Engineering Chemistry

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1a) Define the following:

Ans) (i) Electrode Potential: The potential difference created when an electrode is in contact with its ions, indicating its tendency to gain or lose electrons.

(ii) Standard Electrode Potential (E°): The electrode potential measured under standard conditions (1M concentration, 1 atm pressure, 25°c) relative to the standard hydrogen electrode.

(iii) Electrochemical Series: A list of elements arranged by their standard electrode potentials, from most -ve to most +ve', showing their tendency to ride or reduce.

2a) Discuss any 2 applications of electrochemical series.

Ans) • Predicting Redox Reactions: The series helps identify which substances will undergo oxidation or reduction, aiding in battery and galvanic cell design.

• Determining Reactivity and Displacement reactions: It predicts which metal can displace others from solutions, useful in metallurgy and corrosion prevention.