**Enrollment No: _____ Exam Seat No: _____**

# C.U.SHAH UNIVERSITY

## Summer Examination-2022

**Subject Name: Biopharmaceutics and Pharmacokinetics-Theory**
**Subject Code: BP604T** **Branch: B.Pharm**
**Semester: 6** **Date: 06/05/2022** **Time: 02:30 To 05:30** **Marks: 75**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

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| **Q-1** | | **Attempt the following questions:** | **(20)** |
| | **A** | Define Pharmacokinetics and Pharmacodynamics. | **2** |
| | **B** | Briefly explain Drug absorption. | **2** |
| | **C** | Define Drug Distribution and Elimination. | **2** |
| | **D** | Briefly explain volume of distribution. | **2** |
| | **E** | Define Drug metabolism and Excretion. | **2** |
| | **F** | Briefly explain the concept of clearance. | **2** |
| | **G** | What is mixed order kinetics? | **2** |
| | **H** | What is multi compartment models? | **2** |
| | **I** | Briefly explain steady state drug level. | **2** |
| | **J** | What is non-linear pharmacokinetics? | **2** |
| **Q-2** | | **Attempt any two of following: (2*10 Marks = 20 Marks)** | **(20)** |
| | **A** | Enumerate the factors affecting GI absorption of drug. Explain factors related to physicochemical properties in detail. | **10** |
| | **B** | Describe one compartment open model for *i.v.* bolus and *i.v.* infusion. | **10** |
| | **C** | Explain Michalis Menton equation for estimating kinetic parameters $V_{max}$ and $K_{max}$. | **10** |
| **Q-3** | | **Attempt any Seven of following: (7*5 Marks = 35 Marks)** | **(35)** |
| | **A** | Enumerate various mechanism of drug absorption. Explain Passive diffusion and active transport in detail. | **5** |
| | **B** | Explain various physiological barriers to the distribution of drug. | **5** |
| | **C** | Explain kinetics of protein binding. | **5** |
| | **D** | Enumerate the factors affecting renal excretion of drug. Explain any two in detail. | **5** |
| | **E** | Explain Mammillary and Caternary Compartment models. | **5** |
| | **F** | Explain pharmacokinetics of drug by first order kinetics. | **5** |
| | **G** | Discuss in detail about Physiologic models. | **5** |
| | **H** | Discuss the calculation for loading and maintenance dose of drug. | **5** |
| | **I** | Discuss the causes of non-linearity in pharmacokinetics. | **5** |