CHEMISTRY

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Board – CBSE	Class – 11th	Topic – Redox Reactions

1. Balance the following equations by oxidation number method:
   (a) $CuO + NH_3 \rightarrow Cu + N_2 + H_2O$
   (b) $KMnO_4 + H_2O \rightarrow MnO_2 + KMnO_4 + KOH$
2. Write the following redox reactions in the oxidation and reduction half reaction reactions in the oxidation and reduction half reactions.
   (a) $2K(S) + Cl_2\ (g) \rightarrow 2KCl\ (S)$
   (b) $2Al\ (S) + 3Cu^{2+}\ (aq) \rightarrow 2Al^{3+}\ (aq) + 3Cu(S)$
3. Set up an electrochemical cell for the redox reaction $Ni^{2+}\ (aq) + Fe(S) \rightarrow Ni(S) + Fe^{2+}\ (aq)$
4. Can we store copper sulphate in an iron vessel?
5. Write correctly the balanced half – reaction and the overall equations for the following skeletal equations.
   (a) $NO_3^- + Bi(S) \rightarrow Bi^{3+} + NO_2$ (in acid solution)
   (b) $Fe(OH)_2(S) + H_2O_2 \rightarrow Fe(OH)_3(S) + H_2O$ (in basic medium)
6. Complete the following redox reactions and balance the following equations-
   (a) $Cr_2O_7^{2-} + C_2O_4^{2-} \rightarrow Cr^{3+} + CO_2$ (in presence of acid)
   (b) $Sn^{2+} + Cr_2O_7^{2-} \rightarrow Sn^{4+} + Cr^{3+}$ (in presence of acid)
7. Which gas is produced when less reactive metals like Mg and Fe react with steam?
8. All decomposition reactions are not redox reactions. Give reason.
9. Identify the reaction: $2H_2O_2\ (aq) \rightarrow 2H_2O(e) + O_2\ (g)$
10. Name the different types of redox reaction.
11. Why F^- ions cannot be converted to F_2 by chemical means?
12. What is the oxidation number of Mn in $KMnO_4$?
13. In the reactions given below, identify the species undergoing oxidation and reduction.
    $H_2S\ (g) + Cl_2\ (g) \rightarrow 2HCl\ (g) + S\ (S)$
14. Why ClO_4^- does not show disproportionation reaction whereas ClO^-, ClO_2^-, ClO_3^- shows?
15. Explain why $3Fe_3O_4\ (S) + 8Al\ (S) \rightarrow 9Fe\ (S) + 4Al_2O_3$. Is an oxidation reaction?