

**CLASS – XI      SUBJECT – CHEMISTRY      ASSIGNMENT NO. 11      REDOX REACTION**

- Q1. Explain the terms: oxidation & reduction in terms of electrons. Give one e.g. in each case.
- Q2. Define the terms: - oxidizing agent & reducing agent according to electronic concept. Give one e.g. in each case.
- Q3. What are redox reactions? Give one e.g.
- Q4. Explain what happens when a zinc rod is dipped in  $\text{CuSO}_4$  solution.
- Q5. Write the following redox reactions using half equations:- (a)  $\text{Zn} + \text{PbCl}_2 \rightarrow \text{Pb} + \text{ZnCl}_2$   
 (b)  $2\text{Fe}^{+3} + 2\text{I}^- \rightarrow \text{I}_2 + 2\text{Fe}^{+2}$       (c)  $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$       (d)  $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$       (e)  $\text{Zn} + 2\text{H}^+ \rightarrow \text{Zn}^{+2} + \text{H}_2$
- Q6. Define oxidation number. Write general rules of assigning oxidation numbers to various atoms in ions & molecules.
- Q7. Explain the terms: - (1) oxidation (2) Reduction (3) Oxidising agent (4) Reducing agent in terms of oxidation number. Give two e.g. to illustrate your answer:-
- Q8. Discuss the following redox reactions:- (a) Combination reactions      (b) Decomposition reactions  
 (c) Metals & Non-Metals displacement reactions (d) Disproportionation reaction. Give one e.g. in each case.
- Q9. Draw a labelled diagram for the Daniel cell. Discuss its working.
- Q10. Discuss briefly the function of the salt bridge in an electrochemical cell.
- Q11. What is the oxidation No. of (i) C in  $\text{CH}_2\text{O}$  (ii) H in  $[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$  (iii) N in  $\text{HNO}_3$
- Q12. Identify the oxidizing agent, reducing agent, substances oxidized & reduced in the following reactions:-  
 (i)  $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + \text{Cl}_2 + 2\text{H}_2\text{O}$       (ii)  $2\text{MnO}_4^- + 10\text{Cl}^- + 16\text{H}^+ \rightarrow 7\text{Mn}^{+2} + 5\text{Cl}_2 + 8\text{H}_2\text{O}$
- Q13. Justify that the reaction:-  $2\text{Cu}_2\text{O} + \text{Cu}_2\text{S} \rightarrow 6\text{Cu} + \text{SO}_2$  is a redox reaction. Identify the species oxidized, reduced, which acts as oxidant & which acts as reductant?
- Q14. Find out the oxidation number of underline atoms in the following species :-  
 $\text{Pb}\underline{\text{S}}\text{O}_4$ ,  $\underline{\text{B}}\text{r}\text{F}_3$ ,  $\underline{\text{C}}\text{r}\text{O}_4^{-2}$ ,  $\underline{\text{M}}\text{n}\text{O}_4^-$ ,  $\underline{\text{S}}\text{b}_2\text{O}_5$ ,  $(\text{NH}_4)_2\text{SO}_4$ ,  $\underline{\text{C}}_6\text{H}_{12}\text{O}_6$ ,  $\underline{\text{C}}\text{H}_4$ ,  $\underline{\text{C}}\text{r}_2\text{O}_7^{-2}$ ,  $\text{Na}_2\underline{\text{S}}_4\text{O}_6$ ,  $\text{H}_2\underline{\text{S}}_2\text{O}_8$
- Q15. Which of the following species, do not show disproportionation reaction and why?  
 $\text{ClO}^-$ ,  $\text{ClO}_2^-$ ,  $\text{ClO}_3^-$  &  $\text{ClO}_4^-$       Also write reaction for each species that disproportionate.