Total No. of printed pages = 3

PY 132701

Roll No. of candidate | | | | | | | | | | |

2021

B.Pharm 7th Semester (Repeaters) End-Term Examination

Pharmacy

PHARMACEUTICS VI(BIOPHARMACEUTICS AND PHARMACOKINETICS)

(Old Regulation)

Full Marks – 100 Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any six from the rest

1. Answer the following (MCQ) : (10 × 1 = 10)

(i) Type IV dissolution apparatus as per USP is:

(a) Paddle type apparatus (b) Flow through cell

(c) Reciprocating cylinder (d) Paddle over dsk apparatus

(ii) Very weak bases (pKa = 5.0) nature drug absorbed in which of the following part in our body?

(a) Stomach (b) Intestine

(c) Colon (d) Entire length of GIT

(iii) The term bioavailability refers to the

(a) Relationship between the physical and the chemical properties of a drug

(b) Measurement of the rate and extent of drug that reaches the systemic circulation

(c) Movement of drug into the body tissues over time.

(d) Dissolution of a drug in the GIT.

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(iv) Which is the major mechanism for absorption of drug?

(a) Active transport (b) Pore transport

(c) Passive diffusion (d) Facilitate diffusion

(v) In first order, $t_{1/2}$ is:

(a) 1/K (b) K

(c) 0.693/K (d) 2K+1

(vi) According to BCS classification, type II drugs have:

(a) High solubility and high permeability

(b) High solubility and low permeability

(c) Low solubility and high permeability

(d) Low solubility and low permeability

(vii) The rate of drug dissolution of a tablet can be expressed by the equation:

(a) Fick's law (b) Henderson Hasselbatch equation

(c) Noyes Whitney equation (d) Michelis Menten equation

(viii) In the Plasma level time curve the AUC reflects:

(a) The amount of active drug which reaches the systemic circulation

(b) The amount of drug which is absorbed

(c) The amount of drug which is eliminated

(d) The amount of drug which is metabolised

(ix) Which of the following tissues has the maximum capacity to biotransform

(a) Brain (b) Heart

(c) Liver (d) Skin

(x) Creatinine clearance is a measurement of

(a) glomerular filtration rate (b) passive renal absorption

(c) renal excretion rate (d) active renal secretion

2. (a) Discuss in details on various physicochemical factors influencing GI absorption of a drug. (7)

(b) Explain the different mechanism of drug absorption through GIT. (8)

3. (a) Classify different metabolic pathways. Explain in details the various Phase II reactions of biotransformation. (3+6)

(b) Give a detailed description of kinetics of Protein drug binding with suitable graphs. (6)

4. (a) Define the term bioavailability and bioequivalence. What are the objectives of bioavailability study? (2+5)

(b) Discuss in details about various methods of determination of bioavailability. (8)

5. (a) Explain with suitable diagram the pharmacokinetic and pharmacodynamic parameters of plasma concentration time curve in details. (8)

(b) Write a detail note on Plasma protein binding and tissue drug binding. (7)

6. (a) Define apparent volume of distribution. Explain the factors affecting distribution of drugs. (2 + 5 = 7)

(b) Explain in details the various methods of enhancement of bioavailability through enhancement of drug solubility. (8)

7. (a) Write a note on one compartment open model. (5)

(b) Discuss in detail about the bioequivalence study protocol. (5)

(c) What do you mean *by in-vitro in-vivo* correlation (IVIVC)? Explain in details. (5)

8. (a) What do you mean by renal failure? Explain in details the dose adjustment in renal failure. (2+7)

(b) Give the detail of various factors effecting renal clearance of drugs. (6)

9. Write a note on the following: (3 × 5 = 15)

(a) BCS classification System

(b) pH partition hypothesis

(c) Blood Brain barrier (BBB)