

**FINAL YEAR B.PHARM. SEMESTER-VII (CBCS - 2015 Course) :**

**WINTER - 2018**

**SUBJECT : BIOPHARMACEUTICS AND PHARMACOKINETICS**

**Day : Saturday**

**W-2018-4099**

**Time : 02.00 PM TO 05.00 PM**

**Date : 17/11/2018**

**Max. Marks : 60**

**N.B.**

- 1) Q.No. 1 and 5 are **COMPULSORY**. Out of the remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

**SECTION – I**

- Q.1** Answer the following. (**ANY FIVE**) (10)
- a) What is effective partition coefficient? Explain why Thiopental distributes in CSF 80 times faster than salicylic acid.
  - b) What is first pass effect?
  - c) Explain pro-drug and its significance.
  - d) What is surface renewal theory?
  - e) What is meant by rate determining step in the process of drug absorption?
  - f) Phenytoin, a very weak acid has pKa 8.2. Comment on its absorption behavior.
- Q.2** Explain the pH-partition hypothesis and its significance in drug absorption. (10)
- Q.3** Explain the different physiological barriers to the drug distribution. (10)
- Q.4** Write short notes on **ANY TWO**. (10)
- a) Entero-hepatic cycling
  - b) Chemical factors affecting biotransformation
  - c) Difference between plasma protein and tissue protein drug binding

**SECTION – II**

- Q.5** Answer the following. (**ANY FIVE**) (10)
- a) Explain physiological model.
  - b) What is zero order process? Give examples.
  - c) Define absolute and relative bioavailability.
  - d) What is AUC and trapezoidal rule?
  - e) Define clearance, total body clearance and organ clearance.
  - f) What are the advantages of urinary data over plasma data?
- Q.6** Derive equation for pharmacokinetic parameters after intravenous injection of drug. (10)  
Assume it follows first order kinetic and body behaves as a one compartment.
- Q.7** Give the mathematical treatment to explain determination of  $K_E$  from urinary excretion data. (10)
- Q.8** Write short notes on **ANY TWO**. (10)
- a) Non compartmental analysis
  - b) Methods of enhancement of BA.
  - c) IVIVC

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