MPY-201 (PCS)
M.Pharmacy II Semester
Examination, July 2015
Biopharmaceutics and Pharmacokinetics
(Advanced Pharmaceutics - I)

Time : Three Hours

Maximum Marks: 70

Note: i) This question paper contains seven questions. Attempt any *five* questions.

ii) All questions carry *equal* marks.

1. a) What is therapeutic index? Prepare a plasma drug concentration and discuss various component of it. 7

   b) Discuss how the drug response is determined in biopharmaceutics. Explain various factor affecting it. 7

2. a) Using the following urinary excretion data, obtained after administration of single 1 gm bolus IV dose, describe the biopharmaceutic model. 7

Time (hr)	0.25	0.50	1.0	2.0	4.0	6.0
Du (mg)	160	140	200	250	188	46

   b) What is mathematical modeling in pharmacokinetics? Explain the importance of one compartment model scheme in prediction of therapeutic application of drugs. 7

3. a) How loading and maintenance doses are calculated? 7

   b) Giving one specific example explain how is oral drug dosage regimen calculated for a patient who is being administered intravenous drug infusion. 7

4. a) What is non-linear pharmacokinetics? Explain various factors affecting it. 7

   b) Discuss the kinetics of drug-protein binding. Explain how drug-protein binding affects distribution and elimination of drugs. 7

5. a) Discuss applications and limitation of physiological pharmacokinetics model. 7

   b) Explain how organ volume and perfusion affects pharmacokinetics as per physiological pharmacokinetic model. 7

6. a) What is the significance of clinical pharmacokinetics in drug therapeutics? Discuss. 7

   b) Explain how dose adjustment is done in case of renal impaired patient. 7

7. a) What is the significance of in-vitro-in-vivo correlation? Explain how correlation is established. 7

   b) Define bioequivalence. Discuss the criteria employed by FDA for imposing bioequivalence requirements. 7

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