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B PHARM
(SEM VI) THEORY EXAMINATION 2022-23
BIOPHARMACEUTICS AND PHARMACOKINETICS

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a. Write the name the various barriers for drug distribution.

b. Define apparent volume of distribution and protein binding of drug.

c. Define renal clearance. Give the name of non-renal routes of drug excretion of drugs.

d. Define bio-availability and bio-equivalence.

e. Write the difference between absolute with relative bioavailability.

f. Give the advantages of physiological models.

g. Define total clearance.

h. What is the significance of maintaining steady state drug levels in pharmacokinetics?

i. Define non-linearity.

j. Give Michaelis-Menten equation.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a. Enlist various factors influencing GI absorption of a drug from its dosage form and explain physicochemical factors affecting drug absorption in detail.

b. Discuss in detail two-compartment open model for a drug administered as IV Bolus. Give the schematic representation, graphs and equations for the same.

c. What is the difference between linear and non-linear pharmacokinetic? List out the reasons for non-linearity in pharmacokinetic studies.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a. Discuss in detail the various pharmaceutical factors affecting drug absorption.

b. Explain the following terms- Clearance, Total body clearance, Hepatic clearance and Renal clearance.

c. Describe the method to calculate absorption rate constant for one compartment open model extra vascular first order kinetics.

d. What is the reason behind initial rapid decline and terminal slow decline of the conc. of drug in the central compartment? Discuss the reason.

e. How will you affect dosage adjustment in renal failure?

f. Describe the various methods aimed at enhancing bioavailability of drug from its dosage form.

g. Describe the kinetics of capacity-limited or saturable processes of non-linearity.

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