B.Sc. DEGREE EXAMINATION,APRIL 2020
III Year VI Semester
Physical Chemistry - II

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. State Kohlrauschs law.
2. What are metallic conductors?
3. Define activity coefficient of an electrolyte.
4. What is Falkenhagen effect?
5. Define standard electrode potential.
6. What is electrochemical series? Give an example.
7. Define solubility product.
8. Give any two applications of emf measurement techniques.
9. Give the pH range for a carbonate-bicarbonate buffer.
10. Write the point groups of ammonia and water molecules.
11. Name the types of electrode.
12. Differentiate equivalent conductance and molar conductance.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Explain the measurement of conductance for strong electrolyte.
14. Write note on degree of hydrolysis and solubility product.
15. Derive Nernst equation for using electrode potential.
16. Write the applications of Concentration Cells.
17. Explain in detail about symmetry operations.
18. Write note on Potentiometric titrations.
19. Write note on following terms (a) electrode reactions (b) standard EMF.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain the determination of Transport Number of strong electrolytes by Hiltorffs method.
21. Derive Debye Huckel Onsagar equation.
22. Derive an equation for liquid junction potential.
23. (a) Describe the determination of pH using Glass electrodes.
    (b) Derive an expression for concentration cell without transference for an electrode.
24. Construct a group multiplication table for point group C_3v and C_2h.

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