S.Y.B.PHARM. SEMESTER-III (CBCS - 2015 COURSE) :
SUMMER - 2018
SUBJECT : PHYSICAL PHARMACY – I

Day : **Monday** Time : **02.00 PM TO 05.00 PM**
Date : **30/04/2018** **S-2018-3918** Max. Marks : 60

N.B.:

1) **Q.No.1** and **Q.No.5** are **COMPULSORY**. Out of the remaining questions attempt **ANY TWO** questions from each section.
2) Answers to both the sections should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Answer **ANY FIVE** of the following: **[10]**

a) What is Joule Thompson effect?
b) Derive ideal gas equation.
c) Explain the term 'Phase'.
d) Define Molarity.
e) Differentiate between ideal and real solution.
f) What is effect of dilution on equivalent and specific conductance?

Q.2 **a)** Explain in detail binding forces between molecules. **[06]**
b) Give an account of kinetic molecular theory of gases. **[04]**

Q.3 **a)** Define Raoult's Law. Explain deviations from Raoult's Law. **[06]**
b) Prove that lowering of the vapor pressure is a colligative property. **[04]**

Q.4 Write notes on **ANY TWO** of the following: **[10]**

a) Arrhenius theory
b) Two component system
c) Determination of critical constants

SECTION – II

Q.5 Answer **ANY FIVE** of the following: **[10]**

a) What is effect of temperature and pressure on solubility of gases in liquid?
b) Give significance of partition co-efficient.
c) Define order of reaction.
d) What is the unit of rate constant of first order reaction?
e) Classify energy of thermodynamic system.
f) Define half-life of a reaction.

Q.6 **a)** Derive and expression for rate constant of second order reaction. **[06]**
b) Explain transition state theory. **[04]**

Q.7 **a)** What is Nernst distribution law? Explain effect of molecular association and dissociation on partitioning of molecules. **[06]**
b) Describe in detail solute – solvent interaction. **[04]**

Q.8 Write notes on **ANY TWO** of the following: **[10]**

a) Methods to determine order of reaction
b) Solubility of slightly soluble electrolytes
c) Effect of temperature on rate of reaction

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