

Electrolytes and Electrolysis

26. (b) Because it does not have ions.

27. (b) $\text{NaCl} \rightleftharpoons \text{Na}^+ + \text{Cl}^-$.

28. (a) Cathode: $2\text{H}_2\text{O} + 2e^- \rightarrow \text{H}_2 + 2\text{OH}^-$

Anode: $\text{H}_2\text{O} \rightarrow 2\text{H}^+ + \frac{1}{2}\text{O}_2 + 2e^-$.

29. (c) Electrolysis use for electroplating and electrorefining.

30. **Answer:** (b) This mixture has a lower melting point than NaCl

Explanation:

Pure NaCl melts at a very high temperature (about 801°C). To make the process of electrolysis more economical, CaCl_2 is mixed with NaCl, which lowers the melting point of the mixture. This allows sodium metal to be produced at a lower temperature without decomposing the electrolyte.

31. **Answer:** (d) Discharged

Explanation:

During electrolysis, cations move toward the cathode and gain electrons (reduction), while anions move toward the anode and lose electrons (oxidation). Thus, ions are **discharged** at their respective electrodes to form neutral atoms or molecules.



32. (d) The degree of ionization depend upon the nature of the solute the size of the solute molecules and the concentration of the solution.
33. (c) $C_{12}H_{22}O_{11}$ is an non-electrolyte.
34. (b) On electrolysis molten ionic hydride liberate H_2 at the anode.
35. (b) During electrolysis cation discharged at cathode and anion discharged at anode.
36. (a) Calcium is produces when molten anhydrous calcium chloride is electrolysed.
37. (d) All metals conducts heat and electricity.
38. (c) $2Al + dil. H_2SO_4 \rightarrow Al_2SO_4 + H_2 \uparrow$.
39. (d) Generally fussed potassium chloride flow the electric conductivity.
41. (a) The substances whose aqueous solutions allow the passage of electric current and are chemically decomposed, are termed electrolytes. Electrolytic substances are classified as strong or weak according to how readily they dissociate into conducting ions. Acetic acid is a weak electrolyte. Glucose, ethanol and urea are non-electrolytes.

