QP Code: 106327 **Reg No: ……**

First Year M.Pharm Degree Examinations – September 2013

(2011 Scheme)

(Pharmaceutics)

Paper II – Biopharmaceutics and Pharmacokinetics

Time: 3 hrs **Maximum Marks: 100**

- ***Answer all questions***
- ***Draw diagrams wherever necessary***

Essays: **(2x20 =40)**

1. Define absolute and relative bioavailability. What are the elements of a bioavailability study protocol . Explain the methods of estimation of bioavailability

2. What is meant by one compartment–open model . Explain the methods of calculating volume of distribution Vd and elimination rate constant K_E of a drug following one compartment model

Short Essays: **(6x10=60)**

3. Explain the role of gastrointestinal motility, gastrointestinal pH, particle size of drugs and polymorphism on systemic absorption

4. Explain feathering techniques and Wagner- Nelson method for the determination of absorption rate constant K_a.

5. Discuss the significance of partition coefficient, solubility thickness of hydrodynamic diffusion layer and drug loading dose the release rate of drugs from controlled release formulation

6. Explain briefly mammillary model and physiologic pharmacokinetic models.

7. What is non-linear pharmacokinetics. Mention suitable examples for drug showing non-linear pharmacokinetics and causes of their non-linearity. Explain the determination of maximum rate (Vmax) of non-linear process and Michaelis constant Km

8. Discuss individualization of dosage regimen

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