B. Pharm.
(SEM. II) EXAMINATION, 2006-07
PHYSICAL CHEMISTRY
(SPECIAL CARRYOVER EXAMINATION)

Time : 3 Hours] [Total Marks : 80

Notes : (1) Attempt all the questions.
(2) All questions carry equal marks.

1 Attempt any four of the following : 4×4

(a) How does the elevation in boiling point help in determining the molecular weight of a compound ?

(b) What is optical activity? How can it be measured ?

(c) How is surface tension determined using Stalagmometer ?

(d) Write an account of the kinetic theory of gases.

(e) What are colligative properties? Give examples of each property.
2 Attempt any four of the following:  

(a) Explain first law of thermodynamics.

(b) Differentiate between reversible and irreversible processes.

(c) Explain Langmuir adsorption isotherm.

(d) What is Joule Thompson's effect?

(e) Explain the concept of entropy.

3 Attempt any four of the following:  

(a) What are Faraday's laws of electrolysis? Give their importance.

(b) Differentiate between molecularity and order of a reaction.

(c) Explain collision theory of reaction rates.

(d) Explain briefly Debye Huckel theory.

(e) What are buffer solutions? What is their importance in pharmaceutical and biological systems.
4 Answer any **two** of the following: 8+8

(a) Explain Hess’s law of constant heat summation. Discuss its applications giving suitable examples.

(b) Define enthalpy of reaction and explain Kirchoff’s equation.

(c) What is heat of combustion? How is it determined using bomb calorimeter? Discuss applications of the heat of combustion.

5 Answer any **four** of the following: 4×4

(a) Explain the phase rule.

(b) What do you understand by congruent melting point and Eutectic point?

(c) Explain distribution law and its limitations.

(d) What is Miller indices? How is it determined?

(e) Discuss the classification of crystals with examples.