

# Rajiv Gandhi University of Health Sciences, Karnataka

IV Year Pharm-D Degree (Post Baccalaureate) Examination – Aug 2013

**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 and explain the term compartment modeling. Describe the kinetics of drug in one compartment model following IV Infusion.
2. Discuss the factors affecting the drug distribution.
3. Define and explain the significance of bioavailability studies and write the methods used for measurement of bioavailability.

### **SHORT ESSAYS (Answer any six)**

**6 x 5 = 30 Marks**

4. Draw blood level profiles following IV and oral administration of drugs and explain the difference between two.
5. Discuss the effect of food on drug absorption with examples.
6. Define apparent volume of distribution. How it can be determined and mention its significance.
7. What do you mean by non-linear pharmacokinetics and write a brief note on factors causing non-linearity.
8. Discuss the process of renal excretion of drugs.
9. Write a note on passive diffusion and active transport.
10. Explain stastical moment theory.
11. Define and classify pharmacokinetic models and mention its significance.

### **SHORT ANSWERS**

**10 x 2 = 20 Marks**

12. Define pharmacokinetics; mention its application in the design of dosage form.
13. *Give the significance of Protein binding.*
14. Give the reasons for poor bioavailability of orally administered drugs.
15. What are limitations of one compartment model?
16. Define therapeutic and chemical equivalence.
17. Define absolute and relative bioavailability.
18. Mention non-renal routes of drug excretion.
19. Write a note on blood brain barrier.
20. *Define accumulation index and extraction ratio.*
21. What are the limitations of residual method to calculate  $K_a$ ?

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