

# **2012 Scheme**

**QP CODE: 314006**

**Reg. No: .....**

## **Third Year B.Pharm Degree Supplementary Examinations August 2023 Pharmaceutics - IV**

### **(Biopharmaceutics and Pharmacokinetics)**

**Time: 3 Hours**

**Total Marks: 100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Write chemical structures/equations wherever necessary.*

#### **Essays**

**(3x10=30)**

1. What are the physicochemical properties of drug substance influencing drug absorption.
2. What is the difference between solubility and dissolution. Explain the theories of drug dissolution.
3. Define bioequivalence. Explain different bioequivalence study designs.

#### **Short notes**

**(14x5=70)**

4. Explain first pass effect with examples.
5. What are the methods available for determining bioavailability.
6. What are the components of an elimination rate constant. What is meant by the additive nature of rate constants.
7. Explain the statistical moments theory and Mean Residence Time (MRT) with respect to non-compartmental analysis.
8. Explain the first order absorption rate constant  $K_a$  determination by method of residuals.
9. What are the sites of metabolism in the body. Why is liver considered the major site for such a process.
10. Describe two compartment open model for intravenous (IV) bolus administration.
11. Explain the protein binding of drugs and write its clinical significance.
12. Describe the phase I reactions involved in biotransformation of drugs.
13. Explain the principle processes involved in the urinary excretion of drugs.
14. Entero hepatic circulation
15. Explain the factors affecting drug distribution.
16. What are the causes of nonlinearity in distribution of drug.
17. Explain Phase II biotransformation with examples.

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