IMPORTANT REACTIONS:

Give the products and balance the following reactions:

1. **N** $H_4NO_3 \xrightarrow{\Delta}$

2. $NH_4Cl + NaNO_2 \longrightarrow$

3. $(NH_4)2Cr_2O_7 \xrightarrow{\Delta}$

4. $Ba(N_3)_2 \xrightarrow{\Delta}$

5. $NaN_3 \xrightarrow{\Delta}$

6. $Li + N_2 \longrightarrow$

7. $Mg + N_2 \longrightarrow$

8. $N_2 + H_2 \xrightarrow{Fe/773K}$

9. $N_2 + O_2 \xrightarrow{200K}$

10. $NH_2CONH_2 + H_2O \xrightarrow{\Delta}$

11. $NH_4Cl + Ca(OH)_2 \longrightarrow$

12. $(NH_4)2SO_4 + NaOH \longrightarrow$

13. $NH_3 + H_2O \longrightarrow$

14. $FeCl_3 + NH_4OH \longrightarrow$

15. $ZnSO_4 + NH_4OH \longrightarrow$

16. $Cu_2 + NH_3 \longrightarrow$

17. $AgCl + NH_3 \longrightarrow$

18. $NaNO_3 + H_2SO_4 \longrightarrow$

19. $NH_3 + O_2 \xrightarrow[9\ bar]{Pt/Rh/500} K$

20. $NO + O_2 \longrightarrow$

21. $NO_2 + H_2O \longrightarrow$

22. $HNO_3 + H_2O \longrightarrow$

23. $Cu + HNO_3$ (Dilute) $\longrightarrow$

24. $Cu + HNO_3$ (Conc) $\longrightarrow$

25. $Zn + HNO_3$ (Dil) $\longrightarrow$

26. $Zn + HNO_3$ (conc) $\longrightarrow$

27. $I_2 + HNO_3$ (conc) $\longrightarrow$

28. $C + HNO_3$ (conc) $\longrightarrow$

29. $S_8 + HNO_3$ (conc) $\longrightarrow$

30. $P_4 + HNO_3$ (conc) $\longrightarrow$

31. $P_4 + NaOH + H_2O \longrightarrow$

32. $P_4 + O_2$ (Excess) $\longrightarrow$

33. $Ca_3P_2 + H_2O \longrightarrow$

34. $Ca_3P_2 + HCl \longrightarrow$

35. $PH_3 + HI \longrightarrow$

36. $PH_3 + HBr \longrightarrow$

37. $PH_4I + KOH \longrightarrow$

38. $P_4 + Cl_2 \longrightarrow$

39. $P_4 + Cl_2$ (excess) $\longrightarrow$

40. $P_4 + SOCl_2 \longrightarrow$

41. $P_4 + SO_2Cl_2 \longrightarrow$

42. $PCl_3 + H_2O \longrightarrow$

43. $PCl_3 + CH_3COOH \longrightarrow$

44. $PCl_3 + C_2H_5OH \longrightarrow$

45. $PCl_5 + H_2O \longrightarrow$

46. $PCl_5 + CH_3COOH \longrightarrow$

47. $PCl_5 + C_2H_5OH \longrightarrow$

48. $PCl_5 + Ag \longrightarrow$

49. $PCl_5 + Sn \longrightarrow$

50. $PCl_5 \xrightarrow{Heat}$

51. $H_3PO_3 \xrightarrow{Heat}$

52. $AgNO_3 + H_2O + H_3PO_2 \longrightarrow$

53. $CuSO_4 + PH_3 \longrightarrow$

54. $HgCl_2 + PH_3 \longrightarrow$

55. $Se_2Cl_2 \xrightarrow{Heat}$

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56. $KClO_3 \xrightarrow{Heat, MnO_2}$

