Final yr. B. Pharm
Biopharmaceutics & Pharmacokinetics

Con. 5732-11. (REVISED COURSE) DK–9810

Sem - VII
Oct 11

(2 Hours) [Total Marks : 40

N.B.: 1. Question No 1 is compulsory.
2. Attempt any four of the remaining six questions.

Q1. Comment briefly on the following: (8)
i. Micronization of hydrophobic drugs actually results in the reduction of the effective surface area and dissolution rate.
ii. Delayed intestinal transit is sometimes desirable
iii. Human serum albumin is a versatile durg binding protein
iv. Thiopental shows rapid onset and rapid termination of action on intravenous administration.

Q2. a. Discuss influence of gastric emptying and gastric pH on drug absorption. (6)
Q2. b. How are ionizable drugs absorbed. (2)

Q3. a. Discuss the various factors that affect tissue distribution of a drug. (4)
Q3. b. List and discuss theories of drug dissolution? (4)

Q4. Write short notes on any two of the following: (8)
i. Renal clearance
ii. Passive diffusion
iii. pH partition hypothesis.

Q5. An intravenous bolus dose (25 mg) of a drug following one compartment kinetics has a volume of distribution of 27000 L and a half life of 36 hours. Calculate, (8)
a. The concentration after 18 hrs of drug administration
b. The elimination rate constant and clearance
c. The AUC (zero to infinity) of the drug
d. The amount remaining in the body after 42 hrs
e. The percent dose remaining after 30 hours
f. Time required to eliminate 25% of the dose.

Q6. a. Draw the typical plasma concentration vs time profile obtained after an extravascular dose of a drug following single compartment kinetics and explain the different parts of the profile. State the equation that describes this profile and what the terms of the equations mean? (8)

Q7. Write short notes on any two of the following: (8)
i. AUC calculation by trapezoidal rule.
ii. Bioequivalence and its determination
iii. Sigma minus method of urine analysis.