UNIT-I

1. Enumerate the requirements of a drug substance to be absorbed into the biological system.  

   OR

2. What are the effects of formulation on drug absorption? Write in detail about the drug dissolution.

UNIT-II

3. Name the different mechanisms of drug absorption citing suitable examples. Explain in detail about the passive diffusion and active transport giving their relative merits.

   OR

4. A 50 kg woman was given a single intravenous dose of an antibacterial drug at a dose level of 6 mg/kg. Blood samples were taken at various time intervals. The concentration of the drug ($C_p$) was determined in the plasma fraction of each blood sample and the following data were obtained:

   $t$ (hrs): 0.25 0.50 1.0 3.0 6.0 12.0 18.0
   $C_p$ (μg/ml) 8.21 7.87 7.23 5.15 3.09 1.11 0.40

   What are the values for $V_d$, $K_e$ and $t_{1/2}$ for this drug?
UNIT-III

5. What is significance of Phase II biotransformation reactions? Explain the conjugation reactions with illustrative examples.

OR

6. What are Phase I and Phase II drug metabolism reactions? Explain the oxidative and reductive reactions with suitable examples.

UNIT-IV

7. Discuss the protocol for the design of bioavailability studies for 5 brands of tablets containing same dose of drug. How will you interpret the results?

OR

8. Define total body clearance and renal clearance. Write about the principal processes of urinary excretion.

UNIT-V

9. What are causes for drug interactions in the body? Explain the drug interactions involving food and excipients.

OR

10. Explain the techniques for the study of drug toxicity.