Biop.eutics & P.cokinetics

Con. 2846–11. **(REVISED COURES)** **RS–8597**

Sem VII (R)

(2 Hours) **[Total Marks : 40**

16/5/11

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. Metastable polymorphs are preferred in drug formulations.
ii. Dissolution rate is better related to absorption/bioavailability that solubility.
iii. Placental barrier is not as effective as the blood brain barrier
iv. A protein bound drug is pharmacokinetically and pharmacodynamically inert.

Q2. a. Discuss any four barriers to the distribution of drugs. (6)
Q2. b. What is the significance of the volume of distribution (2)

Q3. a. Distinguish between active and passive transport as mechanisms of drug absorption giving suitable examples. (5)
Q3. b. List the various binding sites on human serum albumin and give examples of drugs binding to these sites. (3)

Q4. Write short notes on any two of the following: (8)
i. Non renal excretion of drugs.
ii. Insulin zinc suspension and its bioavailability.
iii. Dissolution testing.

Q5. An intravenous bolus dose (125 mg) of a drug following one compartment kinetics has a volume of distribution of 8000 L and a half life of 12 hours. Calculate, (8)
a. The amount eliminated after 16 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 48 hrs
e. The percent dose remaining after 18 hrs.
f. Time required to eliminate 90% of the dose.

Q6. a. Draw the typical plasma concentration vs time profile (C versus time and Log C versus time) obtained after an intravenous dose. What are the equations that describe these two profiles and what do the terms in the equations mean? (8)

Q7. Write short notes on any two of the following: (8)
i. Hepatic extraction ratio.
ii. Method of residuals.
iii. Sigma minus method for urine analysis.