FINAL YEAR B.PHARM. SEMESTER-VII (2011 Course) :
SUMMER - 2019
SUBJECT: BIOPHARMACEUTICS AND PHARMACOKINETICS

Day : Saturday
Date : 04/05/2019
S-2019-4458
Time : 02.00 PM TO 05.00 PM
Max. Marks: 80

N.B.:

1) Q. No. 1 and Q. No. 5 are **COMPULSORY.** Out of the remaining attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
2) Both the sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

Q.1 Answer the following (**Any Five**) **(10)**

a) Explain Absolute surface area and effective surface area.
b) What is Danckwert's theory of drug dissolution?
c) Highlight the role of vehicle in liquid orals with respect to its effect on drug absorption.
d) Define renal clearance and give its equation.
e) What is enzyme inhibition? Highlight its significance.
f) Highlight the clinical significance of drug-drug interactions, with respect to displacement from protein binding site.

Q.2 **a)** Explain in detail the influence of polymorphism on drug absorption. **(07)**
b) Give an account of physiological barriers influencing drug distribution. **(08)**

Q.3 **a)** Explain the influence of urine pH and drug pka on renal clearance of drugs. **(07)**
b) Give an account of chemical factors influencing biotransformation. **(08)**

Q.4 Write notes on any **TWO** of the following: **(15)**

a) Kinetics of protein drug binding
b) Passive diffusion of drug across biological membrane
c) Percutaneous drug absorption.

SECTION-II

Q.5 Answer the following: (**Any Five**) **(10)**

a) Highlight the disadvantages of compartmental modeling.
b) What is flip flop phenomenon?
c) What is extraction ratio? Give its equation.
d) Define bioavailability and bioequivalence.
e) In compartment modeling, what do the term 'compartment', 'Open' and 'close' mean?
f) What is meant by mixed order kinetics?

Q.6 **a)** Explain the maxillary and catenary modelling. **(07)**
b) Derive an expression for pharmacokientic parameters after intravenous bolus injection of drug. Assume fist order kinetics and one compartment open model. **(08)**

Q.7 **a)** Explain the use of urinary excretion data for determination of k_E. **(07)**
b) Give an account of the study designs for BA-BE studies. **(08)**

Q.8 Write notes on any **TWO** of the following: **(15)**

a) Physiological modelling
b) Wagner Nelson method
c) Non-compartmental analysis.

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