

B.Sc. Chemistry Sem V Assignment (2026-27)

Instructions:

- These assignments are common to Major-1 and Major-2 students.
 - Write the assignments in fair registers (use separate registers for Physical and Organic Chemistry papers)
 - Assignment submission & viva: 12 & 13 October 2026, 11:00 AM onwards.
 - Students must bring 2 copies of your last semester's marksheet at the time of submission.
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Paper: Physical Chemistry

Q 1. State and explain Kohlrausch's law of ionic mobilities. Discuss its applications.

Q 2. Explain Arrhenius Theory of electrolytic dissociation. Describe its limitation.

Q 3. What is Ostwald's dilution law? Give limitation of this law?

Q 4. Write Debye-Huckel-Onsager equation in complete form. What do different symbols signify?

Q 5. What do you mean by transport number of an ion? Describe Hittorf's method to determine transport number.

Q 6. Write a short note on application of conductivity measurement.

(a) How is solubility of a sparingly soluble salt is determined.

(b) How ionic product of water is determined.

Q 7. What is Reference Electrodes. Explain the Standard Hydrogen Electrode and Calomel Electrode.

Q 8. Derive Nernst equation for e. m. f. of a cell reaction.

Q 9. Discuss the Electrochemical series. Give application of electrochemical series.

Q 10. What are Concentration cells? How are they classified into different types? Give one example of each. Taking suitable example of a concentration cell, derive expression for the EMF of a concentration cell.

Q 11. Write a short note on liquid junction potential.

Paper: Organic Chemistry

Discuss the mechanism of the following reactions –

1. Meerwein-Ponndorf-Verley reduction
2. Bouveault-Blanc reduction
3. Fischer-Speier esterification
4. Schotten-Baumann reaction
5. Darzens reaction
6. Malaprade reaction
7. Pinacol-Pinacolone rearrangement
8. Diazotisation reaction
9. Claisen rearrangement
10. Fries rearrangement
11. Gattermann formylation
12. Houben-Hoesch reaction
13. Kolbe's reaction
14. Reimer-Tiemann reaction
15. Lederer-Manasse reaction



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