B. PHARM.
SIXTH SEMESTER
BIOPHARMACEUTICS & PHARMACOKINETICS
BP604T

SET
B

[USE OMR SHEET FOR OBJECTIVE PART]

Duration : 3 hrs.

Full Marks : 75

(**PART-A: Objective**)

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

1. Michaelis-Menten method is best used in:
   a. Zero order Kinetics
   b. Linear Pharmacokinetics
   c. Non Linear Pharmacokinetics
   d. First order Kinetics

2. 100% Bioavailability is observed in the following route:
   a. Parenteral
   b. Oral
   c. Rectal
   d. Topical

3. Which of the following does not fall under Multi Compartment models:
   a. Two Compartment Model
   b. Three Compartment Model
   c. One Compartment Model
   d. All of the above

4. The time period for which drug concentration remains above MEC level is known as
   _____
   a. Onset of Action
   b. Duration of Action
   c. Therapeutic Index
   d. Area Under Curve

5. Nano-crystal size range is
   a. 100-500 nm
   b. 500 nm
   c. 200-600 nm
   d. 100 nm

6. Central Compartment is mostly associated with;
   a. Elimination
   b. Metabolism
   c. Distribution
   d. Absorption

7. Metabolism by organs other than _____ is known as Extra-hepatic metabolism:
   a. Lungs
   b. Kidney
   c. Brain
   d. Liver

8. Low Solubility and High Permeability is observed in which class of drugs?
   a. BCS Class I
   b. BCS Class II
   c. BCS Class III
   d. BCS Class IV

9. In Steady State Concentration, DR is referred to as:
   a. Drug Rate
   b. Dose Ratio
   c. Dosing Rate
   d. Drug Ratio

10. Co transport is also known as:
    a. Uniport
    b. Symport
    c. Antiport
    d. Facilitated Diffusion

11. Uphill transport is commonly known as:
    a. Active transport
    b. Passive transport
    c. Pore transport
    d. Ion-pair transport

12. Duration of washout period for crossover design is:
    a. 4 weeks
    b. 1 month
    c. 2 months
    d. 1 week

13. _____ is the organ that mainly comprises Peripheral compartment in Two Compartment model:
    a. Kidney
    b. Muscles
    c. Liver
    d. Lungs

14. An example of Permeation enhancers used in Blood-Brain Barrier is"
    a. Mannitol
    b. Dihydropyridine
    c. DMSO
    d. Immunoglobulins

15. The most frequently used Compartment model is:
    a. Physiological model
    b. Mammillary model
    c. Catenary model
    d. Distribution Parameter model

16. Pharmacokinetic methods of Bioavailability measurement involves which studies:
    a. Plasma level-time studies
    b. Urinary excretion studies
    c. Both (a) & (b)
    d. Therapeutic studies

17. Line-Weaver-Burke Plot is also known as:
    a. Scatchard Plot
    b. Klotz Plot
    c. Hitchcock Plot
    d. Direct Plot

18. Elimination Half life is also known as:
    a. Renal clearance
    b. Rate constant
    c. Plasma clearance
    d. Biological half life

19. The unit of Cmax is expressed in:
    a. mcg/ml
    b. mg
    c. mg/min
    d. μg

20. Surface Renewal Theory is also known as:
    a. Film Theory
    b. Interfacial Barrier model
    c. Limited Solvation Theory
    d. Danckwert's Model

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PART-B : Descriptive

Time : 2 hrs. 30 min.   Marks : 35

[Answer any seven (7) questions]

1.   Explain about Kinetics of Protein Binding with proper graphs.   5

2.   Explain about Two Compartment IV Infusion Open Model   5

3.   What is Bioavailability? What are the Pharmacodynamic methods   5
     of Bioavailability measurement?

4.   What are the causes of Non linearity in Drug Absorption?   5

5.   What is Compartment analysis? Discuss about 5 advantages of   1+4=5
     Compartment modeling.

6.   Discuss One Compartment Open Model IV Bolus for estimation of   5
     Pharmacokinetic parameters.

7.   Discuss about any 5 Patient related factors influencing Drug
     Absorption.   5

8.   What is IVIVC? What are the levels in IVIVC?   2+3=5

9.   What is Pharmacokinetics? Discuss about the Pharmacokinetic   1+3+1
     Parameters with proper explanation of Plasma Drug   =5
     Concentration Time Graph

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$\boxed{\textbf{PART-C: Long type questions}}$

[Answer any two (2) questions]

1. Discuss about Michaelis-Menten equation. Give a detailed explanation about the different methods of estimation of Km and Vmax.   10

2. Discuss in details about 10 methods to enhance Bioavailability.   10

3. What is Drug Absorption? Describe in details about the mechanisms of Drug Absorption with proper diagram.   1+9=10

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