
Vizle

Electrochemistry

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① Electrochemical cell

Salt Bridge & its func^{n} #

KNO_3, NH_4NO_3 etc

Inert electrolyte

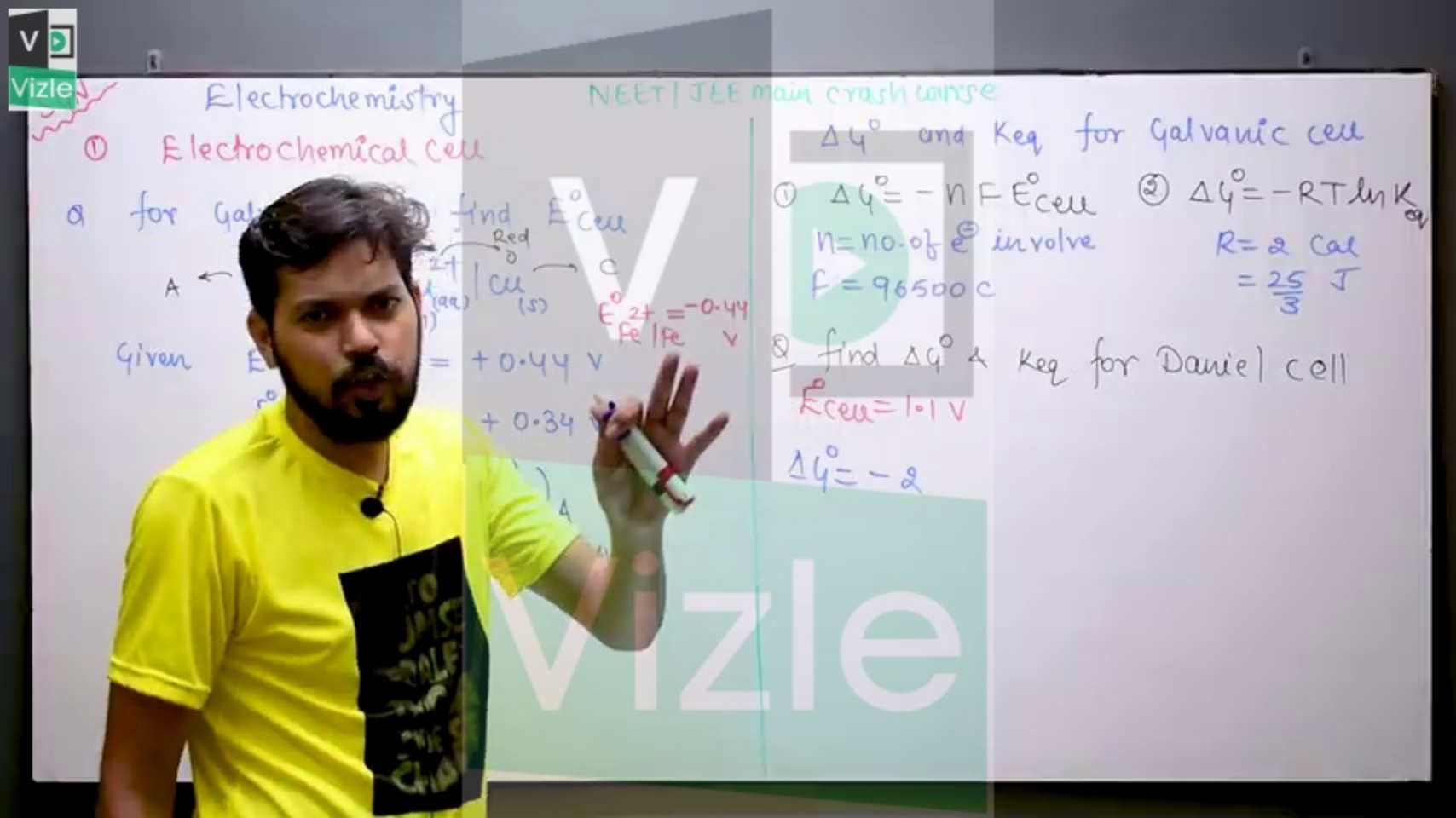
+

paste of polysaccharide

(agar-agar)

* KCl is not used as electrolyte in

Ag, Pb, Hg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① Electrochemical cell
ΔG° and Keq for Galvanic cell
① ΔG° = − n F E°cell
n = no. of e⁻ involve
F = 96500 C
② ΔG° = − RT ln Keq
R = 2 Cal
= 25/3 J
E°cell = 1.1 V
ΔG° = − 2
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① Electrochemical cell

