SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
B.Sc.Chemistry - END SEMESTER EXAMINATIONS APRIL - 2024
SEMESTER - VI
20UCHCT6015 - Physical Chemistry - II

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Define
   (i) Specific conductance
   (ii) Equivalent conductance
   (iii) Molar conductance
2. Discuss Wein effect and Falkenhagen effect.
3. Explain the working of Hydrogen electrode with the help of a neat diagram and give the electrodic reactions and Emf.
4. Illustrate briefly how does Debye-Huckel theory explain the increase in equivalent conductance with dilution in case of strong electrolytes.
5. Derive Nernst equation for electrode potential.
6. List out the types of potentiometric titrations. Give example and explain acid-base titration.
7. State Kohlrausch's law and give any 2 applications.
8. List out the symmetry operations that a molecule can exhibit.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain the term Transport number.How it is determined by Hittorf's method.
10. With the help of conductivity how can you determine
    (i) Solubility product of HCl
    (ii) Degree of dissociation of weak electrolyte
    (iii) Ionic product of water.
11. (a) Derive an expression to calculate the electrode potential for Hydrogen electrode. (7)
    (b) What are concentration cells? Give its types. (3)

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12. Calculate the pH of the given solution using quinhydrone electrode.

13. (a) What are point groups. Give examples.
    (b) Construt group multiplication table for C_2v point group.

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