



G. PULLA REDDY COLLEGE OF PHARMACY
AUTONOMOUS

Affiliated to **Osmania University** Approved by **PCI** & Accredited by **NAAC**
Mehdipatnam, Hyderabad - 500028. Telangana State.

M. PHARM SECOND SEMESTER (PCI) REGULAR EXAMINATIONS, OCT- 2026

Branch: PHARMACEUTICS

Subject: COSMETIC AND COSMECEUTICALS

QP Code: MPHII04TE26

Time: 03 Hours

Max Marks: 75

Note: Answer Any **FIVE** Questions.

5 X 15 = 75M

S. No	Questions
1	a. What conditions must a manufacturer fulfill to secure a cosmetic manufacturing license under Indian regulations? 6M b. How do Indian cosmetic laws distinguish between misbranded and spurious products? 3M c. Explain how loan licensing operates within this framework. 6M
2	a. Walk through the biological structure of skin, highlighting how physiological changes in the epidermal layer contribute to dry skin and wrinkle formation. 7M b. Outline the primary phases of the hair growth cycle and discuss essential scalp and hair hygiene practices for maintaining overall hair health. 8M
3	a. Classify the main types of surfactants used in cosmetics and cosmeceuticals with examples and functions. What factors impact the performance of preservatives in topical products?
4	a. Develop cosmeceutical formulation for management of hyperpigmentation. Explain how each works on a cellular level
5	a. List key botanical ingredients commonly used across skin care, hair care, and oral hygiene products, detailing their specific biological activities.
6	a. Formulate a multi-action oral care strategy that simultaneously addresses dental caries, gum bleeding, and tooth sensitivity.
7	a. Evaluate the standards established by private certification organizations (such as COSMOS) regarding allowed preservatives and emulsifiers in certified herbal cosmetics. b. Discuss about controversial ingredients in cosmetics and cosmeceuticals.
8	a. Design a broad-spectrum sunscreen formulation and outline the regulatory requirements.



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M. PHARM SECOND SEMESTER (PCI) REGULAR EXAMINATIONS, OCT- 2026

Branch: PHARMACEUTICS

Subject: COMPUTER AIDED DRUG DELIVERY SYSTEM

QP Code: MPHII03TE26

Time: 03 Hours

Max Marks: 75

Note: Answer Any **FIVE** Questions.

5 X 15 = 75M

S. No	Questions
1	Define mechanistic modelling in pharmaceutical research and development.
2	Explain the ICH Q8 guideline in relation to Quality-by-Design in pharmaceutical development.
3	Apply computational modelling concepts to explain the influence of solubility and intestinal permeation on drug absorption.
4	Analyze the use of factorial design and screening design in computer-aided pharmaceutical formulation development.
5	Evaluate a computer-aided strategy for the development of pharmaceutical emulsions, considering appropriate optimization parameters.
6	Evaluate the theoretical background, model construction, parameter sensitivity analysis and virtual-trial approach used in gastrointestinal absorption simulation.
7	Design a computer-simulation approach for studying pharmacokinetic and pharmacodynamic behaviour at the whole-organism and isolated-tissue levels.
8	Evaluate the pharmaceutical applications of artificial intelligence, robotics and computational fluid dynamics with reference to their advantages, disadvantages and current challenges.



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M. PHARM SECOND SEMESTER (PCI) REGULAR EXAMINATIONS, OCT- 2026

Branch: PHARMACEUTICS

Subject: ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS

QP Code: MPHII02TE26

Time: 03 Hours

Max Marks: 75

Note: Answer Any **FIVE** Questions.

5 X 15 = 75M

S. No	Questions
1	Define absolute bioavailability and relative bioavailability. Discuss the methods for determination of bioavailability in detail.
2	Explain the following: A) Elimination half-life B) Apparent volume of distribution C) Total body clearance D) Area under the curve (AUC)
3	Analyze the causes of non-linearity and discuss the Michaelis–Menten equation for the estimation of K_m and V_{max} .
4	Estimate the pharmacokinetic parameters using a one-compartment open model following intravenous bolus administration.
5	Write a note on: A) Applications of biotechnological products B) Types of immunotherapy
6	Discuss compendial and alternative methods of dissolution.
7	Enumerate the factors affecting drug absorption and explain the pH-partition hypothesis of drug absorption.
8	Outline the study designs used for bioequivalence studies and discuss the crossover design in detail.



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M. PHARM SECOND SEMESTER (PCI) REGULAR EXAMINATIONS, OCT– 2026

Branch: PHARMACEUTICS

Subject: MOLECULAR PHARMACEUTICS (NANO TECH AND TARGETED DDS)

QP Code: MPHII01TE26

Time: 03 Hours

Max Marks: 75

Note: Answer Any **FIVE** Questions.

5 X 15 = 75M

S. No	Questions
1	Explain tumor targeting and discuss the different methods used for delivering drugs specifically to tumors. 15M
2	Discuss the different methods used for preparation of nanoparticles and explain evaluation parameters. 15M
3	Describe Hybridoma technology for the production of monoclonal antibodies. Explain the different methods used for characterization of monoclonal antibodies. (8+7)M
4	What are niosomes? Explain their structure and components used in their formulation. Discuss their advantages, limitations and applications. (7M + 8M)
5	Explain the concept of therapeutic antisense molecules and aptamers. Discuss their mechanism of action and applications. (7+8)M
6	A). Explain the structure, components and method of preparation of Phytosomes. 7M B). Explain about Intranasal drug delivery systems. 8M
7	Explain the methods of preparation and evaluation of pharmaceutical aerosols. 15M
8	Explain about ex-vivo & in-vivo approaches for gene therapy. 15M