

BIOPHARMACEUTICS AND PHARMACOKINETICS**Paper—6**

Time : Three Hours]

[Maximum Marks : 80

N.B. :— (1) Question No. 1 is compulsory.(2) Attempt any **four** questions out of remaining.

(3) Draw neat labelled diagrams wherever necessary.

1. Solve any **five** questions :

(a) What are the various causes of nonlinearity of drugs ?

(b) Explain any four factors affecting gastric emptying in drug absorption.

(c) What are the characteristics of microsomal enzymes ?

(d) Comment on ABC transporters.

(e) Define and explain absolute and relative bioavailability.

(f) Comment on biliary excretion of drugs.

(g) Explain in-vitro — in vivo correlation in brief.

5×4=20

2. (a) Discuss in detail physicochemical factors affecting drug absorption.

8

(b) Enlist non oral routes of drug absorption. Write about nasal and parenteral route of drug absorption in detail.

7

3. (a) Discuss physiological barriers for distribution of drugs.

8

(b) Comment on plasma-protein binding of drugs. Explain significance of drug-protein binding.

7

4. (a) Explain mechanisms of renal drug excretion.

8

(b) Define renal clearance and add a note on concept of clearance.

7

5. (a) Define bioavailability and bioequivalence. Enlist methods for measurement of bioavailability. Discuss pharmacokinetic method in detail.

8

(b) Comment on theories of dissolution.

7

6. (a) Elucidate pharmacokinetic parameters for one compartment open model after intravenous bolus administration.

8

(b) Discuss glucuronidation biotransformation reactions with examples.

7

7. Write short notes on (any **two**) :

(a) Study designs for bioequivalence testing

(b) USP dissolution testing apparatus

(c) Passive diffusion of drugs

(d) Volume of distribution.

7.5×2=15