647510 **MSC2EnvC204x** **Seat No :_____**

M.Sc. (Envi.) Semester - 2 (*CBCS*) Examination
May/June-2022 (New Course)
Instrumentation and Analytical Technique (Core)

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

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q .1 Answer the following (any seven out of ten, each of **two** marks**)** **14**

1. What is the function of buffer?
2. Give the example of fluorescent stain used for microscopy.
3. Define Electrical conductivity.
4. Mention advantage of affinity chromatography.
5. Define the mobile and stationary phase of HPLC.
6. Outline the UV and visible spectrum.
7. Mention the function of Etbr.
8. Describe the composition of stacking gel.
9. What is ladder?
10. Describe Beer-Lambert law in brief.

Q. 2 Answer the following (any two out of three, each of **seven** marks) **14**

1. Explain fluorescence microscopy with its light path.
2. Write the basic principle and application of phase contrast Microscopy.
3. Explain the scanning electron microscopy and mention its procedure and application.

Q.3 Answer the following **14**

1. Write a note on TLC. 05
2. Write Principle and application of paper chromatography. 05
3. Write short note on gel filtration chromatography. 04

OR

Q. 3 Answer the following (each of **seven** marks) **14**

1. Discuss HPLC in detail.
2. Explain the principle of gas chromatography and mention its application.

Q.4 (A) Answer the following (any two out of three, each of **five** marks) **10**

1. Explain UV-vis spectroscopy in detail.
2. Explain working principle and application vibrational spectroscopy.

Q.4 (B) Answer the following (any One out of two) **04**

1. Write a note on Flame photometry.
2. Explain Atomic absorption spectroscopy in detail.

Q.5 Answer the following (any two out of four, each of **seven** marks) **14**

1. Discuss the basic principle of agarose gel electrophoresis.
2. Write detailed note on isoelectric focusing.
3. Write note on SDS-PAGE and write its application.
4. Basic principle and application of Ultracentrifugation.

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