

This question paper contains 2 printed pages]

**PPM—09—2025**

**FACULTY OF SCIENCE & TECHNOLOGY**

**M.Pharm (First Year) (Second Semester) EXAMINATION**

**JUNE, 2025**

**MOLECULAR PHARMACEUTICS**

**Paper MPH201T**

**(Nonotech. Targetted DDS)**

**(Wednesday, 18-06-2025)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

- N.B. :—*
- (i) All questions are compulsory.
  - (ii) Answers to the points only.
  - (iii) Figures to the right indicate full marks.
  - (iv) Draw the diagrams wherever necessary.

1. Answer the following :

10×2=20

- (a) What is nanotechnology ?
- (b) Give the advantages of nanoparticles.
- (c) Define niosomes.
- (d) What is microcapsules ?
- (e) Give the classification of propellants.
- (f) Enlist potential target discuss for gene therapy.

P.T.O.

- (g) What is pulmonary drug delivery system ?
- (h) Give the objectives of Targeted drug delivery system.
- (i) Define gene therapy.
- (j) What is biodistribution ?
2. Solve any *two* of the following : 2×10=20
- (a) Explain in detail the methods of active and passive targeting using particulate carriers.
- (b) Discuss in detail preparation and evaluation of Liposomes.
- (c) What is Aerosols ? Explain in detail evaluation tests of aerosols.
3. Solve any *seven* of the following : 7×5=35
- (a) Discuss in brief tumor targeting.
- (b) Give methods of preparation of nanoparticles.
- (c) Describe monoclonal antibodies.
- (d) Give evaluation of Intra nasal route delivery system.
- (e) Discuss in brief about viral and non-viral gene transfer.
- (f) Explain in brief knowledge of therapeutic antisense molecule.
- (g) Give methods of preparation of Niosomes.
- (h) Describe in brief about genetherapy.
- (i) Write in brief about phytosomes.

This question paper contains 3 printed pages]

**PPM—21—2025**

**FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY**

**M. Pharm (First Year) (Second Semester) EXAMINATION**

**JUNE, 2025**

**ADVANCED BIOPHARMACEUTICS AND PHARMACOKINETICS**

**Paper-MPH 202T**

**(Friday, 20-06-2025)**

**Time : 2.00 p.m. to 5.00 p.m.**

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*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) Illustrate your answers with diagram wherever necessary.*

*(iii) Answer to the point only.*

1. Answer *all* of the following :

10×2=20

(a) Enlist various causes of non-linearity.

(b) Give BCS classification system.

(c) Define Bioavailability and Bioequivalence.

(d) Mention cytochrome P450 based drug interactions.

P.T.O.

- (e) Define endocytosis and phagocytosis.
- (f) What are applications of dissolution testing ?
- (g) Write concept of first pass metabolism.
- (h) Enlist various types of dissolution apparatus.
- (i) Define Pharmacokinetics and Pharmacodynamics.
- (j) Draw labelled diagram of GIT.

2. Answer any *two* of the following : 2×10=20

- (a) Describe Bioavailability and explain factors affecting it.
- (b) Explain factors affecting GI absorption of drugs.
- (c) Explain one compartment model-IV Bolus.

3. Answer any *seven* of the following : 7×5=35

- (a) Explain Michaelis-Menten equation.
- (b) Give clinical significance of bioequivalence studies.
- (c) Describe IVIVC correlation.
- (d) Explain in-vitro dissolution and drug release testing for extended release.

- (e) Explain passive diffusion.
- (f) Describe pharmacokinetics and dynamics of biotechnology drugs.
- (g) Write about monoclonal antibodies.
- (h) Give significance of protein binding.
- (i) Explain prodrugs.

This question paper contains 3 printed pages]

**PPM—33—2025**

**FACULTY OF SCIENCE & TECHNOLOGY**

**M. Pharm. (Second Semester) EXAMINATION**

**JUNE, 2025**

**COMPUTER AIDED DRUG DEVELOPMENT**

**MPH 203T**

**(Monday, 23-06-2025)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) Answer to the point only.*

*(iii) Figures to the right indicate full marks.*

1. Solve the following :

10×2=20

(a) Define artificial intelligence.

(b) Enlist the various uses of computer in R and D.

(c) What is statistical modeling ?

(d) Write down current challenges in AI.

(e) Give a short note on BCRP.

P.T.O.

- (f) Define population modeling.
- (g) Write down the regulatory needs of QBD.
- (h) Describe nucleotide transporters.
- (i) Write down ethics in computing.
- (j) Define ICH Q.8.

2. Solve any *two* of the following : 2×10=20

- (a) Explain in detail about computational modeling of drug disposition.
- (b) Discuss in detail Qb.D concept in pharmaceutical product development with respect to ICH guidelines.
- (c) Write down in detail descriptive Vs mechanistic modeling.

3. Solve any *seven* of the following : 7×5=35

- (a) Write down the advantages and disadvantages of AI.
- (b) Describe the role of computer in clinical data collection and management.
- (c) Write down the role of computers in pharmaceutical research and development.
- (d) Write down the applications of Robotics.
- (e) Describe in detail computer simulations in pharmacokinetics.

- (f) Write a note on ASBT and OCT.
- (g) Write down the benefits of pharmaceutical automation in packaging.
- (h) Write down the applications of computational fluid dynamics in pharmacy.
- (i) What are Biowaiver considerations to be considered to get the exception In-vivo studies ?

This question paper contains 3 printed pages]

**PPM—45—2025**

**FACULTY OF PHARMACEUTICAL SCIENCES**

**M. Pharm. (First Year) (Second Semester)**

**EXAMINATION JUNE, 2025**

**COSMETIC AND COSMECEUTICALS**

**(MPH204T)**

**(Wednesday, 25-06-2025)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) Figures to the right indicate full marks.*

*(iii) Draw figures wherever necessary.*

1. Solve the following :

10×2=20

(a) Differentiate between cosmetic and cosmeceuticals.

(b) What are sunscreens ? Give example

(c) What is SPF ? Give example.

(d) Give *four* reasons for dandruff.

P.T.O.

(e) Define cosmetics as per Indian regulations.

(f) What are misbranded cosmetic ?

(g) Define emollients with example.

(h) Enlist herbal ingredients used in hair care.

(i) Define perfumes.

(j) What are Humectants ? Give example.

2. Solve the following (any *two*) :

2×10=20

(a) Explain the structure of hair and hair growth cycle.

(b) Explain the requirement of factory premises for manufacture of cosmetics.

(c) Explain surfactants with its detail classification and applications.

3. Solve the following (any *seven*) :

7×5=35

(a) Which are common problems associated with oral cavity ?

(b) Give a brief not on perfumes used in cosmetic.

(c) Discuss cosmos guidlines for herbal cosmetic.

(d) Explain controversial ingredients.

- (e) What are cleansing care needs for face, hands and feet ?
- (f) Discuss evaluation parameters for shampoo.
- (g) Write building blocks for formulation of cold cream.
- (h) Classify and explain viscosity modifiers in detail.
- (i) Draw and explain labelled structure of skin.