

M.Sc. (Micro) Semester - 2 (CBCS) Examination
March/April – 2024 (As Per Syllabus Year-2023)
Analytical Techniques (Ict-2)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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- Q. 1 Answer the following (any seven out of ten, each of two marks) (14)
1. Write full form of NMR and ESR
 2. Enlist any four-fluorescence dye and describe its uses.
 3. Define gel electrophoresis.
 4. Draw the light path of fluorescent microscope.
 5. Briefly explain the significance of tissue fixation in microscopy. How does it contribute to preserving cellular structures for observation under the microscope?
 6. Define Fractionation and Blotting Technique in the context of biochemical research. How are these techniques utilized for the analysis and characterization of biomolecules?
 7. What is Beer-Lambert Law?
 8. Briefly explain the concept of Circular Dichroism (CD) spectroscopy. How is it used to study the secondary structure of proteins
- Q. 2 Write short note (any two) (14)
1. Discuss Fluorescence Microscopy with functioning diagram.
 2. Write a note on Electron microscopy and its type.
 3. Describe application of Autoradiography
- Q. 3 Answer the following (any two) (14)
1. Explain GC-MS in details.
 2. Write about ion exchange chromatography with importance.
 3. What is HPLC? Explain its principle and application.
- Q. 4 Answer the following (any two) (14)
1. Describe UV and Raman Spectroscopy
 2. What is Spectroscopy? Describe Mass Spectroscopy.
 3. Explain Molecular Modelling with applications.
- Q. 5 Write short note (any two) (14)
1. Describe Northern Blotting techniques.
 2. Write a note on types of centrifuge.
 3. Write a note on principle and applications of electrophoresis.
