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

Day : Tuesday | Time : 10:00 AM-01:00 PM

Date : 24-01-2023 | **W-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) Explain the mechanism of transport of Vitamin B_{12}.
ii) Thiopental has fast on set of action followed by rapid termination of action. Explain.
iii) Write the various steps involved in the distribution of drug. "Distribution of a drug is not uniform throughout the body." Justify.
iv) Influence of molecular weight on excretion behaviour of drugs.
v) A protein bound drug is pharmacokinetically and pharmacodynamically inert. Explain.
vi) Explain pro-drug and its significance.
vii) Define clearance, total body clearance and organ clearance.
viii) Explain methods to determine AUC.
ix) Define absolute and relative bioavailability. What is the basic difference between the two?
x) What is cross over design?

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

i) Derive the equation to obtain pharmacokinetics parameter for i.v. infusion with loading dose assuming one compartment open model.
ii) Explain the salt form of drug and polymorphism parameters on drug absorption.
iii) Give an account of the study designs for BA-BE studies.

SECTION – II

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

i) Explain enterophepatic circulation of drugs. Illustrate with diagrammatic presentation. What is the significance of such a cycling?
ii) Explain pH-partition theory? Give its importance and its limitations.
iii) Explain the various factors influencing drug distribution.
iv) Why is HAS considered a versatile protein for drug binding? Binding of drugs to erythrocytes could be as significant as binding to HAS. Explain.
v) Discuss the factors influencing passive reabsorption of drugs from tubules.
vi) Explain in detail methods of bioavailability measurement.
vii) Give an account physiological modelling.
viii) Assessment of pharmacokinetics parameters following IV bolus administration for one compartment open model.
ix) Kinetics of protein-drug binding.
x) What are different dissolution apparatus designs? Discuss with their applications.

* * * *