P.D 4.5

Total No. of Questions : 7] [Total No.of Pages : 01

IV/VI PHARM - D DEGREE EXAMINATIONS, JULY - 2022

Fourth Year

BIOPHARMACEUTICS & PHARMACOKINETICS

Time : **Three Hours** Maximum : **70** Marks

Answer any FIVE Questions. **5x14 = 70 M**

All Questions carry equal marks

1. a) Explain the mechanisms of drug absorption citing suitable examples.
   b) Write about factors influencing drug distribution.
2. Mention the need for conducting the bioavailability studies. Explain the methods for its determination.
3. Explain the significance of non-compartment analysis. Write about different physiological models.
4. a) Define 'compartment'. Mention the advantages of compartment modelling.
   b) Discuss the calculation of absorption rate constant by Wagner - Nelson method. Mention its advantages.
5. Write short notes on the following :
   a) Apparent volume of distribution.
   b) Renal clearance.
   c) Biological half-life.
   d) Significance of dissolution studies.
6. a) How the steady state concentration is assessed in multiple dosing ? What is its significance ?
   b) Differentiate between one and two compartment models.
7. Define non-linear kinetics and how non-linearity is detected ? Explain the calculation of K_m and V_{max}.

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Total No. of Questions :07] [Total No. of Pages : 01

IV/VI PHARMA-D (Regular) DEGREE EXAMINATIONS, April/May-2018

Fourth Year

PHARMA-D

BIOPHARMACEUTICS & PHARMACOKINETICS

Time: Three Hours **Maximum marks:70**

Answer Any FIVE Questions

All Questions carry equal marks **5X14=70M**

1. a) Enumerate the factors influencing drug elimination.
   b) Write about the influence of pH of the absorbing membrane and partition coefficinet of drug on its absorption.
2. Write the significance of compartment modelling? Explain one compartment model and its applications in the determination of pharmacokinetic parameters by intravenous bolus injection.
3. Discuss the factors causing non-linear kinetics giving suitable examples. Explain double reciprocal plot and mention its limitations.
4. Explain two compartment open model with extra vascular administration.
5. Write about the following
   a) Carrier mediated transport
   b) Total body clearance
   c) Fick's first law
   d) C_{max} and T_{max}
6. Explain the significance of bioavailability studies. Write in detail about bioavailability study protocol.
7. Write short notes on the following
   a) Steady state concentration in repetitive intravenous dosing
   b) Mean residence time
   c) Physiological models

Total No. of Questions :07]

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IV/VI Pharma.D (Regular) DEGREE EXAMINATIONS, JUNE/JULY-2017

(Examination at the end of Fourth year)

Paper V- BIOPHARMACEUTICS AND PHARMACOKINETICS

Time: Three Hours

Maximum marks:70

Answer any FIVE questions.

All questions carry equal marks. **5X14=70M**

1. Write about the following?
   a) Volume of distribution of drugs and its clinical significance
   b) Phase II drug metabolic reactions
2. Draw a neat Plasma Drug Concentration-Time curve? Define and explain about the significance of C_{max}, t_{max} and AUC?
3. Discuss about the calculation of Elimination Rate Constant and Clearance using one compartment open model with IV infusion?
4. Explain about the assessment of Elimination Rate Constant and AUC using two compartment open model with IV bolus administration?
5. What is an optimal multiple dosage regimen? Discuss about the accumulation of drug during multiple dosing?
6. What is non linear pharmacokinetics? Discuss about various reasons for non linearity?
7. Explain about the calculation of MRT? Add a note on applications and advantages of Non compartmental analysis?
8. Define absolute bioavailability? Discuss about various pharmacokinetic methods to assess bioavailability?

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IV/VI Pharm.D (Regular) DEGREE EXAMINATIONS, JULY/AUG-2016

(Examination at the end of Fourth year)

Paper-V- BIOPHARMACEUTICS AND PHARMACOKINETICS

Time: Three Hours

Maximum marks:70

Answer any FIVE questions.

All questions carry equal marks.

1. Discuss about the absorption of drugs through GIT by passive diffusion? Add a note on paracellular transport of drugs?
2. Draw a neat Plasma Drug Concentration-Time curve? Define and explain about the significance of MEC, Onset and Duration of action and Therapeutic window?
3. Discuss about the calculation of Elimination Rate Constant and Clearance using one compartment open model with IV bolus administration?
4. Explain about the assessment of Absorption Rate Constant by method of residuals using two compartment open model with oral administration.
5. What is an optimal multiple dosage regimen? Explain about the calculation of Maximum and Minimum Concentrations during multiple dosing?
6. What is non linear pharmacokinetics? Discuss about Michaelis Menten equation?
7. What are different types of physiological models? Add a note on their advantages and disadvantages?
8. Define relative bioavailability? Discuss about the protocol to conduct bioavailability studies?