

25th April, 2013

physical pharmacy - I

25/4/13

AGJ 1st half (h) 36

Con. 1183-13.

Sem - I (Rev.) ^{Sem - I (A.T.K.T. Rev.)} A.T.K.T. P.P. I

DC-2003

(2 Hours)

[Total Marks : 40

N.B. : (1) Question No. 1 is **compulsory**

(2) Attempt any **four** questions from remaining **five** questions.

(3) Draw **neat**, labelled diagrams, wherever **necessary**.

(4) **All** questions carry **equal** marks.

1. (a) State Raoult's Law. Derive Raoult's Law and give its limitations. 4
 - (b) What are Ideal and Real gases ? Derive Vander Waal's equation for real gases. 4
 2. (a) A sample of camphor used in the Rast method of determining molecular masses had a melting point of 176.5 °C. The melting point of a solution containing 0.522 g of camphor and 0.0386 g of an unknown substance was 158.8 °C. Find molecular mass of the substance. k_f of camphor per kg is 37.7. 4
 - (b) Discuss the types of thermodynamic systems with examples. 4
 3. (a) What are constitutive properties ? Give the applications of Dipole Moment. 4
 - (b) Define Cryoscopic constant. Explain any one method to determine molecular weight by depression in freezing point. 4
 4. (a) Derive an equation for isothermal reversible expansion work of an ideal gas. 4
 - (b) Discuss the variation of equivalent conductance with dilution. 4
 5. (a) If a Carnot engine operating between two heat reservoirs at 227 °C and 27 °C absorbs 1000 calories from the 227 °C reservoir per cycle, how much heat is discharged into the 27 °C reservoir and how much work is done per cycle ? What is the efficiency of the cycle ? 4
 - (b) Discuss the various methods for measurement of viscosity. 4
 6. Write short notes on (Any **two**) :- 8
 - (a) Fractional Distillation
 - (b) Conductometric Titrations
 - (c) Aerosols.
-