



Printed Pages : 4

PHAR – 121 / PH – 121(O)

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 5067/5047

Roll No.

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B. Pharm.

(SEM. II) EXAMINATION, 2006-07

PHYSICAL CHEMISTRY

Time : 3 Hours]

[Total Marks : 80

- Note : (1) Attempt *all* questions.
(2) All questions carry *equal* marks.

1 Answer any **four** of the following : **4×4=16**

- (a) Derive the kinetic gas equation
- (b) Define ideal gas and explain how it is different from real gases.
- (c) Define relative and absolute viscosity
- (d) What are the methods for determination of dipole moment ?
- (e) What are the methods for measurement of refractive index ?

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

- (a) State and explain first law of thermodynamics.
- (b) Explain “Entropy” and give its unit.
- (c) Derive Kirchoff’s equation.

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[Contd...

- (d) Explain :
(i) Heat of fusion (ii) Heat of sublimation
- (e) What is the main difference between thermochemistry and thermodynamics.

3 Attempt any **four** of the following: **4×4**

- (a) Explain Faraday's law of electrolysis
- (b) What do you understand by first order kinetics in a reaction.
- (c) State and explain Henry's law
- (d) Explain vant Hoff's theory of dilute Solutions.
- (e) What is (i) pH scale (ii) Buffer solution.

4 Attempt any **four** of the following : **4×4**

- (a) What is Hess law of constant heat summation
- (b) Describe Bomb calorimeter.
- (c) What is Ostwald's dilution law.
- (d) What is Kirchoff's equation and its significance
- (e) What is heat of reaction and heat of formation

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

- (a) Explain one component system with a suitable phase diagram.
- (b) Define partition coefficient. How is it determined experimentally ?
- (c) What are homogeneous and heterogeneous catalysis ?
- (d) What is Millers Indices ?
- (e) Types and properties of crystals.

PHARMACEUTICAL ANALYSIS - I (OLD)

- Note :*
- (1) Attempt **all** the questions.
 - (2) All questions carry **equal** marks.

1 Answer any **four** of the following : **4×4=16**

- (a) Write a note on the removal of determinant errors.
- (b) What are the stages in material sampling?
- (c) Define the terms :
 - (i) standard solution
 - (ii) titrant
 - (iii) titrand
 - (iv) equivalence point.
- (d) Explain the terms primary and secondary standards.
- (e) Write a note on interferences.

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

- (a) Calculate the pH of 0.1 N HCl.
- (b) Explain the titration curve of weak acid-strong base.

- (c) How will you prepare and standardize 1 N HCl.
- (d) Discuss the estimation of Boric acid.
- (e) Write a note on choice of indicators.

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

- (a) Write a note on potassium dichromate as an oxidising agent.
- (b) Calculate the equivalent weight of KMnO_4 in
 - (i) acidic solution
 - (ii) basic solution
- (c) Preparation and standardisation of 0.1 N sodium thiosulfate solution.
- (d) Write a note on titrations involving KBrO_3 .
- (e) Estimation of Hydrogen peroxide.

4 Answer any **two** of the following : **8×2**

- (a) Discuss the titration curve of NaCl and AgNO_3 .
- (b) Discuss the Volhard's method of estimation of Halides?
- (c) Write a note on Fajan's method.

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

- (a) Briefly discuss the steps in gravimetric analysis.
- (b) Define the terms coprecipitation and post-precipitation.
- (c) Write a note on washing of the precipitate.
- (d) Write a note on estimation of Barium as Barium sulphate.
- (e) Write a brief note on organic precipitants.