Code No: B134201 **R13** SET - 1

IV B. Pharmacy II Semester Regular/Supplementary Examinations, April - 2019
BIOPHARMACEUTICS AND PHARMACOKINETICS

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is Compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1. a) Give the significance of phagocytosis and give two examples of drugs undergoing phagocytosis. (3M)
   b) Write about binding sites for plasma protein binding. (4M)
   c) Give the differences between Wagner-Nelson method and method of residuals. (3M)
   d) How non-linearity is detected? Give two examples for drugs following non-linear kinetics. (4M)
   e) Write the reasons for adjustment of dose in renal and hepatic failures. (4M)
   f) Write about the salient features of typical blood concentration-time curve. (4M)

PART -B

2. a) Explain the significance of pharmaceutical factors influencing the drug absorption with suitable examples. (9M)
   b) Discuss the significance of passive diffusion and carrier mediated transport in drug absorption. (7M)

3. a) Write about factors influencing drug distribution. (8M)
   b) Give the differences between one and two compartment models. Mention the advantages of compartment modeling. (8M)

4. a) Explain the calculation of (ka) absorption rate constant using WAGNER NELSON method. (8M)
   b) Write the advantages of using non-invasive methods for calculation of pharmacokinetic parameters. What conditions are to be followed during their usage? (8M)

5. Write about the following: (16M)
   a) Biological half life
   b) Apparent volume of distribution
   c) In vitro sink condition
   d) Renal clearance

6. a) Write about pharmacokinetic drug interactions. (9M)
   b) A new drug was given in a single intravenous dose of 400 mg to an 80 kg adult male patient. After 6 hours, the plasma drug concentration was 3 mg/100 ml of plasma. Assuming that the apparent volume of distribution (V_d) is 10% of the body weight, compute the total amount of drug in the body fluids after 6 hours. (7M)

7. a) Discuss the methods for improving bioavailability of drugs with suitable examples. (8M)
   b) Explain the calculation of K_m and V_{max} using double reciprocal plot. (8M)
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