[Total No. of Questions - 15] [Total No. of Printed Pages - 2]
(2066)

16432(J)

M. Pharmacy 2nd Semester Examination

Pharmacokinetics

MP-123

Time : 3 Hours **Max. Marks : 90**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

SECTION - A

Note: Answer any one question, carrying 25 marks.

1. Write a descriptive note on-how to measure renal impairment, how to adjust the dose of a drug in patients of renal impairment, and therapeutic drug monitoring. (25)

2. Write a note on (in detail)–how to measure liver disfunction, how to adjust the dose in liver impaired patients and individualization of therapy? (25)

SECTION - B

Note: Answer any three question, each carrying 10 marks.

3. Explain the sigma minus method for estimating various rate constants and half life from urine data. (10)

4. Differentiate between one compartment and two compartment pharmacokinetic models for drugs administered through oral and intravenous routes, and mention its significance. (10)

5. Write a note on kinetics of sustained release. (10)

6. Discuss the applications of pharmacokinetics in design of dosage forms and novel drug delivery systems. (10)

[P.T.O.]

SECTION - C

Note: Answer any seven question, each carrying 5 marks.

7. Define Vd and explain the method of estimating Vd. (5)

8. Vd values of three drugs are 7 litre, 25 litre and 400 litres. Give your comments regarding characteristics of three drugs having Vd values as mentioned above. (5)

9. Discuss briefly about first-pass metabolism and explain its relationship with bioavailability of drugs. (5)

10. How will you measure $AUC_{0\rightarrow t}$ and $AUC_{0\rightarrow\infty}$? Explain. (5)

11. Define hepatic clearance, renal clearance and extraction ratio. What is significance of extraction ratio? (5)

12. What do you mean by steady state plasma drug concentration, therapeutic window, MEC and MSC? Explain with the help of plasma drug concentration profiles. (5)

13. Explain the significance of plasma protein binding and tissue protein binding in clinical sense. (5)

14. Total daily dose requirement of an orally administered drug in 3mg/kg body weight. Suggest a suitable dose and dosing interval with justification, keeping patient compliance and minimum fluctuations in plasma drug levels in mind. (5)

15. Differentiate between:

    (a) KE and Kr.

    (b) Ka and β(beta). (2½×2=5)