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

[BPHARM 0321] MARCH 2021 Sub. Code: 2065

(SEPTEMBER 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER – VI

PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS

Q.P. Code : 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Write about the pharmaceutical factors influencing drug absorption.
2. Discuss the method of measuring of bioavailability.
3. Give brief summary on Michaelis - Menton equation.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write the factors affecting protein drug binding.
2. Explain the clearance.
3. Explain the one compartment model following intravenous injection.
4. Pharmacokinetic model.
5. Explain steady state drug level.
6. Explain two compartment model.
7. Explain factors causing non linearity.
8. Method to enhance the bioavailability of poorly soluble drugs.
9. Bio equivalence studies.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Active diffusion.
2. Process of Biliary excretion of drug
3. Biotransformation
4. Dissolution.
5. Pharmacokinetics.
6. Loading dose.
7. Absorption.
8. Absolute bioavailability.
9. Clearance.
10. Clinical significance of protein binding.

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

[BPHARM 0921] **SEPTEMBER 2021** **Sub. Code: 2065**

(SEPTEMBER 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION
PCI Regulation 2017 - SEMESTER - VI
PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS
Q.P. Code : 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Explain physicochemical factors influencing drug absorption through Gastro Intestinal Tract (GIT).
2. Explain one compartment model following extra vascular administration.
3. Discuss different methods used in bioequivalence studies.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Explain tissue permeability of drugs in details.
2. Write about clinical significance of protein binding of drugs.
3. Write a detail about the phase II reaction of metabolism.
4. Factors affecting drug metabolism.
5. Factors affecting excretion of drug.
6. Determination of bioavailability.
7. Types of pharmacokinetic model.
8. Two compartment open model.
9. Non linear pharmacokinetics.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. Endocytosis.
2. Apparent volume of drug distribution.
3. Renal clearance.
4. First pass metabolism.
5. Intravenous infusion.
6. Multi dose.
7. Metabolism.
8. One compartment open model.
9. Non renal route of drug excretion.
10. Bio pharmaceutics.

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

[BPHARM 0122] JANUARY 2022 Sub. Code: 2065
(MARCH 2021 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS
Q.P. Code : 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss the mechanism of drug absorption through Gastro Intestinal Tract (GIT).
2. Give brief summary on kinetics of multiple dosing.
3. Discuss about factors affecting drug metabolism.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain apparent volume of drug distribution.
2. Write about kinetic of protein binding.
3. Method enhances the dissolution rate.
4. Plasma and tissue protein binding drug.
5. Non compartment model.
6. *Invitro* and *Invivo* correlation.
7. Factors causing non linearity.
8. Steady state drug level.
9. One compartment open model for intravenous infusion.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Mention the pharmaceutical formulation factors.
2. Factors affecting protein drug binding.
3. Testing of kidney function.
4. Bioequivalence.
5. Bioavailability.
6. Application of pharmacokinetics.
7. Difference between linear and non linear.
8. Elimination.
9. Two compartment model.
10. Total body clearance.

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

[BPHARM 0522] MAY 2022 Sub. Code: 2065

(SEPTEMBER 2021 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER - VI

PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS

Q.P. Code : 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain the pharmaceutical factors influencing the absorption of drug through GIT with examples.
2. Explain the Michaelis - Menton method of estimating parameters.
3. Explain the methods to enhance the dissolution rate and bioavailability of poorly soluble drugs.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain the Clinical significance of protein binding of drugs.
2. Explain the Non renal routes of drug excretion of drugs
3. Bioequivalence studies
4. Explain the steady state drug levels and calculation of loading doses.
5. Explain the Factors causing Non-linearity.
6. Explain the elimination rate constant.
7. Explain the physiological models
8. Explain the Non compartment models
9. Methods of assessment of bioavailability

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Tissue Permeability.
2. What is relative bioavailability
3. What is apparent volume of distribution
4. Renal clearance
5. Any two phase II reactions
6. In-vitro-in-vivo correlations
7. AUC
8. Steady state concentration
9. MRT
10. Maintenance dose

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

[BPHARM 1022] OCTOBER 2022 Sub. Code: 2065
(MARCH 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS
Q.P. Code : 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss the elements of protocol for bioequivalence studies.
2. Estimate the Pharmacokinetics parameters of the drug using Sigma minus method adopting one compartment open model for a bolus Intravenous Injection.
3. Explain the patient related factors influencing the absorption of drugs through GIT with examples.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Clinical significance of protein binding of drugs.
2. Factors causing Non-linearity.
3. Michaelis-menton method of estimating parameters.
4. Phase I metabolism.
5. Non compartment models.
6. Method of residuals.
7. Loading and maintenance doses.
8. Absolute and relative bioavailability.
9. Non renal routes of drug excretion of drugs.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Active transport.
2. Renal clearance.
3. MRT.
4. Michaelis-menton equation.
5. Physiological Barriers.
6. Non linear pharmacokinetics.
7. Drug disposition.
8. Therapeutic window.
9. Biological half life (t½).
10. Volume of distribution (vd).

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

[B.PHARM 0323] MARCH 2023 Sub. Code: 2065
(SEPTEMBER 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER IV – BIOPHARMACEUTICS AND PHARMACOKINETICS

Q.P. Code: 562065

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain the role of physiological barriers to drug distribution.
2. Describe the kinetics of dose dependent model with the help of an equation.
3. Detail the principle mechanism of transportation of drug molecule across various membranes.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Draw a plasma drug concentration Vs time profile and mention all possible kinetic parameters.
2. Explain the concept of clearance.
3. Kinetics of protein binding.
4. Tissue binding of drug.
5. Theories of drug dissolution.
6. First pass metabolism.
7. Apparent volume of distribution.
8. Outline in brief about various of pharmacokinetic models.
9. Note on tubular reabsorption.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Endocytosis.
2. Bioequivalence.
3. C_{max} and $T_{max.}$
4. Capacity limited kinetics.
5. Absolute bioavailability.
6. BCS classification.
7. Recite a simple block diagram of one and two compartment model.
8. Tissue binding and its effect.
9. Equate the rate of excretion.
10. Recall Phase I and II reactions.

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