Seat Number | | | | | | |

CJ-15

BP-604-T

Biopharmaceutics and Pharmacokinetics

(736604)

Total Pages : 5]

Time : 3 Hours

Max Marks : 75

Note : (1) Do not write anything on question paper except Seat No.

(2) Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.

(3) Students should note, no supplement will be provided.

(4) *All* questions are compulsory.

1. (A) Multiple choice questions : 10

(*i*) Pharmacokinetics is :

(*a*) The study of biological and therapeutic effects of drugs.

(*b*) Study of adsorption, distribution, metabolism and excretion of drug.

(*c*) Study of absorption, distribution, metabolism and excretion of drug.

(*d*) Study of method of a new drug.

P.T.O.

(*ii*) What does pharmacodynamics exclude ?

(*a*) Excretion of substance

(*b*) Localization of drug

(*c*) Mechanism of drug action

(*d*) Interaction of substances

(*iii*) What kind of substances cannot permeate membrane by passive diffusion ?

(*a*) Hydrophobic substance

(*b*) Hydrophilic substance

(*c*) Lipid soluble

(*d*) Non-ionised substance

(*iv*) Active transport implied :

(*a*) Transport against concentration gradient

(*b*) Only on ionised drug

(*c*) Transport as per diffusion

(*d*) All of the above

(*v*) The reason determining bioavailability is :

(*a*) Rheological parameters of flood

(*b*) Osmosis of blood

(*c*) Extent of absorption and hepatic first pass effect

(*d*) Glomerular filtration rate

(*vi*) What is the appropriate route for drugs undergoing first pass metabolism ?

(*a*) Oral (*b*) Peroral

(*c*) Parenterals (*d*) Transdermal

(*vii*) The increase in hepatic enzyme activity that results in greater metabolism of drugs, called :

(*a*) Bioavailability

(*b*) Distribution

(*c*) Elimination

(*d*) Enzyme induction

(*viii*) The comparison of bioavailability between two dosage form, defined as :

(*a*) Bioequivalence (*b*) Biopharmaceutics

(*c*) Biotransformation (*d*) Biologics

(*ix*) Water repelling or cannot associate with water, means :

(*a*) Hydrophilicity (*b*) Lipophilicity

(*c*) Hydraulic (*d*) Hydrogen

(x) Non-linear pharmacokinetics is also called as :

(a) Mixed order kinetics

(b) Capacity limiting kinetics

(c) Dose dependent kinetics

(d) All of the above

(B) Answer the following (2 marks each) : 10

(i) Define elimination rate.

(ii) Define apparent volume of distribution.

(iii) What is the meaning of multicompartment ?

(iv) What does maintenance dose mean ?

(v) Define dissolution.

2. Solve any *two* : 20

(i) Explain the various mechanisms involved in drug absorption.

(ii) Discuss IVIVC.

(iii) Enlist and discuss various pharmacokinetic models.

3. Solve any *seven* : 35

(i) Explain factors affecting distribution.

(ii) Comment on bioequivalence studies.

(*iii*) Discuss Michaelis-Menten method with example.

(*iv*) Explain in detail the methods used for bioavailability measurement.

(*v*) Write a note on protein binding of drugs.

(*vi*) Discuss theories of drug dissolution.

(*vii*) Write a note on one compartment open model.

(*viii*) Comment on IV bolus kinetic of multiple dosing.

(*ix*) Write a note on renal clearance.