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**Grade – X**

**1. CHEMICAL REACTIONS AND EQUATIONS**

**ANSWER THE FOLLOWING:**

**1. Write the balanced chemical equations for the following reactions and identify the type of reactions**

**i) Iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.**

**ii) Ethanol is burnt in air to form carbon-di-oxide, water and releases heat.**

**2. Identify the reducing agent in the following reactions**

**a) 4 NH3 + 5O2 → 4NO + 6H2O**

**b) H2O + F2→ HF + HOF**

**c) H2 + O2→ H2O**

**3. Identify the oxidizing agent in the following reactions**

**a) Pb3O4 + 8HCl → 3PbCl2 + Cl2 + 4H2O**

**b) 2Mg + O2→ 2MgO**

**c) CuO + H2→Cu + H2O**

**4. A substance X, which is an oxide of a group 2 element, is used intensively in the cement industry. This element is present in bones also. On treatment with water it forms a solution which turns red litmus blue. Identify X and also write the chemical reactions involved.**

**5. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.**

**a) Write the chemical formulae of X and Y.**

**b) Write a balanced chemical equation, when X is dissolved in water.**

**6. On heating blue coloured powder of copper (II) nitrate in a boiling tube, copper oxide, oxygen gas and brown gas X is formed**

**a) Write a balanced chemical equation of the reaction**

**b) Identify the brown gas X**

**c) Identify the type of reaction**

**7. The following reactions are observed to occur;**

**a) CuSO4 + Fe → FeSO4 + Cu**

**b) FeSO4 + Zn→ ZnSO4 + Fe**

**c) 2AgNO3 + Cu → Cu(NO3)2 + Ag**

**Arrange Cu, Fe, Ag, Zn in order of their reactivity.**

