PY–702(N)

B. Pharm. (Seventh Semester)
EXAMINATION, Dec., 2011

(New Scheme)

PHARMACEUTICS – IX

(Biopharmaceutics and Pharmacokinetics)

[PY – 702(N)]

Time : Three Hours

Maximum Marks : 70

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Describe intracellular and intercellular transport mechanism of drug absorption.
   (b) Describe physiological, dietary and dosage form factors affecting drug absorption.
2. (a) Discuss plasma protein binding and tissue protein binding with suitable example of clinical importance.
   (b) Describe various routes of drug excretion and factors affecting renal excretion.
3. Describe one-compartment open with mathematical expression for intravenous infusion and extravascular administration.
4. Describe pharmacokinetic drug interaction and their
5. (a) What is Bioavailability? Describe methods of determination of bioavailability using urinary excretion data.
   (b) Differentiate between one-compartment model and two-compartment model.
6. Plasma samples from a patient were collected after an oral of dose 10 mg of a drug as follows :

S. No.	Time (h)	Concentration (μ g/ml)
1	0·25	2·85
2	0·50	5·43
3	0·75	7·75
4	1·00	9·84
5	2·00	16·20
6	4·00	22·15
7	6·00	23·10
8	10·00	19·09
9	14·00	13·90
10	20·00	7·97

Determine the following parameters using the above data :

(a) Elimination rate constant (K_e) and $t_{1/2}$

(b) Absorption rate constant (K_a) by method of residuals

(c) Determine C_{max} and T_{max}

(d) Area under the curve from 025 h to 20 h

7. Describe in detail *in vitro* and *in vivo* gastrointestinal absorption method.