Sub Code:BOP472

Paper Id: 150702 Roll No:

B. PHARM
(SEM-VII) THEORY EXAMINATION 2019-20
PHARMACEUTICS- IX (BIOPHARMACEUTICS AND PHARMACOKINETICS)

Time: 3 Hours *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

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

a. What is perfusion rate?
b. What AUC and AUMC?
c. What is Fick's law of diffusion?
d. Classify drugs on the basis of BCS.
e. Give formulae for clearance, elimination half life and volume of distribution.
f. What is sink condition?
g. Give example of drugs binds to human serum albumin and lipoproteins.
h. Define bioavailability & bioequivalence.
i. What is compartment model?
j. Write down the Henderso n- Hasselbalch equation for weak acid and base.

SECTION B

2. **Attempt any *three* of the following:** **10x3=30**

a. Discuss in detail about different physicochemical factors affecting drug absorption.
b. Derive an equation for one compartment open model IV bolus administration and determine the V_d, elimination $t_{1/2}$, and Clearance.
c. How will you adjust the dose of any drug in patient with renal failure? Discuss.
d. Discuss the design and regulatory requirement for bioequivalence studies.
e. What are different types of Pharmacokinetics model? Explain.

SECTION C

3. **Attempt any *one* part of the following:** **10x1=10**

a. Discuss significance of biopharmaceutical classification system.
b. Gastric emptying time and intestinal transit time affects drug absorption. Comment.

4. **Attempt any *one* part of the following:** **10x1=10**

a. Determine the Elimination and excretion rate constant by rate of excretion method and write down the advantages of this method in analysis of pharmacokinetics system.
b. Discuss the significance of plasma protein drug binding and explain factors affecting protein drug binding.

5. **Attempt any *one* part of the following:** **10x1=10**

a. Discuss objective, measurement and its significance of bioavailability studies.
b. Discuss the various factors which enhance the bioavailability of drugs with examples.

6. **Attempt any *one* part of the following:** **10x1=10**

a. Determine the absorption rate constant following two compartment model using Loo Riegelmann method and advantages of this method.
b. Determine the Elimination and excretion rate constant by rate of excretion method.

7. **Attempt any *one* part of the following:** **10x1=10**

a. Discuss the significance of *in vitro in vivo* correlation.
b. Derive an equation for one compartment open model extra vascular administration and determine K_E, elimination $t_{1/2}$, and Clearance.