Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2011 to 2016) (Sem.–5)

PHARMACEUTICS-VII

(Biopharmaceutics & Pharmacokinetics)

Subject Code : BPHM-505

M.Code : 70431

Time : 3 Hrs. Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.**

SECTION-A

1. Answer briefly :

a) What is meant by K and K_e?

b) What is absolute bioavailability? Which dosage form will ideally have 100% absolute availability?

c) What is facilitated transport?

d) Give two examples of plasma proteins.

e) What is pinocytosis?

f) What is renal clearance and how is it calculated?

g) What is MDT?

h) Mention the formula for calculating $T_{1/2}$ of drug for first order kinetics.

i) Define volume of distribution and its units.

j) What is MRT and what does it represent?

k) What is extra hepatic clearance?

l) What is meant by biopharmaceutical studies?

m) What is extraction ratio?

n) Define Phase I and II trials and their purpose.

o) What is active secretion in renal tubules?

SECTION-B

2. Enumerate various pharmaceutical factors influencing drug absorption.

3. Comment on factors affecting drug distribution in the body.

4. What is meant by V_d? Discuss the significance of V_d.

5. Explain with the help of suitable equations the pharmacokinetics of a drug in plasma after IV administration that follows one compartment open model.

6. A dose of 300 mg was given to a patient by IV bolus injection. After 30 days the serum drug concentration was found to be 75 mg/ml. Calculate K and $T_{1/2}$ of the drug assuming first order kinetics.

SECTION-C

7. What is bioequivalence? Mention the criteria for declaring two products bioequivalent and discuss the regulatory considerations pertaining to bioequivalence studies in India.

8. Explain how Ka is determined by Wagner-Nelson method.

9. What is Sigma-Minus method? Explain the method of calculating elimination rate constant by this method with the help of suitable equations.

10. IV bolus dose (4 mg / Kg) was administered to a patient of 75 kg weight. Following equation represented the drug kinetics :

$C_p = 78\ e^{-0.46t}$ Calculate :

a) $T_{1/2}$;

b) V_d;

c) Plasma concentration after 4 hr

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.