

This question paper contains 3 printed pages]

**LQ—08—2023**

**FACULTY OF SCIENCES AND TECHNOLOGY**

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

**JULY/AUGUST, 2022**

**MOLECULAR PHARMACEUTICS**

**(Nano Tech Targetted DDS)**

**(MPH-201T)**

**(Tuesday, 11-07-2023)**

**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. Answer the following questions :**

**10×2=20**

**(a) What is targeted DDS ?**

**(b) Define Niosomes.**

**(c) What are the disadvantages of Nanotechnology ?**

**(d) Define Biodistribution.**

**(e) What is Microspheres ?**

**(f) Enlist evaluation of intra nasal route delivery system.**

**P.T.O.**

WT

( 2 )

LQ—08—2023

- (g) Give the function of aerosol.
- (h) Define Gene therapy.
- (i) Define nanoparticles.
- (j) Enlist evaluation test of phytosomes.

2. Solve any *two* :

2×10=20

- (a) Describe the preparation and evaluation of Liposomes.
- (b) Explain in detail preparation and evaluation of pharmaceutical aerosols.
- (c) Discuss the methods of active and passive targeting using particulate carriers.

3. Solve any *seven* :

5×7=35

- (a) Describe in brief about tumor targeting.
- (b) Write in brief about preparation techniques of nanoparticles.
- (c) Write a note on monoclonal antibodies.
- (d) Describe in detail manufacturing process of microcapsules.

- (e) Write in brief about types of intra nasal route delivery systems.
- (f) Describe the different types of vectors in gene therapy.
- (g) Write in brief about knowledge of therapeutic antisense molecule.
- (h) What are the propellant ? Give their significance.
- (i) Give the preparation and applications of aquasomes.

This question paper contains 2 printed pages]

**LQ—18—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**

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

**JULY/AUGUST, 2023**

**ADVANCED BIOPHARMACEUTICS AND PHARMACOKINETICS**

**Paper MPH-202T**

**(Thursday, 13-07-2023)**

**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) Answer to the point only.**

**1. Solve the following :**

**10×2=20**

**(a) Mention different sites of presystemic metabolism.**

**(b) Enlist methods for studying drug uptake.**

**(c) Write the objectives of dissolution profile comparison.**

**(d) Give alternative methods of dissolution testing.**

**(e) State the Michaelis Menten equation.**

**(f) Write the assumptions regarding the delayed distribution models.**

**(g) Define bioavailability and bioequivalence.**

**(h) What is Pilot and Pivotal Bioequivalence Study ?**

**(i) Write significance of vaccines.**

**(j) What are biological products ? Give examples.**

**P.T.O.**

WT

( 2 )

LQ—18—2023

2. Solve any *two* of the following :

2×10=20

- (a) Explain pharmaco-technical factors affecting GI absorption of a drug.
- (b) Describe the quantitative methods of evaluation of bioavailability.
- (c) Describe formulation and evaluation of monoclonal antibodies.

3. Solve any *seven* of the following :

7×5=35

- (a) State pH partition theory. Explain the assumptions on which this statement is based.
- (b) Explain protein and peptides as drug delivery system.
- (c) With a typical plasma concentration time profile; explain pharmacokinetic parameters.
- (d) Define drug interaction and explain tissue-binding interaction.
- (e) Explain rate, rate constant and order of reactions.
- (f) Write the advantages of urinary excretion data, in analysis of pharmacokinetic system.
- (g) Explain compartment modelling.
- (h) Describe absorption of drug from non-per or extravascular routes.
- (i) Explain regulatory aspects of Biotechnology based pharmaceuticals.

LQ—18—2023

2

This question paper contains 2 printed pages]

**LQ—28—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**  
**M. Pharma (Second Semester) EXAMINATION**  
**JULY/AUGUST, 2023**  
**COMPUTER AIDED DRUG DELIVERY SYSTEM**  
**MPH 203T**

**(Saturday, 15-7-2023)**

**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 : 2×10=20
- (a) Define Artificial Intelligence.
  - (b) What is integrated delivery network (IDN) ?
  - (c) Describe briefly 3D QSAR model for BCRP.
  - (d) Enlist applications of computational fluid dynamics in pharmaceuticals.
  - (e) What are the applications of GI simulation technology ?
  - (f) What is Lumped parameter PKPD model ?
  - (g) What is Parsimony Principle in computer-assisted drug design and QSAR ?
  - (h) What are the objectives of virtual trial simulation ?
  - (i) Describe in brief Pharmaceutical Statistics.
  - (j) Enlist the innovative uses of computers in R&D.

**P.T.O.**

WT

( 2 )

LQ—28—2023

2. Solve any *two* of the following :

10×2=20

- (a) Outline the Quality by Design (QbD) concept in pharmaceutical product development with respect to International conference on harmonization guidelines.
- (b) Discuss the optimization parameters and different optimization techniques in formulation development.
- (c) Explain the role of computers in clinical data collection and management.

3. Solve any *seven* of the following :

5×7=35

- (a) Differentiate descriptive Vs. mechanistic modeling.
- (b) Explain the computational modeling concept with respect to drug absorption and solubility.
- (c) Discuss the role of pGP efflux transporter in drug disposition.
- (d) Describe the use of computers in market analysis.
- (e) What are the Biowaiver considerations to be considered to get the exception for In-vivo studies ?
- (f) Write the importance of computer simulation in pharmaco-dynamic studies.
- (g) Write the benefits of pharmaceutical automation in packaging.
- (h) What is Robotics ? Mention its application.
- (i) Describe the applications of computational fluid dynamics in pharmacy.

LQ—28—2023

2

This question paper contains 2 printed pages]

**LQ—38—2023**

**FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY**

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

**JULY/AUGUST, 2023**

**COSMETICS AND COSMECEUTICALS**

(MPH 204-T)

(Tuesday, 18-7-2023)

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 Spurious cosmetics.
- (b) Draw well labelled diagram of hair.
- (c) Mention pharmaceutical formulations used in treatment of acne.
- (d) Enlist raw material used for toothpaste.
- (e) Write ideal characteristics of lipsticks.
- (f) Define cosmetic and cosmeceuticals.
- (g) What are preservatives ? Give examples.
- (h) Write characteristics of sunscreen agents.
- (i) Mention uses of herbal cosmetics.
- (j) What is emollients ? Enlist examples.

P.T.O.



WT

( 2 )

LQ—38—2023

2. Solve any *two* :

2×10=20

- (a) Explain regulatory requirement for labelling of Cosmetics and regulatory provisions related to import of Cosmetics.
- (b) Describe building blocks for formulation of moisturizing cream and vanishing cream.
- (c) Explain formulation and evaluation of Shampoo.

3. Solve any *seven* :

7×5=35

- (a) Explain formulation and evaluation of dental cavity filling products.
- (b) Describe structure of hair and hair growth cycle.
- (c) Write the classification of perfumes. Give example.
- (d) Why is steric acid used in formulation of Vanishing Cream ? Mention uses of ingredient used in formulation.
- (e) Classify sunscreen products and mention its formula.
- (f) Explain different conditions for obtaining licence for cosmetics.
- (g) Write classification and applications of surfactants in Cosmetics.
- (h) Explain challenges in formulating herbal cosmetics.
- (i) Explain formulation aspects for products used in mouth odour.

LQ—38—2023

2