G. PULLA REDDY COLLEGE OF PHARMACY
AUTONOMOUS
Affiliated to **Osmania University** Approved by **PCI** & Accredited by **NAAC**
Mehdipatnam, Hyderabad - 500028. Telangana State.

M. PHARM FIRST SEMESTER (PCI) REGULAR EXAMINATIONS, APRIL – 2026
Branch: PHARMACEUTICAL ANALYSIS, PHARMACEUTICS, PHARMACOLOGY
COMMON PAPER FOR ALL STREAMS
Subject: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

QP Code: MPI01TE26
Time: 03 Hours **Max Marks: 75**

Note: Answer Any **FIVE** Questions. **5 X 15 = 75M**

S. No	Questions
1	Describe the principle, instrumentation, and applications of Flame Emission Spectroscopy. State and explain Beer's law and its deviations in applicability (8+7)
2	Explain the principle of High Performance Liquid Chromatography (HPLC). Discuss the chromatographic parameters used to ensure system suitability.
3	Define Spin-Spin coupling and Coupling constant in NMR spectroscopy. Briefly explain the principle of ^{13}C NMR.
4	What is Mass fragmentation? Discuss the general rules of fragmentation and the significance of metastable ions.
5	Explain the principle, technique, and pharmaceutical applications of Thin Layer Chromatography (TLC).
6	Discuss the principle and applications of Radio Immuno Assay (RIA) and Bioluminescence assays.
7	Explain the theory of vibrations & factors affecting vibrational frequencies in IR spectroscopy. Describe the methods used for sample handling in IR.
8	Discuss the principles of Capillary Electrophoresis and Isoelectric focusing. How do these differ from moving boundary electrophoresis?

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M. PHARM FIRST SEMESTER (PCI) REGULAR EXAMINATIONS, APRIL – 2026
Branch: PHARMACEUTICS
Subject: DRUG DELIVERY SYSTEM

Subject Code : MPH102T **QP Code: MPHI02TE26**
Time: 03 Hours **Max Marks: 75**

Note: Answer Any **FIVE** Questions. **5 X 15 = 75M**

S. No	Questions
1	a) Explain the concept of customized drug delivery system along with their applications b) Differentiate conventional and controlled drug delivery systems
2	Demonstrate the concept of a) Bioelectronic medicines b) Personalized medicine
3	a) Explain the concept involved in different Rate programmed drug delivery systems b) Describe the concept of enzyme activated drug delivery system
4	a) Discuss formulation and evaluation of transdermal drug delivery systems b) Explain the criteria of selection of drug for floating drug delivery system
5	a) List out various novel ocular drug delivery system and approaches to formulate b) Explain about challenges in formulating ocular drug delivery system and strategies to overcome the barriers
6	a) Explain the principle, classification, advantages and limitation of gastro-retentive drug delivery systems b) Discuss about structure of skin and barriers for transdermal drug delivery
7	a) Discuss the novel techniques for the formulation of protein and peptide drug delivery systems b)How do you evaluate protein and peptide drug delivery systems
8	a) Demonstrate the concept of transmucosal drug delivery system b)Discuss about classification of vaccine

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M. PHARM FIRST SEMESTER (PCI) REGULAR EXAMINATIONS, APRIL – 2026
Branch: PHARMACEUTICS
Subject: MODERN PHARMACEUTICS

Subject Code : MPH103T **QP Code: MPHI03TE26**
Time: 03 Hours **Max Marks: 75**

Note: Answer Any **FIVE** Questions. **5 X 15 = 75M**

S. No	Questions
1	a) Evaluate different optimization techniques used in pharmaceutical formulation and justify the selection of an appropriate method for a given dosage form.
	b) Write the significance of pre-formulation studies in dosage form design.
2	a) Apply theories of dispersion to explain the preparation and stability of emulsions and suspensions.
	b) Describe formulation and evaluation of large and small volume parenteral with physiological considerations.
3	Describe the stages of qualification (URS, DQ, IQ, OQ, PQ) in the validation of pharmaceutical equipment and facilities.
4	Explain production planning and control with sales forecasting and budgeting.
5	Apply the concepts of friction and force distribution to interpret compaction profiles in tablet manufacturing.
6	a) Describe dissolution models including Higuchi and Peppas plots and their significance.
	b) Write a note on the applications of ANOVA testing in pharmaceutical research.
7	Describe diffusion, dissolution and pharmacokinetic parameters and their importance.
8	a) Write the components of a validation master plan and manufacturing process model.
	b) Write a detailed note on SMEDDS.

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M. PHARM FIRST SEMESTER (PCI) REGULAR EXAMINATIONS, APRIL – 2026
Branch: REGULATORY AFFAIRS
Subject: REGULATIONS AND LEGISLATION FOR DRUGS & COSMETICS, MEDICAL DEVICES, BIOLOGICALS & HERBALS, AND FOOD & NUTRACEUTICALS IN INDIA AND INTELLECTUAL PROPERTY RIGHTS

Subject Code : MRA104T **QP Code: MRAI04TE26**
Time: 03 Hours **Max Marks: 75**

Note: Answer Any **FIVE** Questions. **5 X 15 = 75M**

S. No	Questions
1	Explain the Objectives and functions of a) Pharmacy council of India b) Drugs and Magic Remedies act, 1955 (8+7)
2	a) State the bonded and non-bonded laboratory? Describe the lay out and procurement of alcohol in bonded laboratory b) Give a note on Prevention of Cruelty to Animals act (8+7)
3	a) Describe the content and format for preparation of clinical trial dossier b) Describe the Functions, responsibilities and organization of state Licensing Authority (8+7)
4	Describe the structure, rules and regulations of BIS & ISO standards.
5	Apply your knowledge to explain the concept of (a) Copyright (b) Trademarks (7+8)
6	Evaluate the importance of stability studies in pharmaceutical development and critically assess the stability requirements as per ICH guidelines. (15)
7	Analyze the objectives and examine the role of DPCO & NPPA in regulating drug prices. (15)
8	a) Explain Industrial Designs and Geographical Indications, highlighting their basic concepts and importance in intellectual property. b) Give an informative note on IPR VS Regulatory affairs (10+5)