Chapter 6
REDOX REACTIONS

1. Define Oxidation.
2. Define Reduction.
3. Reducing agent donate the electrons. T/F
4. Oxidation is gain of electrons. T/F
5. $Cu + Zn^{2+} \rightarrow Zn + Cu^{2+}$. T/F
6. Arrange Cu, Ag, Zn in order of electron releasing tendency. (NEET)
7. In superoxides, oxidation no. of O is -
8. Oxidation no. of O in OF_2 and O_2F_2 is -
9. In peroxide, oxidation no. of O is -
10. Oxidation no. of H in LiH is -
11. In all its compounds, oxidation no. of F is -1. T/F
12. Oxidation state denotes the oxidation number of the compound. T/F
13. Define oxidising agent.
14. Define reducing agent.
15. $P_4 + OH^- + H_2O \rightarrow$
16. $S_8 + OH^- \rightarrow$
17. $Cl_2 + OH^- \rightarrow$
18. $F_2 + OH^- \rightarrow$
19. Which of the following will not show disproportionation reaction. ClO^-, ClO_2^-, ClO_3^-, ClO_4^-
20. Write the net ionic equation for the reaction of potassium dichromate(VI), $K_2Cr_2O_7$ with sodium sulphite, Na_2SO_3, in an acid solution to give chromium(III) ion and the sulphate ion.
21. Permanganate(VII) ion, MnO_4^- in basic solution oxidises iodide ion, I^- to produce molecular iodine (I_2) and manganese (IV) oxide (MnO_2). Write a balanced ionic equation to represent this redox reaction.
22. Salt bridge contains -
23. What is the function of salt bridge ?
24. What is Standard Electrode Potential ?
25. A negative E° means that the redox couple is a weaker reducing agent than the H^+/H_2 couple. T/F

ANSWERS

1. Loss of electron(s) by any species
2. Gain of electron(s) by any species.
3. F
4. F
5. F
6. Zn > Cu > Ag
7. -½
8. +2 in OF2 and +1 in O2F2
9. -1
10. -1
11. T
12. F, oxidation number denotes the oxidation state of the compound
13. A reagent which can increase the oxidation number of an element in a given substance
14. A reagent which lowers the oxidation number of an element in a given substance
15. $PH_3 + H_2PO_2^-$
16. $S^{2-} + S_2O_3^{2-}$
17. $ClO^- + Cl^-$
18. $F^- + OF_2 + H_2O$
19. ClO_4^-
20. $Cr_2O_7^{2-}(aq) + 3SO_3^{2-}(aq) + 8H^+(aq) \rightarrow 2Cr^{3+}(aq) + 3SO_4^{2-}(aq) + 4H_2O(l)$
21. $6I^-(aq) + 2MnO_4^-(aq) + 4H_2O(l) \rightarrow 3I_2(s) + 2MnO_2(s) + 8\,OH^-(aq)$
22. U-tube containing a solution of KCl or NH_4NO_3 usually solidified by boiling with agar agar and later cooling to a jelly like substance
23. To make the both half cells electrically neutral (as e- will flow from one beaker to another, it will cause development of electric potential opposite of the current flow direction. To break this potential, salt bridge is used)
24. If the concentration of each species taking part in the electrode reaction is unity (if any gas appears in the electrode reaction, it is confined to 1 atmospheric pressure) and further the reaction is carried out at 298K, then the potential of each electrode is said to be the Standard Electrode Potential
25. F