Electrochemistry Topic Tree

The **Electrochemistry** topic for Class 12 NCERT Chemistry can be organized into the following structure, based on typical textbook chapters on this subject:

1. Introduction to Electrochemistry

- Definition and importance of electrochemistry.
- Electrochemical cells and their applications.

2. Electrochemical Cells

- Galvanic cells (Voltaic cells).
- Construction of a galvanic cell.
- Representation of electrochemical cells.
- Half-cell reactions.

3. Electrode Potential and EMF

- Standard electrode potential.
- Nernst equation and its applications.
- Measurement of standard electrode potential.
- Electrochemical series and its significance.

4. Types of Electrochemical Cells

- Primary and secondary cells.
- Examples: Dry cell, lead-acid battery, nickel-cadmium battery.
- Fuel cells and their working principles.

5. Electrolysis

- Faraday’s laws of electrolysis.
- Applications of electrolysis (Electroplating, refining, etc.).
- Industrial electrolytic processes (e.g., extraction of aluminum).

6. Conductance of Electrolytic Solutions

- Conductors, insulators, and electrolytes.
- Conductance (specific, molar, and equivalent conductance).
- Kohlrausch’s law and its applications.

7. Electrochemical Applications

- Corrosion and its prevention.
- Batteries and fuel cells.

- Electroplating and electrorefining.

8. Numerical Problems

- Solving problems related to electrode potentials, electrolysis, and cell EMF.

This structure covers key concepts, laws, applications, and calculations typically included in the electrochemistry unit in Class 12 NCERT Chemistry textbooks. You can cross-check this outline with the official NCERT textbook for further details.