

**USMBT-10 - Microbiology Paper-II (Bioinstrumentation)**

P. Pages : 1

GUG/W/22/13106

Time : Three Hours



Max. Marks : 50

1. Write principle, instrumentation and application of IR spectroscopy. **10**  
**OR**  
 a) Explain the concept of chromophore. **2½**  
 b) Write about MALDI. **2½**  
 c) Describe the deviation of Beer's law. **2½**  
 d) Differentiate between spectrometer and colorimeter. **2½**
2. Write in detail about Gel filtration chromatography. **10**  
**OR**  
 a) Explain the principle of HPLC. **2½**  
 b) Write about paper chromatography. **2½**  
 c) Describe partition principle. **2½**  
 d) Explain the principle of Low exchange chromatography. **2½**
3. Write in detail about SDS-PAGE. **10**  
**OR**  
 a) Write about electro focusing. **2½**  
 b) Explain paper electro focusing. **2½**  
 c) Write about different types of gels. **2½**  
 d) Explain immunoblotting. **2½**
4. Write about different isotopic tracer techniques and their application. **10**  
**OR**  
 a) Explain rate zonal centrifugation. **2½**  
 b) Write about factors affecting sedimentation. **2½**  
 c) Explain radioactive labeling. **2½**  
 d) Write notes on autoradiography. **2½**
5. Attempt **any ten**.
- a) what is TOF? **1**  
 b) Name the radiation source in IR spectrometer. **1**  
 c) What is extinction coefficient? **1**  
 d) Name the stationary phase of TLC. **1**  
 e) Give the example of solvent used in paper chromatography. **1**  
 f) Name the locating reagent used in paper chromatography. **1**  
 g) What is electrophoresis? **1**  
 h) Give names of Solubilizers. **1**  
 i) What is GM counter? **1**  
 j) What is Northern blotting? **1**  
 k) Give the name of radioactive element used in cancer therapy. **1**  
 l) What is centrifugal force. **1**

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