

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)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What is ion induced dipole interaction?
 - Define the term thermodynamics. Write two applications.
 - State and explain Faraday's first law of electrolysis.
 - List the methods for determining the dissociation constant of a substance.
 - Define buffer and buffer capacity.
 - Differentiate between isosmotic and isotonic solutions with suitable examples.
 - Write the thermodynamic and Sorensen's definitions of pH.
 - Write the differences between osmosis and diffusion.
 - Define Snell's law. Describe two applications of refractive index.
 - 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 $pK_a = 4.735$.
