K Education Centre

AS Chemistry

Topic 3 – Redox Reactions
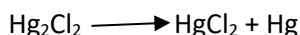
Assignment Questions

Redox Reactions

Q1: Calculate the oxidation number in following :

a) Sulfur in SO_4^{2-}

b) Phosphorus in P_4O_{10}

c) Cl in : i) Cl_2O_6 ii) ClO^{4-}

Q2: Calomel is mercury (I) chloride. It decomposes after exposed to UV light.

$$Hg_2Cl_2 \longrightarrow HgCl_2 + Hg$$

a) Calculate the oxidation number of mercury in each of two products.

b) Classify the reaction as redox or disproportionation , and explain your answer.

Q3: In terms of electrons explain what oxidising agent is.

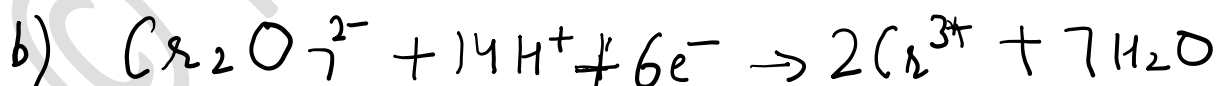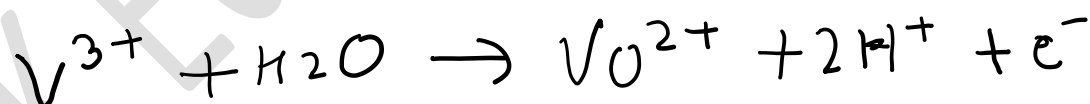Q4: Write the formula for each of the following compounds.

a) Copper (II) Chloride

b) Chromium (VI) oxide.

Q5: Use pairs of each half equations to write down balanced full ionic equations.

a)
$$NO_3^- + 2H^+ + e^- \longrightarrow NO_2 + H_2O$$

and

$$V^{3+} + H_2O \longrightarrow VO^{2+} + 2H^+ + e^-$$

b)
$$Cr_2O_7^{2-} + 14H^+ + 6e^- \longrightarrow 2Cr^{3+} + 7H_2O$$

and

$$H_2O_2 \longrightarrow O_2 + 2H^+ + 2e^-$$

Q6: A precipitate of silver chloride , AgCl , when silver nitrate solution, $AgNO_3$ is added to sodium chloride solution. Write the ionic equations for the reaction include state symbols.