W-2022

Seat Number | | | | | | |

PANKH-05

BP-302T

Physical Pharmaceutics-I

(723302)

Total Pages : 4]

Time : 3 Hours

Max Marks : 75

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

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

(3) *All* questions are compulsory.

(4) Figures to the right indicate full marks.

(5) Draw well labelled diagrams wherever necessary.

1. (A) Choose the correct answer of the following : 10

(*i*) The surfactant having more than 16 HLB number is :

(*a*) Solubilising agent (*b*) Detergent

(*c*) Emulsifying agent (*d*) Suspending agent

(*ii*) Which of the following equations is used to give rate of drug dissolution from tablet ?

(*a*) Fick's law

(*b*) Michaelis Menton equation

(*c*) Noy's Whitheny equation

(*d*) Hasselbalch equation

(*iii*) Fick's law is used for study of.....

(*a*) Dissolution rate (*b*) Disintegration rate

(*c*) Dissociation rate (*d*) Diffusion rate

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(iv) The mass transfer of molecules in a substance from high concentration to low concentration is.....

(a) Diffusion (b) Osmosis

(c) Active transport (d) Passive transport

(v) The value 14 on pH scale indicates.....

(a) Strongly alkaline (b) Strongly acidic

(c) Neutral (d) None of these

(vi) The tonicity of solutions can be determined by :

(a) Colorimetric method (b) Haemolytic method

(c) Colligative method (d) Both (b) and (c)

(vii) Which of the following methods is used to measure pH value ?

(a) pH paper (b) Electrometric method

(c) Colorimetric method (d) All of these

(viii) The number of osmoles of solute in a litre of solution is called.....

(a) Osmolarity (b) Osomolality

(c) Buffer capacity (d) Molarity

(ix) Unit of surface tension is.....

(a) N/m^2 (b) Kg/cm

(c) dyne/cm (d) $dyne/cm^2$

(x) The process in which molecules go directly from solid to vapour phase is :

(a) Vapourisation (b) Sublimation

(c) Deposition (d) Liquefaction

(B) Answer the following questions : 2×5=10

(i) Define Buffers and write their applications.

(ii) Explain Dextrorotatory and levorotatory substance with example.

(iii) What are eutectic mixture ? Write any *two* examples.

(iv) Explain common ion effect.

(v) Write about salting out effect in short.

2. Solve any *two* : 2×10=20

(i) Define surface tension. Write various methods used for determination of surface tension. Explain in detail capillary rise method to determine surface tension.

(ii) Define complexes. Classify them and explain methods of analysis of complexes.

(iii) What are Buffers ? Write applications of buffers. Discuss various methods for determination of pH.

3. Solve any *seven* : 7×5=35

(i) Explain the methods used for determination of tonicity.

(ii) Define protein binding. Explain kinetics of protein binding.

(iii) Explain Raoult's law in detail.

(*iv*) Write drop weight and drop count method for determination of surface tension.

(*v*) Define Optical rotation. Explain measurement of optical rotation.

(*vi*) Define and classify polymorphism. Explain methods for characterization of pclymorphism.

(*vii*) Describe diffusion principles in biological system.

(*viii*) Explain solvation and association with their mechanism.

(*ix*) Define crystalline solids. Explain various forms of crystals.