BIO-PHARMACEUTICS 6TH SEM IMPORTANT QUESTIONS

DEPTH OF BIOLOGY

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UNIT-I **10**

Hours

Introduction to Biopharmaceutics

Absorption; Mechanisms of drug absorption through GIT, factors influencing drug absorption though GIT, absorption of drug from Non per oral extra-vascular routes, **Distribution** Tissue permeability of drugs, binding of drugs, apparent, volume of drug distribution, plasma and tissue protein binding of drugs, factors affecting protein-drug binding. Kinetics of protein binding, Clinical significance of protein binding of drugs

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10 MARKS QUESTION

1. Explain bio-pharmaceutics and write a shot note on absorption process/ distribution process DEPTH OF BIOLOGY

05 MARKS QUESTION

1. What is absorption? Explain factors affecting absorption
2. Elaborate the mechanism of drug absorption through GIT
3. Discuss the clinical significance of protein binding of drug

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Discuss the Wagner nelson method for estimation of Ka

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02 MARKS QUESTION

1. Define drug absorption
2. Define drug distribution
3. Mention the factors affecting protein binding
4. Mention the factors affecting absorption/ distribution
5. Define Fick's first law of diffusion with equation
6. Define pinocytosis
7. Differentiate between therapeutic index and therapeutic range
8. Define apparent volume of distribution

UNIT- II **10**
Hours

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Elimination: Drug metabolism and basic understanding metabolic pathways renal excretion of drugs, factors affecting renal excretion of drugs, renal clearance, Non renal routes of drug excretion of drugs

Bioavailability and Bioequivalence: Definition and Objectives of bioavailability, absolute and relative bioavailability, measurement of bioavailability, *in-vitro* drug dissolution models, *in-vitro-in-vivo* correlations, bioequivalence studies, methods to enhance the dissolution rates and bioavailability of poorly soluble drugs.

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10 MARKS QUESTION

1. Define bio-availability and bio- equivalence . Mention the methods used to determine bioavailability
2. Define bio- availability . Mention factors affecting bioavailability and also discuss the pharmacokinetic methods for measurement of bioavailability
3. Discuss various approaches for enhancing the solubility of poor soluble drug

05 MARKS QUESTION

1. Explain clearance [total body clearance and organ clearance] . Mention it`s advantages
2. Discuss the objectives of bio-availability
3. Factors affecting renal excretion of drug

4. Discuss the significance of BCS classification system in determining IVIVC

5. Discuss diffusion layer theory and the variable that influence drug dissolution using Noyes- Whitney equation

02 MARKS QUESTION

1. Define elimination
2. Explain bio-availability
3. Define bio equivalence
4. Define bioavailable fraction
5. What is absolute bioavailability
6. Explain relative bioavailability
7. What is renal clearance
8. What are non renal route of drug excretion
9. Define zero order rate process with example

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UNIT- III **10 Hours**

Pharmacokinetics: Definition and introduction to Pharmacokinetics, Compartment models, Non compartment models, physiological models, One compartment open model. (a). Intravenous Injection (Bolus) (b). Intravenous infusion and (c) Extra vascular administrations. Pharmacokinetics parameters - K_E ,t1/2,Vd,AUC,Ka, Clt and CL_R- definitions methods of eliminations, understanding of their significance and application

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10 MARKS QUESTION

1. Discuss one compartment open model of a drug given by IV infusion with graph and equation DEPTH OF BIOLOGY

05 MARKS QUESTION

1. Explain MRT [mean residence time] and discuss advantage & dis-advantage of non compartment technique DEPTH OF BIOLOGY
2. What are pharmacokinetic model? Explain the concept of physiological pharmacokinetic model
3. What is the influence of K_a and K_e on C_{max}, T_{max} and AUC ?
4. Describe plasma level time curve with parameter

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02 MARKS QUESTION

1. Define extra vascular administration
2. Define area under curve [AUC]
3. Define drug disposition
4. Define trapezoidal rule
5. Define dose dependent kinetics

UNIT- IV **08 Hours**

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Multicompartment models: Two compartment open model. IV bolus

Kinetics of multiple dosing, steady state drug levels, calculation of loading and mainetnance doses and their significance in clinical settins.

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10 MARKS QUESTION

1. Discuss 2 compartment open model [IV bolus] in detail

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05 MARKS QUESTION

1. Explain multi compartment model and give a detail note on kinetics of multiple dosing

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02 MARKS QUESTION

1. In compartment modelling what does the term `open` mean?

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UNIT- V **07 Hours**

Nonlinear Pharmacokinetics: a. Introduction, b. Factors causing Non-linearity.

c. Michaelis-menton method of estimating parameters, Explanation with example of drugs.

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05 MARKS QUESTION

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1. Discuss the cause of non- linearity in pharmacokinetic
2. Write Michaelis menton equation. How V_{max} and K_m is estimated ?

02 MARKS QUESTION

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1. Define capacity limited metabolism

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