

Code No: PH4

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**Pharm.D(Post Baccalaureate) I Year Supplementary Examinations, Oct/Nov - 2019**  
**BIOPHARMACEUTICS AND PHARMACOKINETICS**

Time: 3hours

Max.Marks:70

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Define Biopharmaceutics. Explain the mechanism of drug absorption by passive diffusion and active transport.
- b) Explain the factors influencing drug absorption from GIT. [6+8]
- 2.a) Describe the compartment model and physiologic pharmacokinetic model.
- b) Write short notes on plasma drug concentration-time curve. [8+6]
- 3.a) Derive an equation for one compartment open model intravenous Bolus injection.
- b) Write short notes on clearance. [10+4]
4. Write short notes on:
  - a) Determination of absorption rate constant by Wagner-Nelson method.
  - b) Estimation of excretion rate constant by Sigma-Minus method. [8+6]
- 5.a) Write short notes on drug accumulation.
- b) Explain the plasma versus time profile for repetitive IV Injection using one compartment open model. [4+10]
- 6.a) Discuss in detail the potential causes for Nonlinear Pharmacokinetics.
- b) Derive Michaelis-Menton equation. [6+8]
- 7.a) Write short notes on Statistical Moment Theory.
- b) Derive an equation for determination of MRT from plasma concentration data of an IV bolus administration following elimination by first order process. [6+8]
- 8.a) Give the Table for Bioavailability study protocol.
- b) Explain the method of assessment of Bioavailability from plasma data.
- c) Write a note on Cross over design. [3+6+5]

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