

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

[B.PHARM 0823]

**AUGUST 2023
(MARCH 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. Explain in detail about the working and the types of inter phases used in working of HPTLC-MS.
2. Explain the principle, instrumentation and application of mass spectroscopy.
3. Define calibration and explain different calibration parameters of high performance liquid chromatography.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Explain the principle of Nuclear Magnetic Resonance spectroscopy.
2. Explain the principle and applications of Differential Thermal Analysis (DTA).
3. Write the principle involved in radio immune assay.
4. Write in detail about the principle, instrumentation and applications of rotating crystal technique.
5. Define calibration and write the need for calibration of a method.
6. Write the principle and working of Jet orifice separator in GC-MS.
7. Explain the principle involved in chemical ionization of mass spectroscopy.
8. Explain the calibration parameters of a Flame Photometer.
9. Explain briefly liquid – liquid extraction.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define Ruggedness.
2. Define Specificity.
3. Define Concurrent validation.
4. Define chemical shift.
5. Define nitrogen rule in mass spectroscopy.
6. Define radio labeling.
7. Write any two applications of X-ray diffraction methods.
8. Define Thermogram.
9. Write the applications of differential scanning calorimetry.
10. What is MALDI?
