

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 1223]

**DECEMBER 2023
(SEPTEMBER 2023 EXAM SESSION)**

Sub. Code: 2087

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 - SEMESTER VIII

PAPER VII - ADVANCED INSTRUMENTATION TECHNIQUES

Q.P. Code: 562087

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Write the different types of ionization techniques in mass spectroscopy and explain about any two types of ionization technique.
2. Explain in detail about the Principle, instrumentation and applications Thermo gravimetric Analysis.
3. Write the principle, steps and applications of radio immune assay.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Describe in brief about shielding and deshielding effect in NMR spectroscopy.
2. Write the factors affecting liquid-liquid extractions.
3. Write in detail about the calibration of analytical balance.
4. Explain the validation parameters as per ICH guidelines.
5. Write in detail about the principle, instrumentation and applications of powder diffraction crystallography.
6. Write the principle in solid phase extraction.
7. Explain the Instrumentation involved in Nuclear Magnetic Resonance spectroscopy.
8. Explain the calibration of a Fluorimeter.
9. Explain briefly about LC-MS/MS.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define Linearity.
2. Define Robustness.
3. Write any two applications of GC-MS.
4. Define Retrospective validation.
5. Define Chemical shift.
6. Define Base peak in mass spectroscopy.
7. Define calibration and validation.
8. Define antigen and antibody.
9. What are the solvents used in Nuclear Magnetic Resonance spectroscopy?
10. Define precessional frequency.
