Rajiv Gandhi University of Health Sciences, Karnataka

IV Year Pharm-D Degree (Post Baccalaureate) Examination – Feb / Mar 2012

Time: Three Hours **Max. Marks: 70 Marks**

BIOPHARMACEUTICS AND PHARMACOKINETICS

Q.P. CODE: 2871

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any two) **2 x 10 = 20 Marks**

1. Define biotransformation. Explain factors affecting biotransformation of drugs.
2. Discuss physicochemical factors affecting drug absorption.
3. Discuss various approaches for improving solubility of poorly soluble drugs.

SHORT ESSAYS (Answer any six) **6 x 5 = 30 Marks**

4. Discuss anatomy and physiology of blood brain barrier. Explain characteristics of drugs necessary to penetrate such a barrier.
5. Explain active transport mechanism of drug absorption
6. Explain considerations in *in vivo* bioavailability study design
7. An antibiotic, having half life of 1.75 hours, when administered at an intravenous bolus dose of 50mg showed initial plasma concentration of 0.70 mcg/l. Calculate volume of distribution and total clearance.
8. What do you understand by Biopharmaceutics classification system for drug?
9. Discuss physiological models along with advantages and disadvantages.
10. Explain statistical moment theory in noncompartmental analysis of pharmacokinetic data
11. Define clearance and explain hepatic clearance.

SHORT ANSWERS **10 x 2 = 20 Marks**

12. Give the mechanism of ion-pair transport in absorption of drugs.
13. What are the advantages of zero order infusion of drugs?
14. When is rapid gastric emptying desirable?
15. How does age affect distribution of drug?
16. Enlist four advantages of using urinary excretion data in the analysis of a pharmacokinetic system
17. What are the various pharmacokinetic parameters?
18. What is priming dose. Give equation.
19. List the types of compartment models. In comparison to mammillary model, catenary model is less useful. Explain.
20. How does nonlinearity in drug absorption occur?
21. Define absolute and relative bioavailability.

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