VT Oct 08-330

Con. 5986–08.
Nov-08

Physical Pharmacy - I

RS–4742

(2 Hours)

[Total Marks : 40

2008-09

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from the remaining **five** questions.
(3) **All** questions carry **equal** marks.
(4) Draw neat **labelled diagrams** wherever **necessary**.

1. (a) Discuss the causes of deviation of real gases from ideal gas behaviour. How are they accounted for in Van der Waals equation ? **4**
   (b) Define :– **4**
   (i) Isotonic
   (ii) Hypertonic and
   (iii) Hypotonic solutions and
   explain any one method to measure Osmotic pressure.

2. (a) Explain the working of Abbe's refractometer. **4**
   (b) Define the following terms :– **4**
   (i) Specific conductance
   (ii) Equivalent conductance
   (iii) Cell constant.

3. (a) What is molar heat capacity ? Derive the relation between C_p and C_v. **4**
   (b) Describe any one method to measure freezing point depression. **4**

4. (a) Discuss the principle behind distillation of an ideal binary mixture and explain fractional distillation. **4**
   (b) A solution of 2·44 g of benzoic acid in 100 g of benzene produced a freezing point 0·5 °C lower than that of benzene. The molal depression constant of benzene is 5 °C. Calculate the molecular weight of benzoic acid. What is the inference drawn from the results obtained ? **4**

5. (a) Explain additive, constitutive and colligative properties with examples. **4**
   (b) Describe the various types of conductometric titrations. **4**

6. Write short notes on any **two** :– **8**
   (a) Azeotropic Distillation
   (b) Transport Number
   (c) Raoults Law.

****