Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 18

Pharm.D. (Sem.–4)

BIOPHARMACEUTICS AND PHARMACOKINETICS

Subject Code : 4.5

M.Code : 71573

Date of Examination : 22-12-22

Time : 3 Hrs. **Max. Marks : 70**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.**
2. **SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.**
3. **SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.**

SECTION-A

1. What is meant by AUC? Mention the formula for calculating AUC.

2. Differentiate between Relative and Absolute Bioavailability?

3. Draw a typical plasma drug concentration *vs* time plot for oral administration of a drug and explain various rate and extent of bioavailability indicating parameters.

4. Write the equation for determining elimination half-life of a drug from slope of elimination linear phase.

5. What is MDT?

6. Mention four reasons for reduced oral bioavailability of drugs.

7. What does very low and very high value of V_d indicate?

SECTION-B

8. Write briefly about facilitated and active transport of drugs.

9. Comment on factors affecting renal clearance of drugs.

10. Write a note on hepatic clearance and its significance.

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

12. Explain MRT, MAT and MDT.

13. What is a two-compartment open model? How does it differ from one-compartment open model? Which type of drugs predominantly exhibit this behavior?

14. Discuss the methods used for detecting non-linear pharmacokinetic behavior.

15. Deriving suitable equations, explain the pharmacokinetics of a drug after IV bolus injection.

SECTION-C

16. Discuss the regulatory considerations pertaining to bioequivalence studies in India.

17. Explain how Ka is determined by the method of Residuals and by Wagner-Nelson method. Which of these methods gives a better estimate of Ka and why?

18. Explain the drug plasma levels after IV bolus injection immediately followed by IV infusion. Derive the expression for loading dose to immediately achieve Css in this case.

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.