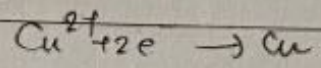
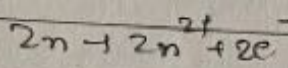
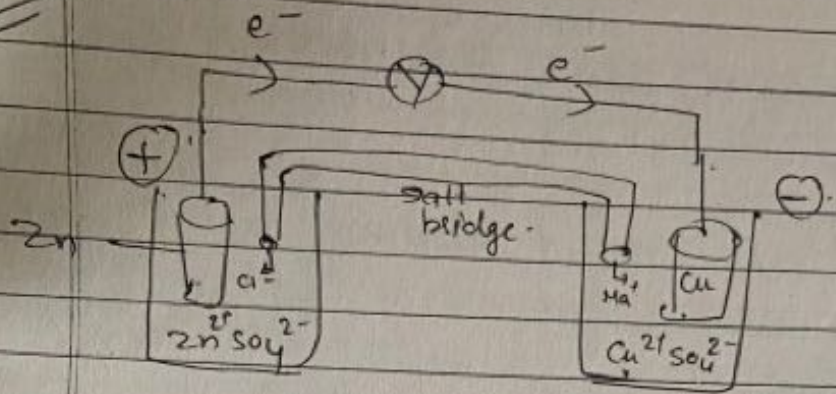


① potentiometry → measure potential b/w electrodes

Electrochemistry

Half cell

ion selective electrode
pCO₂ electrode



↓
Zn will be lost from electrode

↓
coating of Cu on electrode

① Ion selective electrode — glass → pH, Na and pCO₂
polymer

↓
measure memb. potential caused by permeability of certain types of memb to selected anion and cation

↓
pH, electrolyte - H⁺, Cl⁻, Na⁺, Ca²⁺, Li⁺, CO₂ (total CO₂)

⇒ Glass electrode:-

• glass electrode memb → made up of glass with different impurities

↓
by varying composition, electrode for dif. ions.

↓
But only H⁺ and Na⁺ are sufficiently selectively allow practical applicatⁿ

* Selectivity:

for H^+ selective glass, the selectivity order is
 $H^+ \gg Na^+ > K^+$

↓
 memb. has sufficient selectivity for H^+ over
 Na^+ to allow measurement of 10^{-7} to 10^{-8} mol/L.
 in presence of $Na^+ > 0.1$ mol/L. (pH = 7 to 8)

⇒ Polymer memb electrode:

Various compound dissolved in plastic core

↓
 memb. mounted at end of electrode body

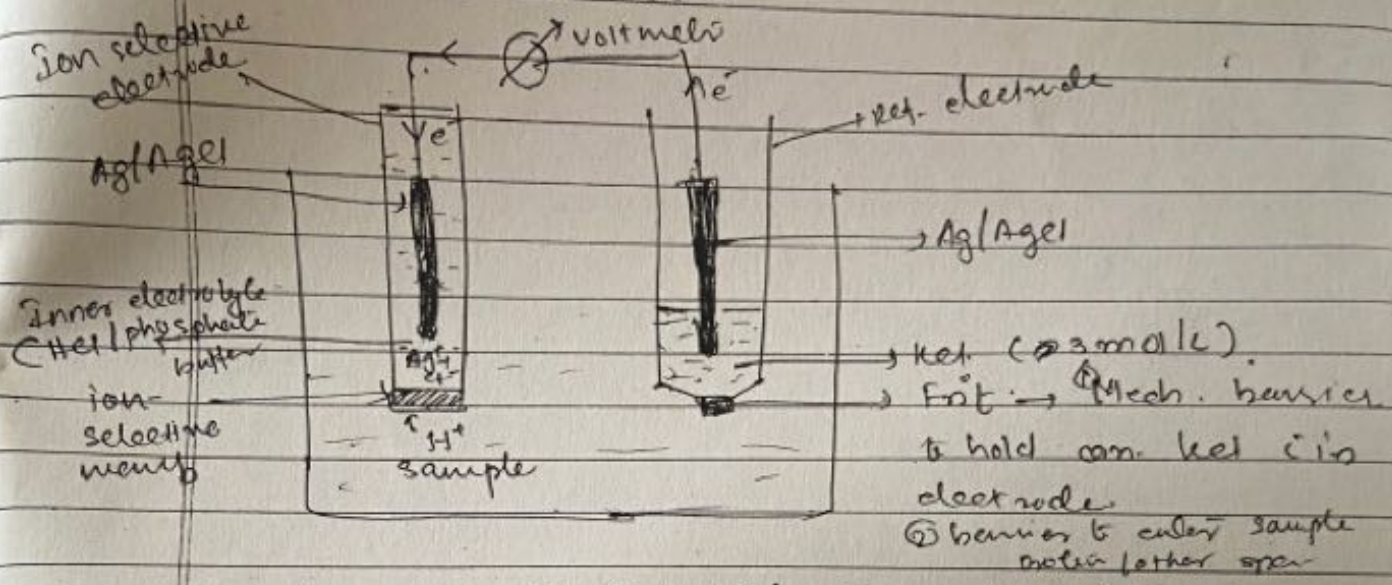
Valinogenin → neutral antibiotic

↓
 Incorporated into PVC memb

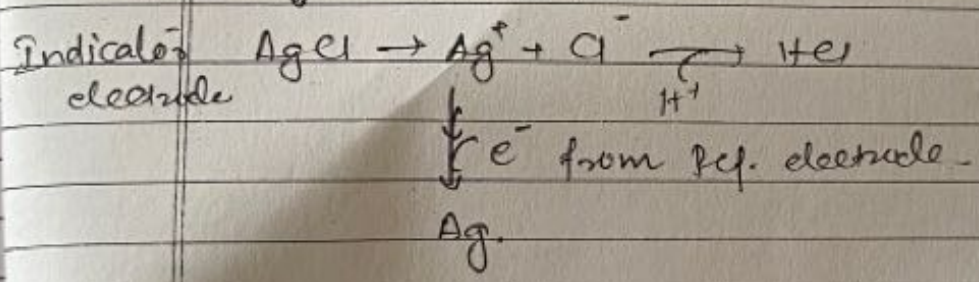
↓
 high selectivity for K^+ over Na^+
 is used exclusively today for K^+ measurement

↓
 wider linear range over 3 orders magnitude
 ex → 5 mmol/L K^+ → linearly range will be
 0.5 to 50 mmol/L.

Ion selective electrode



when sample is acidic than indicator electrode



Ref. electrode $Ag \rightarrow Ag^+ + e^-$ → will travel to indicator electrode

↓
current is generated

↓
Resistance applied to block the current (cell current = zero) is measured

↓
d/c concentration of ions in sample