BACHELOR OF PHARMACY (B. PHARM.) (CBCS-2019 COURSE)
B. Pharm. Sem-VI :SUMMER- 2022
SUBJECT : BIOPHARMACEUTICS & PHARMACOKINETICS

Day : Monday | Time : 10:00 AM-01:00 PM
Date : 18-07-2022 | **S-20683-2022** | Max. Marks : 75

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Answer to both sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Answer all the questions: **(20)**

i) How is Vitamin B 12 and polio vaccine absorbed when administered orally?
ii) Phenytoin, a very weak acid has pKa 8.2. Comment on its absorption behaviour.
iii) What is blood brain barrier and placental barrier?
iv) Glutathione conjugates are not detectable in urine. Why?
v) What is the influence of protein binding and displacement interaction on the elimination half-life of a drug?
vi) Define biotransformation and how does it differ from chemical stability.
vii) What is extraction ratio? Give its equation.
viii) Define drug effect and drug potency.
ix) What are the ideal features expected from dissolution apparatus?
x) Define bioavailability. What are the objectives of it?

Q.2 Attempt **ANY TWO** from the following: **(20)**

i) Derive equation for pharmacokinetics parameters after i.v. bolus injection of a drug. Assume it follows first order kinetics and body behaves as a one compartment open model.
ii) Explain Phase I and Phase II metabolism reactions with suitable examples.
iii) Discuss the approaches for enhancement of bioavailability.

SECTION – II

Q.3 Answer **ANY SEVEN** from the following: **(35)**

i) Write a note on facilitated drug transport mechanism of absorption.
ii) Explain the salt form of drug on drug absorption.
iii) Explain the various factors influencing drug distribution.
iv) Discuss the factors influencing passive reabsorption of drugs from tubules.
v) Define displacement interaction. What characteristics of the displacer and the displaced drug are important for displacement interactions to be clinically significant?
vi) Explain various compartment models.
vii) Discuss in detail in vitro drug dissolution testing methods.
viii) Derive the equation to obtain the pharmacokinetics parameter for i.v. infusion with loading dose assuming one compartment open model.
ix) Explain various types of bioequivalence studies.
x) What are single dose and multiple dose studies? Compare between the two.

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