(c) Does the rate of reaction remains constant throughout the reaction

(d) Define pH

(e) Why Ostwald dilution law is not applicable to strong electrolytes ?

(f) Define Solubility. 1×6

Section A

2. (a) Why rate of reaction becomes nearly double for 10° rise in temperature ? 2

(b) Derive integrated rate expression for Ist order reaction. 2

(c) Which is rate determining step ? 1

3. (a) For a bimolecular collision theory derive expression for rate, rate constant and frequency factor for like molecular. 3

(b) Give the advantages of transition state theory over collision theory. 2

4. (a) Briefly explain different methods for the determination of the order of a reaction 3

(b) Calculate the activation energy of a reaction whose reaction rate quadruples when the temperature changes from 293 K to 313 K. 2

Section B

5. (a) What are main postulates of Arrhenius theory of ionisation ? Discuss the limitations of this theory. 3½

(b) Why Kohlrausch law is called the law of independent migration of ions ? 1½

6. (a) Explain the effect of dilution on specific conduction and equivalent conductance. 2

(b) What is meant by the term transport number ? Is it constant for an ion ? 1

(c) How will you test the validity of Ostwald dilution law ? 2

7. (a) Give the principle of conductometric titrations. What type of titeration curves are obtained when :

(i) A mixture of HCl is titrated with NaOH

(ii) CH_3COOH is titrated with NH_4OH. 3

(b) How ionic Conductance differ from ionic mobility ? How do both are related to each other ? 2

8. (a) Give experimental Determination of Transport Numbers. 3

(b) Explain the application of Kohlrausch law in determining equivalent conductance at infinite dilution ($\wedge_0$) for weak electrolytes. 2

Roll No. .....

(05/16-I)

5173

B. Sc. EXAMINATION

(For Batch 2011 to 2013 Only)

(Second Semester)

CHEMISTRY

CH-105

Paper-V

Physical Chemistry

Time : Three Hours *Maximum Marks :* 26

Note : Attempt *Five* questions in all, selecting *one* question from each Section (A and B). Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) Define Psuyedounimolecular reactions.

   (b) What is half life period ?