2024/07

SET A

B. PHARM.
SIXTH SEMESTER
BIOPHARMACEUTICS & PHARMACOKINETICS
BP604T [SPECIAL REPEAT]

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

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

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

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

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

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

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

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

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

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

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

12. 100% Bioavailability is observed in the following route:
    a. Parenteral
    b. Oral
    c. Rectal
    d. Topical

13. 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

14. 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

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

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

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

18. High 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

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

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

-- --- --

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 Pharmacokinetic methods of Bioavailability measurement?	5
4.	What are the causes of Non linearity in Drug Absorption?	5
5.	What is Compartment analysis? Discuss about 5 advantages of Compartment modeling.	1+4=5
6.	Discuss One Compartment Open Model IV Bolus for estimation of Pharmacokinetic parameters.	5
7.	What is Dissolution? What are the different theories of Drug dissolution?	1+4=5
8.	What is IVIVC? What are the different levels in IVIVC?	2+3=5
9.	What is Pharmacokinetics? Discuss about the Pharmacokinetic Parameters with proper explanation of Plasma Drug Concentration Time Graph	1+3+1 =5

-- --- --

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**

= = *** = =