

Solutions

2.1 A Predict products using the specified electrolyte and electrode material. In an aqueous solution, hydrogen or oxygen may form because water-related species compete. Molten salts contain only the ions of the salt.

2.2 $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$; electron amount = $2 \times 0.20 = 0.40$ mol.

2.3 False. Electrode signs depend on the cell type. In an electrolytic cell the cathode is negative; reduction remains the defining process at a cathode in every cell.

2.4 oxidation. oxidation means Loss of electrons.

3.1 0.30 molelectrons; $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$. Reduction is electron gain. The electrolytic cathode is negative, but electrode signs depend on cell type; the process defines the name.