

Roll No.							
----------	--	--	--	--	--	--	--

**25-FS-21**

**M.Sc. II SEMESTER [MAIN/ATKT] EXAMINATION  
MAY - JUNE 2025**

**FORENSIC SCIENCE**

Paper - I

**[Instrumental Methods : Chemical]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

---

**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt all five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

---

**Q. 1** Explain the principle and application of steam distillation in forensic analysis.

**OR**

Write a note on -

- i) Liquid - Liquid Extraction (LLE)
- ii) Solid Phase Micro Extraction (SPME).

**Q. 2** Describe the principle and working of scanning electron microscope.

**OR**

- a) Discuss the principle of confocal microscopy in Forensic Biology.
- b) Write a detailed account on forensic application of fluorescent microscopy.

**Q. 3** Explain the principles and classification of chromatographic techniques with suitable example.

**OR**

Discuss the basic principles, instrumentation and forensic application of HPLC (High Performance Liquid Chromatography).

**Q. 4** Explain -

- i) Agarose gel Electrophoresis.
- ii) Sodium Dodecyl Sulphate (SDS).

P.T.O.

**OR**

- a) Compare capillary electrophoresis with gel electrophoresis.
- b) Discuss role of electrophoresis in analysis of protein.

**Q. 5** Describe the working principle and instrumentation of mass spectrometry.

**OR**

- a) Explain working and forensic application of GC-MS.
- b) Discuss metastable peaks in MS.

————○————