

(2Hours)

[Total Marks: 40]

NB: (1) Question No 1 is **compulsory**

(2) Attempt **any four** questions of the remaining 5 questions

- Q1.** 1. Comment briefly on following: **8**
 (a) Amorphous form of drug has more solubility than crystalline form.
 (b) Human serum albumin is a versatile drug binding protein.
 (c) Enzyme inhibition results in increase in half-life of drug.
 (d) IV administration is necessary in determination of absolute bioavailability.
- Q2.** (a) Discuss passive diffusion of drugs. **4**
4
 (b) Discuss limitations of pH partition hypothesis.
- Q3.** (a) Discuss the various factors that affect tissue distribution of drugs. **4**
 (b) Write a note on first pass metabolism of drugs. **4**
- Q4.** Derive equation for various pharmacokinetic parameters after IV bolus administration. **8**
- Q5.** Write a note on (any two) **8**
 (a) Diffusion theory of drug dissolution
 (b) Bioequivalence study
 (c) Sigma minus method
 (d) Renal clearance
- Q6.** An IV bolus dose of 12mg of a drug following one compartment kinetics has a apparent volume of distribution of 12000L and a half life of 18hrs. Calculate, **1**
 a. The elimination rate constant and clearance **2**
2
 b. The concentration after 10hrs of drug administration **2**
1
 c. The time required to eliminate 30% of the dose administered.
 d. The amount remaining in the body after 15hrs of administration.
 e. New plasma concentration achieved if dose is changed to 15mg.