Conc^n cell ÷ Same material is present with diff conc^n or pressure

$E^\circ_{cell} = 0$

$Zn | Zn^{2+}_{(aq)}\ (C_1\ M) \,||\, Zn^{2+}_{(aq)}\ (C_2\ M) | Zn_{(s)}$

$E_{cell} = \frac{0.06}{n} \log\left(\frac{C_2}{C_1}\right)$

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② Electrochemical series

Q. Metal $E^{\circ}_{R}(M^{n+}|M)$

Li -3.05 V

Ba -2.9 V

Na -2.71 V

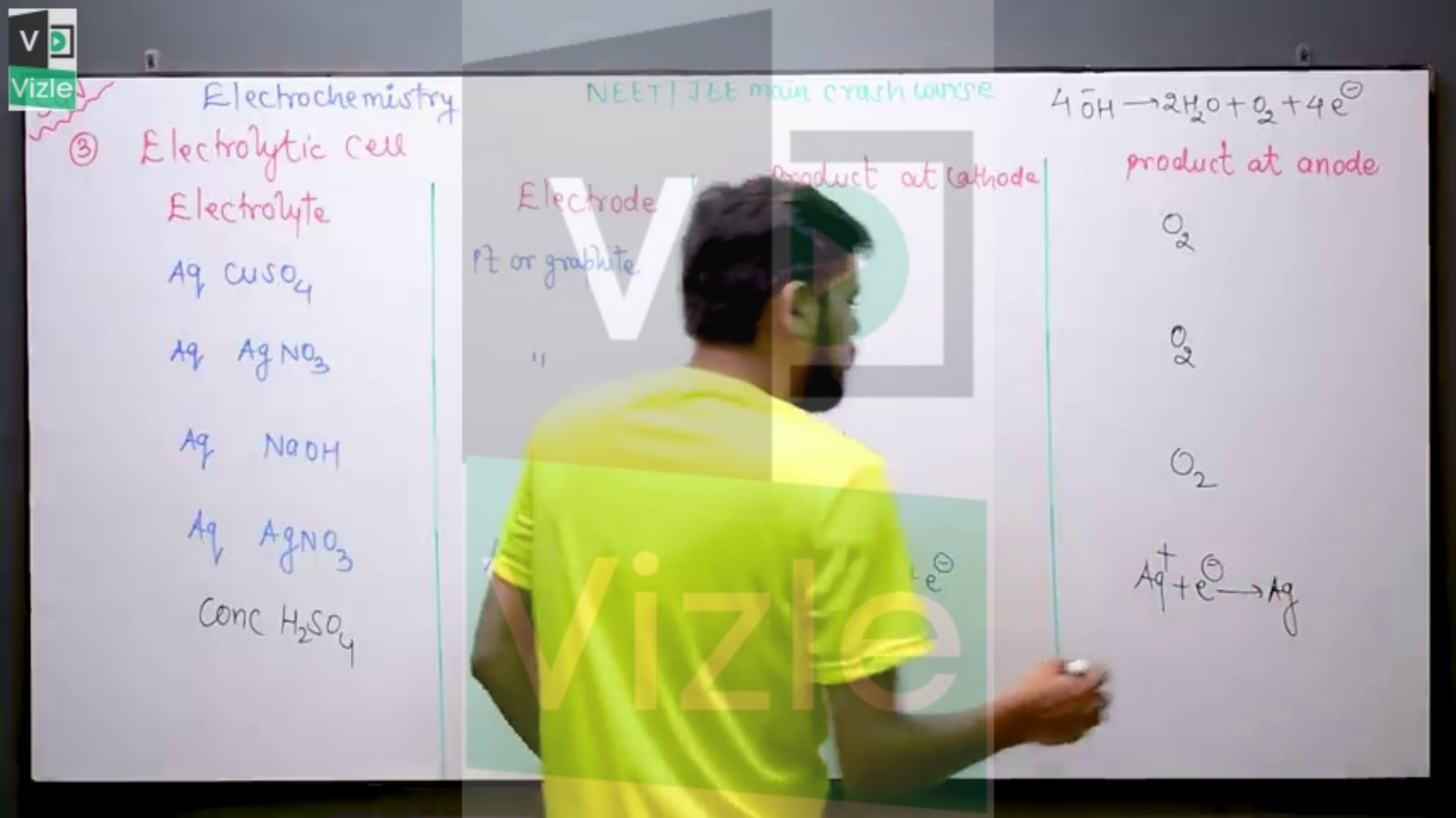
Mg -2.37 V

Compare reducing power

Li >

Q. Compare reactivity

Ba, Zn, K, Cu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$4\bar{O}H \rightarrow 2H_2O + O_2 + 4e^{\ominus}$
③ Electrolytic cell
Electrolyte
Electrode
product at cathode
product at anode
Aq $CuSO_4$
Pt or graphite
O_2
Aq $AgNO_3$
"
O_2
Aq NaOH
O_2
Aq $AgNO_3$
$Ag^{+} + e^{\ominus} \rightarrow Ag$
Conc H_2SO_4
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④ Resistance, conductance, resistivity
Conductivity of a cell.

① Resistance (R)

$R = \frac{\rho l}{A}$ Ω (ohm)

ρ = Resistivity or sp. resistance

l = sep. b/w electrodes (cm)

A = Area of crossection (cm^2)

ity

$\rho = \frac{RA}{l}$ ohm