5. Name the principle process in urinary excretion of drugs.

II. Long answers (Answer two out of three questions) 10x2=20

1. Write about the pharmaceutical factors influencing drug absorption.

2. Explain the one compartment open model following intravenous injection.

3. Discuss Phase I and Phase II metabolic reactions. (5+5)

III. Short answers (Answer seven out of nine questions) 5x7=35

1. Explain the kinetics of protein binding.

2. Given an account on non-renal routes of drug excretion of drugs.

3. Write note Method of residuals.

4. Discuss the bioequivalence study methods.

5. Discuss the method of measuring of bioavailability.

6. Write note on method to enhance the bioavailability of poorly soluble drugs.

7. Explain about the different types of dissolution apparatus.

8. Draw a graph of plasma drug concentration Vs time profile and define all pharmacokinetic parameters.

9. Discuss in brief about non-compartmental analysis.

******

B.Pharm Even Semester Examination, May, 2025

PHARMACEUTICAL SCIENCES

(6th Semester)

Course No: BP-604T

(Biopharmaceutics & Pharmacokinetics)

FM: 75

Time: 3 Hours

The figures in the right margin indicate full marks for the question

I. A Multiple Choice Questions 1x10=10

1. Greater the membrane/water partition coefficient of drugleads to

   a) Decrease the absorption

   b) Increase the absorption

   c) No change in absorption

   d) Increased transfer of the ionised species

2. Inflammatory conditions like trauma, increases the binding of basic drugs due to the _____

   a) Decreased globulin synthesis

   b) Decreased haemoglobin content

   c) Increased AAG level

   d) Kernicterus

3. The volume of blood that flows per unit time per unit volume of the tissue is called as

   a) Blood circulation rate

   b) Diffusion rate

   c) Perfusion rate

   d) All of the above

4. The following one renal clearance value is indicating that the clearance is equal to renal plasma flow rate.

   a) 0 b) Less than 130

   c) More than 130 d) 650

5. Volatile, tissue and blood insoluble drugs could excrete through

   a) Skin b) Bile

   c) Saliva d) Lung

6. Cyanide ion conjugation proceeds with the transfer of sulphur atom from thiosulphate to the cyanide ion in presence of enzyme _____ to form inactive thiocyanate.

   a) Rhodanese

   b) CYP 450

   c) UDP-glucuronyl transferase

   d) N-acetyl transferase

7. Carrier mediated/capacity-limited transport of drug can be best described by

   a) Zero order kinetics

   b) First order kinetics

   c) Linear kinetics

   d) Non-linear kinetics

8. The significance of loading dose is highest for drugs with:

   a) High clearance

   b) Long half-life

   c) Short duration of action

   d) Low Vd

9. When Ke> Ka, the plasma drug concentration vs. time curve may show ___

   a) Flip-flop kinetics

   b) Delayed elimination

   c) Fast absorption

   d) Reduced volume of distribution

10. In multiple dosing, steady-state is achieved after approximately:

    a) 2 half-lives b) 3 half-lives

    c) 5 half-lives d) 10 half-lives

I. B Objective type 2x5=10

1. What is vesicular transport?

2. Define Fick's first law of diffusion.

3. What is Biological half-life?

4. Define Extraction ratio.