B.Sc. Second Year CBCS Pattern Semester-IV

011A - Biotechnology Paper-I : Biophysical Techniques

P. Pages : 2 **GUG/W/23/11994**

Time : Three Hours * 6 8 8 8 * Max. Marks : 50

---

1. Describe in details about UV-Visible spectrophotometry. **10**

OR

a) Give a note on concept of chromophores. **2½**

b) Write a note on Beer – Lambert law. **2½**

c) Give difference between colorimeter and spectrophotometer. **2½**

d) Write a note on electromagnetic radiation. **2½**

2. Give a detail account on Gel filtration chromatography. **10**

OR

a) Give a brief account on paper chromatography. **2½**

b) Write a note on Affinity chromatography. **2½**

c) Write a note on Distribution coefficient. **2½**

d) Write a note on types of gels used in gel filtration chromatography. **2½**

3. Give a detail account on Gel Electrophoresis. **10**

OR

a) Write a note on detection techniques used in gel electrophoresis. **2½**

b) Write the applications of SDS-PAGE electrophoresis. **2½**

c) Give an account on RCF. **2½**

d) Write a note on preparative centrifugation. **2½**

4. Describe in detail about measurement of radioactivity by Geiger-Muller counter. **10**

OR

a) Write a note on radioactive isotopes. **2½**

b) Give an account on liquid-scintillation counter. **2½**

c) Write a note on application of isotopes in biotechnology. **2½**

d) Give a brief account on mass spectrometry. **2½**

5. Solve **any ten.**

a) Define Beer's law. **1**

b) What is electromagnetic radiation? **1**

c) What is Auxochrome? **1**

d) What is partition coefficient? **1**

e) Write the names of any two resins used in ion-exchange chromatography. **1**

f) What is ligand in reference to affinity chromatography? **1**

g) Write the names of any two solubilizers used in gel electrophoresis. **1**

h) What is RCF? **1**

i) What is sedimentation coefficient? **1**

j) What is the unit to measure radioactivity? **1**

k) What is radioactive decay? **1**

l) What is stable isotope? **1**

****