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Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2012 to 2016) (Sem.-2)
PHARMACEUTICAL CHEMISTRY-II (Physical Chemistry)
Subject Code : BPHM-202
M.Code : 46212

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A**1. Explain in brief :**

- a. Define the terms eigen value and eigen function.
- b. How does absorption vary from adsorption? Discuss the factors which influence adsorption of a gas on a solid.
- c. Distinguish between order and molecularity of a reaction.
- d. Write two characteristics each of homogeneous and heterogeneous catalysis.
- e. Write the Michaelis-Menten equation governing kinetics of enzyme catalyzed reactions.
- f. What is meant by molar extinction coefficient? What is its physical significance?
- g. Write expression for Gibbs Adsorption isotherm.
- h. Draw the phase diagram for the CO₂ system.
- i. Define the Joule-Thomson coefficient. Show that it is zero for an ideal gas.
- j. What are colligative properties? Give examples.
- k. Define the terms :
 - I. Refractive index
 - II. Surface Tension

- l. Define Henry's law for dilute solutions.
- m. Write various assumptions of Kinetic theory of gases.
- n. Define zeroth and second law of thermodynamics.
- o. Define the term molar conductance and how does it vary with concentration.

SECTION-B

2. Explain the terms Osmosis and Osmotic Pressure. Also write van't Hoff equation for osmotic pressure of a dilute solution.
3. Define the term parachor value. What are the dimensions of parachor value and also discuss its applications?
4. Draw the Jablonski diagram for various radiative and non-radiative photophysical processes.
5. Describe the Debye-Huckel Theory for strong electrolytes.
6. What are state functions? Give examples. How is Euler Reciprocal relation applicable to state functions?

SECTION-C

7. Derive the Schrodinger wave equation using various postulates of Quantum Mechanics.
8. A monochromatic radiation is incident on a solution of 0.05 molar concentration of an absorbing substance. The intensity of radiation is reduced to one-fourth of the initial value after passing through 10cm of the solution. Calculate the molar extinction coefficient of the substance.
9. Discuss briefly Freundlich adsorption isotherm of adsorption. Show that at normal pressures, Langmuir's unimolecular adsorption isotherm becomes identical with Freundlich adsorption isotherm.
10. The $t_{1/2}$ of a reaction is doubled as initial concentration of the reactant is doubled. What is the order of the reaction?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.