Code: 13R00304

R13

B.Pharm II Year I Semester (R13) Supplementary Examinations June 2018
PHYSICAL PHARMACY – I

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
  (a)   What is ion induced dipole interaction?
  (b)   Define the term thermodynamics. Write two applications.
  (c)   State and explain Faraday's first law of electrolysis.
  (d)   List the methods for determining the dissociation constant of a substance.
  (e)   Define buffer and buffer capacity.
  (f)   Differentiate between isosmotic and isotonic solutions with suitable examples.
  (g)   Write the thermodynamic and Sorensen's definitions of pH.
  (h)   Write the differences between osmosis and diffusion.
  (i)   Define Snell's law. Describe two applications of refractive index.
  (j)   What is component? Write the number of components for a mixture of oxygen and nitrogen gases.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   Describe different types of classification of crystals with suitable examples. Add a note on polymorphism.

OR

3   Explain the phase diagram of one component system with an example. Define the terms involved. State Gibb's phase rule.

UNIT – II

4   State and explain the second law of thermodynamics. Explain the concept of free energy.

OR

5   Define dipole moment. Explain the correlations with the insecticidal activity. What is ORD?

UNIT – III

6   Explain the Cryoscopic method for the determination of molecular mass of the solute.

OR

7   Discuss the Arrhenius theory of electrolytic dissociation with examples and limitations.

UNIT – IV

8   Describe the modern theories of acids and bases. Write the expression for the calculation of percent ionization for an acidic drug.

OR

9   Describe the experimental procedure for determination of pH of a solution by electrometric method. Find the pH of 0.1M sulphuric acid solution.

UNIT – V

10   Explain two methods for adjusting the tonicity and pH of solutions. Calculate the boric acid required for making a 1% cocaine hydrochloride solution isotonic with tear secretions.

OR

11   Derive a buffer equation for an acid buffer with suitable example. Calculate the amounts of acetic acid and sodium acetate required for preparation of 1 liter of buffer of pH 5.6. The pKa = 4.735.

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