

**M.Sc. I Semester Degree Examination, April/May - 2024****MICROBIOLOGY****Instrumentation and Techniques in Biology****(NEP)**

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with Question No. **1 (Q.1)** is **Compulsory**.
Each question carries **equal** marks.

1. Describe the theory and application of PMR and ESR Spectroscopy. **14**
2. Write an account on High speed and Ultracentrifuge and explain its importance. **14**
3. Explain the processing techniques of various advanced 3D image. **14**
4. Discuss concept and principles of differential and density gradient centrifugation. **14**
5. Write an account on UV and Visible Spectroscopy. **14**
6. (a) Discuss Radio tracer techniques and list its importance. **5**
(b) Write a note on Radio immunoassay. **5**
(c) Write the applications of Analytical centrifugation. **4**
7. (a) Briefly discuss Theory and application of agarose gel electrophoresis. **7**
(b) Explain the principle and procedure of High-performance liquid chromatography. **7**
8. (a) Write a note on Iso electro focusing. **5**
(b) Explain northern blotting techniques, list its importance. **5**
(c) Explain the scope and principle of Geiger-Muller counter techniques. **4**

