Code. No: 6107/PCI

FACULTY OF PHARMACY

M. Pharmacy (Pharmaceutics) II-Semester (PCI) (Suppl.) Examination, January 2020

Subject : Advanced Biopharmaceutics and Pharmacokinetics

Time: 3 Hrs **Max. Marks: 75**

Note: Answer any Five Questions. All Questions Carry Equal Marks.

1. (a) Discuss abt the theories proposed for the dissolution process and the factors affecting dissolution. 10
   (b) What is *in-vitro-in-vivo* correlations (IVIVC) and explain in brief 5

2. (a) Write in details abt factor affecting dosage forms in drug absorption 10
   (b) State and Explain the Noyes-Whitney equation 5

3. Write notes on
   (a) p^H-partition hypothesis and its limitations 8
   (b) Explain the biopharmaceutical factor affecting drug bioavailability 7

4. (a) Explain the pharmacokinetic parameters of a drug which follows one compartment open model when given by intravens bolus with relevant mathematical equations. 8
   (b) Explain the varis methods for assessment of bioavailability. 7

5. (a) Define Non-Linear pharmacokinetics. How do y estimate the pharmacokinetics parameters (K_{max} and V_{max}) by using Michaelis - Menten equation 10
   (b) Explain the biopharmaceutical classification system (BCS) with examples and what are its application. 5

6. (a) Write a note on varis study design s used for bioequivalence studies 8
   (b) Write the application of pharmacokinetics in monoclonal antibodies and gene therapies 7

7. (a) Explain the varis methods for determining absorption of drugs *in-vitro, in-situ* and *in-vivo* and their their correlation with examples. 10
   (b) Following a 650 mg I.V.bolus dose of a drug to a 65kg subject, the plasma drug concentration was fnd to decline biexponentially. The equation, that best described the drug kinetic was; $C=76^{e-14t} + 33^{e-3t}$. Calculate the following parameters Vc, Vp, Vd.ss, Vd. area and K_E etc.

8. A dose of cirprofloxaction 250 mg I.V. bolus was administered to a patient and the plasma concentration vs time data is obtained. Assume the drug follows two compartment open model. Calculate all possible pharmacokinetic parameters.

Time (hrs)	0.25	0.5	0.75	1.5	2	2.5	3	5	6	7
Plasma Conc. (μ g/ml)	5.38	4.33	3.5	2.99	2.12	1.70	1.43	1.05	0.80	0.70

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