57. $Ag_2O \xrightarrow{Heat}$

58. $HgO \xrightarrow{Heat}$

59. $Pb_3O_4 \xrightarrow{Heat}$

60. $PbO_2 \xrightarrow{Heat}$

61. $H_2O_2 \xrightarrow{MnO_2}$

62. $Ca + O_2 \longrightarrow$

63. $Al + O_2 \longrightarrow$

64. $C + O_2 \longrightarrow$

65. $ZnS + O_2 \longrightarrow$

66. $CH_4 + O_2 \longrightarrow$

67. $+O_2 \longrightarrow$

68. $HCl + O_2 \longrightarrow$

69. $C_2H_4 + O_2 \longrightarrow$

70. $SO_2 + H_2O \longrightarrow$

71. $CaO + H_2O \longrightarrow$

72. $Al_2O_3 + HCl + H_2O \longrightarrow$

73. $Al_2O_3 + NaOH + H_2O \longrightarrow$

74. $O_2 \xrightarrow{\text{silent electric discharge}}$

75. $PbS + O_3 \longrightarrow$

76. $I^- + H_2O + O_3 \longrightarrow$

77. $I_2 + Na2S_2O_3 \longrightarrow$

78. $NO + O_3 \longrightarrow$

79. $SO_32^- + H^+ \longrightarrow$

80. $FeS_2 + O_2 \longrightarrow$

81. $SO_2 + H_2O \longrightarrow$

82. $SO_2 + NaOH \longrightarrow$

83. $SO_2 + Na_2SO_3 + H_2O \longrightarrow$

84. $SO_2 + Cl_2 \longrightarrow$

85. $SO_2 + O_2 \xrightarrow{V_2O_5}$

86. $SO_2 + Fe_3^{++} + H_2O \longrightarrow$

87. $SO_2 + MnO_4^- + H^+ \longrightarrow$

88. $SO_3 + H_2SO_4 \longrightarrow$

89. $H_2S_2O_7 + H_2O \longrightarrow$

90. $MX + H_2SO_4 \xrightarrow{(X=F,Cl,NO_3)}$

91. $C_{12}H_{22}O_{11} \xrightarrow{\text{conc } H_2SO_4}$

92. $Cu + \text{conc } H_2SO_4 \longrightarrow$

93. $S + \text{conc } H_2SO_4 \longrightarrow$

94. $C + \text{conc } H_2SO_4 \longrightarrow$

95. $F_2 + 2X^- \longrightarrow$

96. $Cl_2 + 2X^- \longrightarrow$

97. $Br_2 + 2X^- \longrightarrow$

98. $F_2 + H_2O \longrightarrow$

99. $X_2 + H_2O \longrightarrow$ (X=Cl,Br and I)

100. $I^- + H^+ + O_3 \longrightarrow$

101. $Mg + Br_2 \longrightarrow$

102. $MnO_2 + HCl \longrightarrow$

103. $KMnO_4 + HCl \longrightarrow$

104. $NaCl + MnO_2 + HCl \longrightarrow$

105. $Al + Cl_2 \longrightarrow$

106. $Fe + Cl_2 \longrightarrow$

107. $H_2 + Cl_2 \longrightarrow$

108. $H_2S + Cl_2 \longrightarrow$

109. $C_{10}H_{16} + Cl_2 \longrightarrow$

110. $NH_3 + Cl_2 \longrightarrow$ (excess)

111. $NH_3 + Cl_2 \longrightarrow$ (excess)

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112. $NaOH + Cl_2 \longrightarrow$
(cold and dilute)

113. $NaOH + Cl_2 \longrightarrow$
(Hot and conc)

114. $Ca(OH)_2 + Cl_2 \longrightarrow$

115. $CH_4 + Cl_2 \longrightarrow$

116. $C_2H_4 + Cl_2 \longrightarrow$

117. $FeSO_4 + H_2SO_4 + Cl_2 \longrightarrow$

118. $Na_2SO_3 + H_2O + Cl_2 \longrightarrow$

119. $SO_2 + H_2O + Cl_2 \longrightarrow$

120. $I_2 + H_2O + Cl_2 \longrightarrow$

121. $NaCl + H_2SO_4 \longrightarrow$

122. $NaHSO_4 + NaCl \longrightarrow$

123. $HCl + H_2O \longrightarrow$

124. $NH_3 + HCl \longrightarrow$

125. $Au + H^+ + NO_3^- + Cl^- \longrightarrow$

126. $Pt + H^+ + NO_3^- + Cl^- \longrightarrow$

127. $Na_2CO_3 + HCl \longrightarrow$

128. $NaHCO_3 + HCl \longrightarrow$

129. $Na_2SO_3 + HCl \longrightarrow$

130. $Fe + HCl \longrightarrow$

131. $Cl_2 + F_2 \xrightarrow{437K}$

132. $Cl_2 + F_2 \xrightarrow{573K}$
(excess)

133. $I_2 + Cl_2 \longrightarrow$

134. $I_2 + Cl_2 \longrightarrow$
(excess)

135. $Br_2 + F_2 \longrightarrow$

36. $Br_2 + F_2 \longrightarrow$
(excess)

137. $ClF + H_2O \longrightarrow$

138. $ClF_3 + H_2O \longrightarrow$

139. $BrF_5 + H_2O \longrightarrow$

140. $IF_7 + H_2O \longrightarrow$

141. $U + ClF_3 \longrightarrow$

142. $^{226}_{88}Ra \longrightarrow$ (α decay)

143. $Xe + F_2 \xrightarrow{673K}$

144. $Xe + F_2 \xrightarrow[873K]{1\ bar}$

145. $Xe + F_2 \xrightarrow[573K]{7\ bar}$

146. $XeF_4 + O_2F_2 \xrightarrow{60\text{-}70\ bar}$

147. $XeF_2 + PF_5 \longrightarrow$

148. $XeF_4 + SbF_5 \longrightarrow$

149. $XeF_6 + MF \longrightarrow$ (M=Na,K,Rb,Cs)

150. $XeF_2 + H_2O \longrightarrow$

151. $XeF_4 + H_2O \longrightarrow$

152. $XeF_6 + H_2O \longrightarrow$

153. $XeF_6 + H_2O$ (partial hydrolysis) $\longrightarrow$

154. $XeF_6 + 2H_2O$ (partial hydrolysis) $\longrightarrow$

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