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

IV B. Pharmacy II Semester Regular/Supplementary Examinations, April - 2018
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) Explain the significance of structure of biological membrane in the transport of drugs. (4M)
   b) Write about plasma proteins responsible for binding of drugs. (4M)
   c) Discuss the importance of pH partition hypothesis. (4M)
   d) Define renal clearance and mention its significance. (3M)
   e) Mention the need for dose adjustment in renal failure. (3M)
   f) Write the role of C_{max} and T_{max} in bioavailability. (4M)

PART -B

2. a) Enumerate the mechanisms of drug transport with suitable examples. (8M)
   b) Discuss the role of physiological factors in drug absorption. (8M)

3. a) Explain the factors effecting the drug distribution. (8M)
   b) Write about factors influencing the protein binding of drugs. (8M)

4. a) Explain Loo-Riegelman method. (10M)
   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. What is the half life of this drug? (6M)

5. a) Explain Michaelis-Menten equation and discuss its significance. (7M)
   b) Explain method of residuals and write its merits and drawbacks. (9M)

6. a) Write about pharmacokinetic drug interactions citing suitable examples. (8M)
   b) What is clinical pharmacokinetics? Explain the application of clinical pharmacokinetics in dose adjustment in patients with hepatic failure. (8M)

7. a) Explain the design of single dose bioavailability studies. (8M)
   b) Explain the regulatory requirements for carrying out bioequivalence studies as per Drugs and Cosmetics Act. (8M)
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