PY - 104

B.Pharmacy I Semester

Examination, December 2014

Pharmaceutical Chemistry - I (Physical)

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Define Aufbau principle.
   b) What do you mean by Hund's rule?
   c) Discuss the concept of hybridization.
   d) Explain VSEPR theory in detail.

   OR

   Discuss the important features of valence bond theory.

2. a) What do you mean by dipole moment?
   b) Define refractive index.
   c) What is enthalpy and entropy?
   d) Describe polymorphism, isomorphism, isotropy and anisotropy with suitable examples.

OR

Discuss law of equilibrium and equilibrium constant.

3. a) What do you mean by Gibb's free energy?
   b) What is molar heat capacity?
   c) Explain Le Chatelier's principle.
   d) Explain the various factors affecting the equilibrium of a chemical reaction.

   OR

   Discuss Raoult's law and its applications.

4. a) What is osmotic pressure?
   b) What do you mean by order of a reaction?
   c) Explain Henry's Law.
   d) How will you determine rate of reaction experimentally?

   OR

   Explain Freundlich and Langmuir adsorption isotherm.

5. a) What do you mean by homogenous catalysis?
   b) Explain Boyle's law.
   c) Explain enzyme catalysis and its mechanism.
   d) Discuss the kinetic theory of gases.

   OR

   Explain how real gases deviate from their ideal behavior.