnology Paper-I (Biophysical Techniques)

P. Pages : 2

Time : Three Hours



GUG/S/23/11994

Max. Marks : 50

1. Discuss instrumentation and working of U.V. Visible spectrophotometry. 10

OR

a) Discuss the concept of Lambert and Beers law. 2½

b) State the difference between spectrophotometer and colorimeter. 2½

c) Write a note on chromophore. 2½

d) Describe the concept of electromagnetic radiations. 2½

2. Explain principle and working of Ion-exchange chromatography. 10

OR

a) Write a note on types of gels. 2½

b) Discuss the principle of affinity chromatography. 2½

c) Write a note on Thin layer chromatography. 2½

d) Write the application of paper chromatography. 2½

3. Explain principle and working of gel electrophoresis. 10

OR

a) Write a note on SDS-PAGE. 2½

b) Discuss principle of density gradient centrifugation. 2½

c) Discuss the factors affecting electrophoretic mobility. 2½

d) Write a note on sedimentation coefficient. 2½

4. Explain principle and working of liquid scintillation counter. 10

OR

a) Give advantages of isotropic tracer technique. 2½

b) Write a note on mass spectrometry. 2½

- c) Write a note on units of radioactivity. 2½
- d) Write a note on Geiger-Muller counter. 2½

5. Solve any ten.

- i) Define electromagnetic radiations. 1
- ii) What is the function of prism in spectrophotometer. 1
- iii) Give any two advantage of colorimeter. 1
- iv) What is partition coefficient? 1
- v) Give examples of resins in ion exchange chromatography. 1
- vi) Give application of Thin layer chromatography. 1
- vii) What is RCF? 1
- viii) What is sedimentation coefficient? 1
- ix) What is the function of Analytical centrifugation? 1
- x) What is radioactive isotope? 1
- xi) What are the limitations of tracer technique? 1
- xii) What is autoradiography? 1
