B.Sc. (CBCS Pattern) Sem-V

012A - Microbiology Paper-II (Bioinstrumentation)

P. Pages : 2 **GUG/W/22/13106**

Time : Three Hours * 3 8 2 5 * Max. Marks : 50

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

1. Explain the basic principle, instrumentation and application of mass spectrometer. **10**

OR

a) Derive Beer's law **2½**

b) Write about concept of electromagnetic radiation. **2½**

c) Write the application of UV-visible spectrophotometer. **2½**

d) Write about MALDI **2½**

2. Describe in detail the method of ion exchange chromatography. **10**

OR

a) Explain the process of paper chromatography. **2½**

b) Describe the process of thin layer chromatography. **2½**

c) Write about the nature of partition forces. **2½**

d) Describe the principal of affinity chromatography. **2½**

3. Describe in detail the method of SDS-PAGE. **10**

OR

a) Write about western blotting. **2½**

b) Explain the process of immunoelectrophoresis. **2½**

c) Describe the process of paper electrophoresis. **2½**

d) Explain the factors affecting electrophoretic motility. **2½**

4. Describe various methods of isotopic tracer technique and its application. **10**

OR

a) Write about factors affecting sedimentation velocity. **2½**

b) Explain the working of GM counter. **2½**

c) Explain Rate zonal centrifugation. **2½**

d) Describe the concept of RCF. **2½**

5. Write **any ten.**

a) What is the use of monochromator? **1**

b) What is TOF? **1**

c) Name the radiation source in IR spectroscopy. **1**

d) Give the example of solvent used in paper chromatography. **1**

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

f) Name the gel used in gel chromatography. **1**

g) Give the example of solubilizer used in gel electrophoresis. **1**

h) What is electrophoresis? **1**

i) What is Northern blotting? **1**

j) What is centrifugal force? **1**

k) What is the unit of radioactivity. **1**

l) What is radioisotope? Give example. **1**

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