SUPPLEMENTARY
DOCTOR OF PHARMACY
Fourth Year Pharm. D. :SUMMER- 2022
SUBJECT : BIOPHARMACEUTICS & PHARMACOKINETICS

Day : Monday | Time : 02:00 PM-05:00 PM

Date : 26-09-2022 | **S-5747-2022** | Max. Marks : 70

N. B. :

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of the remaining answer **ANY TWO** question from each Section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q. 1 **a)** Answer **ANY FOUR** of the following: **(08)**

i) What are the types of Phase-I reactions in drug metabolism?
ii) What is plasma protein – drug binding?
iii) What is zero order kinetics?
iv) Describe interfacial barrier model (double barrier or limited solvation theory).
v) What is dialysis and hemoperfusion?
vi) What is the relationship between drug pKa, degree of ionization and renal clearance?

b) Which events occur from drug administration to its absorption? **(03)**

Q. 2 Describe the factors affecting drug distribution. **(12)**

Q. 3 **a)** Describe the dosage from characteristics and pharmaceutic ingredients related factors that affects the drug absorption. **(07)**

b) Discuss the non-renal routes of drug excretion. **(05)**

Q. 4 Write short notes on **ANY THREE** of the following: **(12)**

a) Hydrates / Solvates.
b) Drug absorption by passive diffusion.
c) Hydrolytic reactions in drug metabolism.
d) Danckwert's model (Penetration or Surface renewal theory).
e) Blood-brain barrier.

SECTION – II

Q. 5 **a)** Answer **ANY FOUR** of the following: **(08)**

i) What is chemical equivalence and pharmaceutic equivalence?
ii) What is principle of superposition?
iii) What are the objectives of bioavailability studies?
iv) What is bolus and infusion administration in compartmental modeling?
v) What is volume of distribution?
vi) Why one-compartment open model is called as instantaneous distribution model?

b) What is parallel design in bioequivalence study? **(03)**

Q. 6 Describe two-compartment open model for intravenous bolus administration. **(12)**

Q. 7 **a)** Explain one-compartment open model for intravenous infusion. **(07)**

b) Describe physiologic pharmacokinetic models. **(05)**

Q. 8 Write short notes on **ANY THREE** of the following: **(12)**

a) Urinary excretion studies in bioavailability measurement.
b) Pharmacodynamic parameters under plasma concentration-time profile.
c) Sources of nonlinearity.
d) Catemary model.
e) Drug accumulation in multiple dosage regimens .

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