Code: 15R00302

R15

B.Pharm II Year I Semester (R15) 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) How is induced dipole-induced dipole interaction caused? Illustrate with a suitable example.
(b) Describe the types of forces, which bind the units together in solid.
(c) What is optical activity? What is its relationship with specific rotation?
(d) Define thermodynamic equilibrium. Explain criteria for equilibrium.
(e) State and explain Raoult's law for vapour pressure lowering.
(f) What is meant by semipermeable membrane? Give two examples.
(g) Define Lewis acid and base with example.
(h) Write two applications of buffers with specific examples.
(i) Define order of reaction with suitable example.
(j) Define shelf life and energy of activation.

PART – B

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

UNIT – I

2 Describe different Vander Waal's forces of intermolecular attractions with suitable examples. Explain applications of intermolecular forces in pharmacy.

OR

3 What is crystal? Mention various crystal systems. Define polymorphism. Describe its applications in pharmacy.

UNIT – II

4 Describe optical properties in the elucidation of the chemical structure giving two examples. Illustrate the principle, construction, and working of polarimeter.

OR

5 State and explain the second law of thermodynamics. Prove that all variable engines, operating in cycles between same temperature limits T1 & T2 possess the same efficiency.

UNIT – III

6 Discuss Arrhenius theory of electrolytic dissociation with postulates and suitable examples. What are its limitations?

OR

7 Define Osmosis. Explain the concept of osmosis and osmotic pressure with the help of experiment.

UNIT – IV

8 Describe the method for estimating the buffer capacity of solution. Explain any two methods for adjusting the tonicity and pH.

OR

9 State Ostwald's dilution law. Give its limitations. Explain principle and method involved in the determination of dissociation constant of substance by conductivity method.

UNIT – V

10 Differentiate between order and molecularity of a chemical reaction. Describe the factors which govern the rate of chemical reaction.

OR

11 Discuss the applications and limitations of Arrhenius equation in the stability testing of pharmaceuticals.

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