IMPORTANT QUESTIONS

For

B. Pharmacy Third Year II-Semester

Subject:

Biopharmaceutics & Pharmacokinetics (BPPK)

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Section-I: Very *Short Answer Questions.*
1. Write Noyes Whitney equation. Explain the terms?
2. Describe the absorption of a drug on rectal administration.
3. Define apparent volume of distribution.
4. Define Biopharmaceutics & Pharmacokinetics.
5. Mention factors affecting absorption.
6. Differentiate passive transport and active transport.
7. What is protein binding? How it affects bioavailability?
8. What is Lipinskis rule of five?
9. Differentiate between plasma drug binding and tissue drug binding.

Section-II: *Short Answer Questions*
1. Discuss about pH-partition hypothesis.
2. Describe the absorption of drugs from extravascular routes.
3. Explain briefly about kinetics of protein binding.
4. How do you determine absorption rate constant, Ka by Wagner nelson method.
5. Write a note on carrier mediated transport?
6. Describe about the physiological barriers to the distribution of drugs.
7. Write about gastric emptying rate and volume of distribution.
8. Discuss the mechanism of active diffusion in absorption of drugs?
9. How the organ size and perfusion rate influence the drug distribution.

Section-III: *Long Answer Questions*
1. Define absorption. Write in detail about mechanism of drug absorption with diagram.
2. Discuss protein binding and various factors affecting drug protein binding.

UNIT-II

Section-I: Very *Short Answer Questions.*
1. Write a note on excretion of drugs through skin.
2. Define absolute bioavailability and relative bioavailability.
3. Describe hepatic clearance.
4. List the factors affecting elimination of drugs.
5. Define Orange book and objectives of bioavailability studies.
6. What are the markers used in renal clearance.
7. Define Creatinine and how to calculate the creatinine clearance.

Section-II: *Short Answer Questions*
1. Explain biliary excretion of drugs.
2. Discuss about methods to enhance bioavailability of poorly soluble drugs.
3. Explain various methods for assessment of bioavailability.
4. Discuss in-vitro in vivo correlation.
5. Explain various cross over designs in bio equivalence studies.
6. Explain factors affecting the renal excretion of drugs.

Section-III: *Long Answer Questions*
1. Describe the renal excretion of drugs.
2. Write about in-vitro drug dissolution models.
3. Explain in detail about Bioequivalence study protocols.

UNIT-III

Section-I: Very *Short Answer Questions.*
1. Define C_{max} T_{max} and AUC?
2. Explain the term V_d, t ½, K_a and CLR.
3. Explain flip-flop method in extra vascular administration.
4. Write the equation for calculating steady state drug concentration for one compartment open model.
5. What is flip flop phenomenon and how is it useful in method of residual.
6. Define Microconstants and hybrid constants and write the relationship between them.

Section-II: *Short Answer Questions*
1. Explain in detail about compartment models.
2. Explain the pharmacokinetic parameters of a drug which follows one compartment open model when given by IV bolus with relevant mathematical equations   .

Section-III: *Long Answer Questions*
1. Problems based on compartment models pharmacokinetic parameters.

UNIT-IV

Section-I: Very *Short Answer Questions.*
1. Write the equation for calculating loading dose
2. Write briefly about two compartment open model.

Section-II: *Short Answer Questions*
1. Derive Kinetics parameter for IV bolus administration in two compartment open model.
2. Explain methods of adjustment of dose and dosage regimen in patients with hepatic failure.
3. Write the significance of different volumes of distribution in two compartment model.

Section-III: *Long Answer Questions*
1. Derive mathematical equations used to calculate pharmacokinetic parameters following IV bolus administration blood data, assuming that the drug follows two compartment open model.

UNIT-V

Section-I: Very *Short Answer Questions.*
1. What are the factors for cause of non-linear kinetic?
2. Write Michaelis Menten equation.

Section-II: *Short Answer Questions*
1. Describe estimation of K_m and V_{max} in non-linear kinetics.
2. Write a note on non-linear Pharmacokinetics.
3. Write a note on Michaelis Menten equation.

Section-III: *Long Answer Questions*

1. Drive Michaelis Menten equation and how do you estimate K_m and V_{max}