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Paper Id: 150202 Roll No. | | | | | | | | | | |

B.PHARM

(SEM-II) THEORY EXAMINATION 2017-18

PHARMACEUTICAL CHEMISTRY-III

(PHARMACEUTICAL PHYSICAL CHEMISTRY)

Time: 3 Hours *Total Marks: 100*

Note: 1. Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Give the unit of specific conductance.
b. State Third law of thermodynamics.
c. Define rheochor.
d. Write down the Phase rule for one component system.
e. Define term degree of freedom with suitable example.
f. Define enthalpy and internal energy.
g. What is Bond Energy?
h. What is transport number?
i. What is equivalent conductance and 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. Also discuss the half life for first order reactions.
b. Give the postulates of molecular orbital theory and differentiate between bonding and anti-bonding molecular orbitals.
c. Derive rate constant for second order reaction when both reactants are different.
d. Define the term surface tension. Discuss various 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) What is distribution law? Give its limitation. How is distribution law modified if one of the solute undergoes dissociation or association?
(b) State and explain first law of thermodynamics.

4. Attempt any *one* part of the following: 10 x 1 = 10

(a) Define phase, component and degree of freedom with suitable example. Discuss in detail about one component H_2O phase diagram.
(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.