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FACULTY OF PHARMACY

M. Pharmacy (Pharmaceutics) II-Semester (PCI) (Suppl.) Examination, February 2019

Subject: Advance Biopharmaceutics & Pharmacokinetics

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

Note: Answer any five questions. All questions carry equal marks.

1. (a) Write in detail abt mechanism of drug absorption with suitable diagrams .(10)
   (b) State and Explain the Noyes-Whitney equation. (5)

2. Write notes on
   (a) pH-Partition hypothesis and its limitations (8)
   (b) Explain the pharmacokinetic and pharmacodynamic drug-drug interaction. (7)

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

4. (a) How do y calculate absorption rate constant from plasma -concentration data following an oral dose using Wagner Nelson method. (8)
   (b) Explain the varis methods for assessment of bioavailability . (7)

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

6. (a) Describe the experimental protocol and analysis of data for bioequivalence studies for conventional dosage form. (10)
   (b) Write the application of pharmacokinetics in targeted drug delivery system. (5)

7. (a) Explain the varis methods for determining absorption of drugs *in-vitro,in-situ* and *in- vivo* and their correlation with examples. (10)
   (b) Pharmacokinetics of 500 mg paracetamol after oral administration is best described by the equation $C=1.18(e^{-0.24t} - e^{-1.6t})$.Calculate the C_{max}, t_{max} and $t_{1/2}$ of the drug. (5)

8. A dose of ciprofloxacin 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. (15)

Time(hrs)	0.25	0.5	0.75	1.5	2	2.5	3	5	6	7
Plasma conc. (µg/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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