



S-3484

M. Sc. (Sem. I) (Self Finance) Examination

March / April – 2011

Chemistry : Paper - III

(Physical Chemistry)

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशांशवैक निशान्नीवाणी विगतो उतरवडी पर अवश्य लभवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
M. Sc. (Sem. 1) (Self Finance)

Name of the Subject :
Chemistry : Paper - 3

Subject Code No. : 3 4 8 4 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

- (2) Attempt all the questions (Compulsory).
(3) Figures to the **right** indicate full marks.

1 Answer any **three** of the following: 18

- (a) State and explain various partition functions. Derive equation for the translational partition function for diatomic molecules.
(b) Explain chemical potential and its significance.
(c) Define :
(i) Ideal and non-ideal solutions
(ii) Excess functions
(iii) Partial molar properties
(d) State and explain Boltzmann distribution law.

2 Answer any **three** of the following : 18

- (a) Describe the Michaelis-Menton kinetics.
(b) Explain Arrhenius equation and discuss activated complex theory and steric factor.
(c) Write note on stopped flow method and mention its merits.
(d) Discuss flash photolysis in fast reactions.

- 3** Answer any **three** of the following : **18**
- (a) Briefly describe the stereochemistry of polymers.
 - (b) Write note on thermal transitions in polymers.
 - (c) Describe kinetics of free radical polymerization.
 - (d) Briefly describe dilute solution viscosity method for the determination of molecular weight of polymers.
- 4** Answer any **three** of the following :- **16**
- (a) Write on the various laws of thermodynamics.
 - (b) Write a note on magnetic resonance method.
 - (c) Define Number and mass average molecular mass. Explain molecular mass distribution.
 - (d) Discuss thermodynamics of polymerization.
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