

# Rajiv Gandhi University of Health Sciences, Karnataka

IV Year Pharm-D (Post Baccalaureate) Examination - Aug / Sep 2011

**Time: Three Hours**

**Max. Marks: 70 Marks**

## BIOPHARMACEUTICS & 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. Explain the various theories of drug dissolution
2. Discuss one compartment open model of a drug given by Intravenous infusion with relevant graphs & equations
3. Compare single dose with multiple dose bioavailability

#### SHORT ESSAYS (Answer any Six)

**6 x 5 = 30 Marks**

4. Compare passive and facilitated diffusion
5. Write a short note on multiple dosage regimen during repetitive intravenous injections
6. Discuss drug accumulation during multiple dosing
7. Define clearance, total body clearance and organ clearance. What are the advantages of expressing clearance at an individual organ level
8. State the pH partition hypothesis. Mention the assumptions on which it is based
9. What are the advantages of physiologic models over compartment models
10. Define bioavailability. What are the objectives of bioavailability studies
11. What are the objectives and approaches in developing in vitro – in vivo correlation

#### SHORT ANSWERS

**10 x 2 = 20 Marks**

12. Solid solutions dissolve faster than eutectics. Why?
13. Define fluctuation of plasma level and mention the factors affecting it
14. Why do neonates, infants and children require lesser mg/kg body weight doses than adults?
15. Define bioequivalence and therapeutic equivalence
16. Mention orally administered dosage forms in the order of decreasing bioavailability
17. Which physiochemical properties of the drug limit its distribution?
18. List the factors influencing protein binding of drugs
19. Name and define the pharmacokinetic processes involved in the termination of drug action
20. What are the various nonrenal routes of drug excretion
21. What are the two methods for calculating KE from urinary excretion data

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