S.Y.B.PHARM. SEMESTER-III (CBCS - 2015 Course) : SUMMER - 2019

SUBJECT: PHYSICAL PHARMACY - I

Day: Friday
Date: 03/05/2019

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

S-2019-4385

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) Answer to both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

Q.1 Answer **ANY FIVE** of the following: **(10)**

a) Define: i) Mole Fraction ii) CST
b) What is Joule Thomson effect?
c) Determine 'F' for water, water vapour and ice in equilibrium.
d) Define colligative properties.
e) What is effect of dilution on specific and equivalent conductance?
f) Give justification for reduced phase rule.

Q.2 **a)** Give detailed account of binding forces between molecules. **(06)**
b) Define Raoult's law. Explain deviations from the same. **(04)**

Q.3 **a)** Explain in detail methods for liquefaction of gases. **(06)**
b) Derive van der Waal's equation for real gases. **(04)**

Q.4 Write short notes on **ANY TWO** of the following: **(10)**

a) One component three phase system
b) Andrews isotherms of CO_2
c) Debye Huckel theory

SECTION – II

Q.5 Answer **ANY FIVE** of the following: **(10)**

a) Define order and molecularity of reaction.
b) What are different types of solvents?
c) Give limitations of Nernst distribution law.
d) Enlist ways of decomposition of medicinal agents.
e) Give significance of accelerated stability studies.
f) Write formula and unit for rate constant of second order reaction.

Q.6 **a)** Explain in detail methods to determine order of reaction. **(06)**
b) Describe in detail solute-solvent interaction. **(04)**

Q.7 **a)** Derive an expression for solubility parameter. **(06)**
b) Explain effect of temperature on rate of reaction. **(04)**

Q.8 Write short notes on **ANY TWO** of the following: **(10)**

a) Solubility of gases in liquids
b) Transition state theory
c) First order reaction

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