Code: 13R00304

R13

B.Pharm II Year I Semester (R13) Supplementary Examinations June 2017

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 the type of intermolecular interaction involved when sodium chloride is dissolved in water?

(b) Define a phase. Write two examples of coexisting phases.

(c) Define heat content. Describe its applications.

(d) Why refractive indices of liquids are always higher than one?

(e) Explain why colligative properties are applicable to dilute solutions.

(f) Why do ionic compounds dissolve only in polar liquids?

(g) What is the pH of 1N ammonia solution? The ionization constant of ammonium hydroxide at 25℃ is 1.74×10^{-5}.

(h) Describe the applications of pH.

(i) Define a buffer solution. Give one example.

(j) What are isosmotic and isotonic solutions? Give examples.

PART – B

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

UNIT – I

2 Explain the importance of intermolecular forces in understanding of physical and chemical properties of substances.

OR

3 (a) State and explain the laws of crystallography.

(b) With the help of a diagram, explain the behavior of phenol and water system.

UNIT – II

4 State and explain the second law of thermodynamics. What is free energy and entropy?

OR

5 Explain the process of inducing dipole moment in a non-polar molecule. Discuss the principle, construction and working of Abbe refractometer.

UNIT – III

6 With the help of a labeled diagram, explain the Landsberger method for determination of molecular mass of a solute.

OR

7 Describe Arrhenius theory of electrolytic dissociation. Write the evidences in favor of this theory.

UNIT – IV

8 Describe the modern theories of acids and bases.

OR

9 Describe the principle and experiment procedure for the determination of pH by electrometric method.

UNIT – V

10 (a) Calculate the amounts of acid and sodium acetate required for preparation of 1 liter of buffer of pH 5.6. The pKa = 4.735.

(b) Write the effect of dilution, addition of salt and temperature on the pH of a buffer solution.

OR

11 Explain various methods of adjusting the tonicity and pH.

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