

**S.Y.B.PHARM. SEMESTER-III (2011 COURSE) : WINTER -
2017**

SUBJECT: PHYSICAL PHARMACY-I

Day: Wednesday
Date: 15/11/2017

Time: 02.00 PM TO 05.00 PM
Max. Marks: 80

W-2017-3821

N.B:

- 1) **Q.1 and Q.5 are COMPULSORY.**
- 2) Figures to the right indicate **FULL** marks.
- 3) Out of the remaining attempt **ANY TWO** questions from each section.
- 4) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION-I

- Q.1** Answer the following questions (**ANY FIVE**): **(10)**
- a) Differentiate ideal and real gas.
 - b) Define constitutive properties with examples.
 - c) Enlist methods for liquefaction of gases.
 - d) What is compressibility factor? Give its significance.
 - e) Derive 'F' value for mixture of O₂ and N₂ gas.
 - f) Define: i) Mole fraction ii) CST
- Q.2** a) Derive van der Waals equation for real gases. **(07)**
b) Write a note on one component three phase system. **(08)**
- Q.3** a) Derive an expression for Gibbs phase rule. What is reduced phase rule? **(07)**
b) Define colligative properties. Explain any one in detail. **(08)**
- Q.4** Write notes on (**ANY THREE**): **(15)**
- a) Debye Huckel theory
 - b) Binding forces between molecules
 - c) Two component system
 - d) Raoult's law and its deviations

SECTION-II

- Q.5** Answer the following questions (**ANY FIVE**): **(10)**
- a) What is effect of temperature on reaction rate?
 - b) Give significance of accelerated stability studies.
 - c) Give significance of dielectric constant.
 - d) Differentiate between order and molecularity of reaction.
 - e) Define: i) Solubility ii) Half life
 - f) Write formula and units for rate constant of second order reaction.
- Q.6** a) Define Nernst distribution law. Explain effect of ionic association and dissociation on the same. **(07)**
b) Explain in detail methods used to determine order of reaction. **(08)**
- Q.7** a) Derive an expression for solubility parameter. **(07)**
b) Give a detailed account of decomposition of medicinal agents. **(08)**
- Q.8** Write notes on (**ANY THREE**): **(15)**
- a) Solubility of gases in liquid
 - b) Arrhenius equation
 - c) Collision theory
 - d) Solute-solvent interaction

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