

# Sh. S.N. Sidheshwar Sr. Sec. Public School

Session: 2026-27

Subject: Science

Class: X

Assignment: Chapter -1

Q.1 What happens when:

a. Lead nitrate is thermally decomposed

b. Natural gas burns in air

Write balanced chemical equations in each case.

Q.2. What is observed when hydrated ferrous sulphate crystals are heated in a dry boiling tube? Write the balanced chemical equation.

Q.3. Translate and balance the following:

a. Nitric acid reacts with calcium hydroxide to form calcium nitrate and water

b. Sodium chloride reacts with silver nitrate to form silver chloride and sodium nitrate.

Q.4 Name a compound which is used in black and white photography.

Q.5 Write the balanced chemical equation for the reaction between aqueous solutions of sodium sulphate and barium chloride. State two types of reactions in which it is classified.

Q.6 A copper wire on burning gets coated with a black substance.

a. Write the chemical equation for the reaction

b. How can this chemical change be reversed?

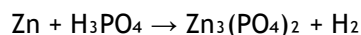
Q.7 (a) (i) Define the term decomposition reaction. Write one chemical equation each for decomposition reaction where energy is supplied in the form of heat, light or electricity.

(ii) Decomposition of vegetable matter into compost is considered an exothermic reaction. Why?

(b) Why are decomposition reactions called the opposite of combination reactions?

Q.8 How is a double displacement reaction different from a displacement reaction? Explain giving example in the form of balanced chemical equations.

**Q.9** (a) Why do we balance a chemical equation? Name and state the law that suggests the balancing of a chemical equation? Balance the following chemical equation:



(b) Define a precipitation reaction. Give its example and also express the reaction that occurs in the form of a balanced chemical equation.

**Q.10** Write balanced equations for the following:

- a. Steam passed over red-hot iron
- b. Glucose reacts with oxygen in cells

**Q.11** Explain why respiration is considered as an exothermic reaction. Give the chemical equation for this reaction.

**Q.12** Why the packets of chips are filled with nitrogen gas?

**Q.13** What is corrosion? How can we prevent the metals from getting corroded?

**Q.14** A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.

- i. Identify 'M' and 'N'.
- ii. Represent the above reaction in the form of a balanced chemical equation.
- iii. Does 'M' undergo oxidation or reduction in this reaction? Justify.

**Q.15** In the electrolysis of water

- i. Name the gases liberated at anode and cathode.
- ii. Why is it that the volume of gas collected on one electrode is two times that on the other electrode?
- iii. What would happen if dilute  $\text{H}_2\text{SO}_4$  is not added to water?

**Q.16** Lead nitrate solution is added to a test tube containing potassium iodide solution.

- i. Write the name and colour of the compound.
- ii. Write the balanced chemical equation for the
- iii. Name the type of reaction.

**Q.17** In the chemical reaction:  $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$

- i. Identify the oxidant and reductant.
- ii. Give reasons:
  - a) Antioxidants are added to foods containing fats and oils.
  - b) White silver chloride turns grey in sunlight

**Q.18** A compound 'A' is used in the manufacture of cement. When dissolved in water, it evolves a large amount of heat and forms compound 'B'.

- i. Identify A and B.
- ii. Write chemical equation for the reaction of A with water.
- iii. List two types of reaction in which this reaction may be classified.

**Q.19** Define redox reactions.

**Q.20** Why magnesium ribbon should be cleaned before burning in air?