DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary End Semester Examination – Winter 2023

Course : B. Pharmacy   Date:- 05/01/24   Sem : VI

Subject Name –Biopharmaceutics and Pharmacokinetics   Subject Code : BP604T

Max Marks: 75   Duration : 3 Hr

Instructions:

1. **All Questions Are Compulsory**
2. **Draw diagrams / figures wherever necessary**
3. **Figures to right indicate full marks**

Q.1 Objective Type Questions (All Questions are compulsory)   **(10 x 2) = 20**

    i. Enlist different mechanisms of drug absorption.

    ii. Define volume of distribution with example.

    iii. Enlist non oral extra vascular route of drug administration.

    iv. Enlist different routes of drug elimination.

    v. Enlist factors affecting renal excretion.

    vi. Discuss in brief about Phase I biotransformation reactions of metabolism

    vii. Write the formula for Renal clearance (Cl_R) & Total Clearance (Cl_T).

    viii. Explain steady state drug level.

    ix. Define dosage regimen.

    x. Write Michaelis-menton equation.

Q.2 Long Answer Question (Answer any 2 out of 3)   **(2 x 10) = 20**

    i. Define Bioavailability and Bioequivalence. Explain the objectives of bioavailability studies. Describe in detail methods used for determination of bioavailability.

    ii. Discuss the concept of drug absorption. Enlist factors influencing absorption of drugs. Discuss pharmaceutical factors in detail.

    iii. Explain in detail two compartment open model. Illustrate assessment of Pharmacokinetic parameters after IV bolus administration of drug for two compartment open model.

Q.3 Short Answer Questions (Solve any 7 out of 9)   **(7 x 5) = 35**

    i. Explain any 2 Mechanisms of drug absorption through GIT.

    ii. Explain the concept of protein binding and illustrate any 4 factors affecting drug distribution.

    iii. Illustrate Non renal routes of drug excretion of drugs.

    iv. Explain Wagner Nelson method for estimation of Ka.

    v. Describe compartment models.

    vi. Explain the concept of loading and maintainance dose.

    vii. Explain the factors causing Non-linearity in pharmacokinetics with suitable examples.

    viii. Enlist USP *In vitro* dissolution test apparatus and illustrate any 4 apparatus.

    ix. Describe physiological models.

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