

B PHARM
(SEM-II) THEORY EXAMINATION 2018-19
PHARMACEUTICAL CHEMISTRY-III
(PHARMACEUTICAL PHYSICAL CHEMISTRY)

*Time: 3 Hours**Total Marks: 100***Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. Give the unit of specific conductance.
 - b. State first law of thermodynamics.
 - c. Define rheochor.
 - d. Write down the Phase rule for two component system.
 - e. Define term degree of freedom with suitable example.
 - f. Define equivalent conductance.
 - g. What is Bond Energy?
 - h. Write numerical definition of entropy.
 - i. What is molar conductance?
 - j. Differentiate between physical adsorption and chemical adsorption.

SECTION B

- 2. Attempt any three of the following: 10 x 3 = 30**
- a. Explain **first** order reaction kinetics in detail.
 - b. What is distribution law? Give its limitation. How is distribution law modified if one of the solute undergoes dissociation or association?
 - c. Derive rate constant for second order reaction when both reactants are different.
 - d. Define the term surface tension. Discuss factors which effect surface tension.
 - e. Briefly discuss transition state theory and write short note on acid –base catalysis.

SECTION C

- 3. Attempt any one part of the following: 10 x 1 = 10**
- (a) Give the postulates of molecular orbital theory and differentiate between bonding and anti bonding molecular orbitals.
 - (b) Define phase, component and degree of freedom with suitable example. Discuss in detail about one component H₂O phase diagram.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a) State and explain in detail first law of thermodynamics.
 - (b) Explain Langmuir and Freundlich adsorption isotherm.

5. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Give the postulates of molecular orbital theory and differentiate between bonding and anti bonding molecular orbitals.
 - (b) Explain heat of reaction, heat of formation, heat of neutralization and heat of solution with suitable example.
6. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) What is Hess law of constant heat of summation and its importance? Explain the principle and working of Bomb calorimeter with suitable diagram.
 - (b) Define electrolysis. Explain faraday's law of electrolysis and also discuss Kohlrausch law.
7. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Write in detail about Debye-Huckel theory to explain conductance of strong electrolytes.
 - (b) Write in detail about symmetry of crystals and Explain Bragg's equation for crystal diffraction.

CORRECTION M 10.05.19 BOP122

Kindly Read Q.no. 5a as

5a) Discuss in detail solid-crystalline state and polymorphism.