

## Section A: Basic Concepts and Equation Representation (1–20)

1. A chemical reaction involves:
- Only change in physical state
  - Only change in temperature
  - Formation of new substances
  - No change at all

**Answer:** c) Formation of new substances

2. What is the chemical formula of magnesium oxide?
- MgO
  - Mg<sub>2</sub>O
  - Mg(OH)<sub>2</sub>
  - MgO<sub>2</sub>

**Answer:** a) MgO

3. A skeletal chemical equation is:
- A balanced chemical equation
  - A symbolic chemical formula
  - An unbalanced chemical equation
  - A chemical equation with state symbols

**Answer:** c) An unbalanced chemical equation

4. Which of the following is not a sign of a chemical reaction?
- Change in state
  - Change in colour
  - Evolution of gas
  - Melting of ice

**Answer:** d) Melting of ice

5. A chemical equation is balanced to satisfy:
- Avogadro's Law
  - Law of Conservation of Mass
  - Newton's Law
  - Boyle's Law

**Answer:** b) Law of Conservation of Mass

6. Which one of the following is a correctly balanced chemical equation?
- $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$
  - $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
  - $\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
  - $2\text{H}_2 + 2\text{O}_2 \rightarrow 2\text{H}_2\text{O}$

**Answer:** b)  $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

7. In a chemical equation, the substances on the left-hand side are called:
- Catalysts
  - Reactants
  - Products
  - Equilibrium substances

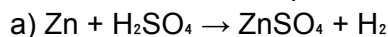
**Answer:** b) Reactants

8. Which of the following represents a physical state in a chemical reaction?
- (aq)
  - (ph)
  - (li)

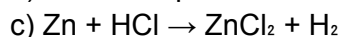
d) (el)

**Answer:** a) (aq)

9. Which one is an example of a word equation?



b) Zinc + Sulphuric acid  $\rightarrow$  Zinc sulphate + Hydrogen



d) None of these

**Answer:** b) Zinc + Sulphuric acid  $\rightarrow$  Zinc sulphate + Hydrogen

10. In the equation  $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$ , water is in the form of:

a) Ice

b) Water

c) Steam

d) Solution

**Answer:** c) Steam

11. The symbol (g) represents:

a) Glucose

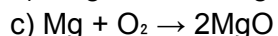
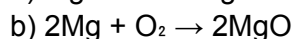
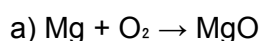
b) Gas

c) Glycerine

d) Gram

**Answer:** b) Gas

12. Which is the correct chemical equation for the burning of magnesium?



**Answer:** b)  $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$

13. A chemical reaction is represented by a:

a) Sentence

b) Chemical equation

c) Diagram

d) Bar graph

**Answer:** b) Chemical equation

14. The arrow in a chemical reaction points towards:

a) Reactants

b) Products

c) Catalyst

d) Equilibrium

**Answer:** b) Products

15. In the reaction  $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$ , which element is displaced?

a) Sulphur

b) Oxygen

c) Hydrogen

d) Zinc

**Answer:** c) Hydrogen

16. Which gas is evolved when zinc reacts with dilute sulphuric acid?

a) Oxygen

b) Hydrogen

c) Nitrogen

d) Carbon dioxide

**Answer:** b) Hydrogen

17. The chemical reaction in which heat is released is called:

a) Endothermic

b) Exothermic

c) Thermal

d) Electrolytic

**Answer:** b) Exothermic

18. Which method is used to balance chemical equations?

a) Trial-and-error

b) Algebraic method

c) Oxidation method

d) Hit-and-trial method

**Answer:** d) Hit-and-trial method

19. In a chemical reaction, the number of atoms must be:

a) Equal on both sides

b) More on product side

c) More on reactant side

d) None of these

**Answer:** a) Equal on both sides

20. Which of the following is a balanced equation?

a)  $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$

b)  $\text{H}_2 + \text{Cl}_2 \rightarrow \text{HCl}$

c)  $\text{H}_2 + 2\text{Cl}_2 \rightarrow 2\text{HCl}$

d)  $2\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$

**Answer:** a)  $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$

## Section B: Types of Chemical Reactions (21–60)

21. Which of the following is a **combination reaction**?

a)  $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$

b)  $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

c)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

d)  $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$

**Answer:** b)  $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

22. In a **decomposition reaction**, a compound:

a) Combines with another

b) Breaks into simpler substances

c) Forms a precipitate

d) Displaces another metal

**Answer:** b) Breaks into simpler substances

23. Which is a **thermal decomposition** reaction?

a)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

b)  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

c)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

d)  $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$

**Answer:** a)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

24. A **displacement reaction** occurs when:

- a) Two compounds react to form a product
- b) One element replaces another
- c) A compound breaks down
- d) A solid is formed in solution

**Answer:** b) One element replaces another

25. Which of these is a **double displacement** reaction?

- a)  $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$
- b)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
- c)  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
- d)  $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

**Answer:** c)  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$

26. A reaction that produces a precipitate is called:

- a) Neutralisation
- b) Precipitation
- c) Combination
- d) Displacement

**Answer:** b) Precipitation

27. In the reaction  $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$ , which element is **displaced**?

- a) Iron
- b) Copper
- c) Sulphur
- d) Oxygen

**Answer:** b) Copper

28. The **colour change** from blue to pale green in the  $\text{Fe} + \text{CuSO}_4$  reaction indicates:

- a) Precipitate formation
- b) Combination reaction
- c) Displacement reaction
- d) Decomposition

**Answer:** c) Displacement reaction

29. The **precipitate** formed in  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2$  is:

- a) NaCl
- b)  $\text{BaSO}_4$
- c)  $\text{BaCl}_2$
- d)  $\text{H}_2\text{O}$

**Answer:** b)  $\text{BaSO}_4$

30. Decomposition of silver chloride in sunlight is a:

- a) Combination reaction
- b) Photochemical decomposition
- c) Displacement reaction
- d) Precipitation

**Answer:** b) Photochemical decomposition

31. A reaction in which **heat is released** is called:

- a) Endothermic
- b) Exothermic
- c) Neutral
- d) Physical

**Answer:** b) Exothermic

32. Respiration is an example of:
- a) Endothermic reaction
  - b) Double displacement reaction
  - c) Exothermic reaction
  - d) Photochemical reaction

**Answer:** c) Exothermic reaction

33. Electrolysis of water is an example of:
- a) Thermal decomposition
  - b) Redox reaction
  - c) Electrolytic decomposition
  - d) Precipitation

**Answer:** c) Electrolytic decomposition

34. Which of the following is an **oxidation reaction**?

- a)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- b)  $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$
- c)  $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$
- d)  $\text{Pb} + \text{CuCl}_2 \rightarrow \text{PbCl}_2 + \text{Cu}$

**Answer:** c)  $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$

35. In redox reactions:

- a) Only oxidation occurs
- b) Only reduction occurs
- c) Oxidation and reduction occur simultaneously
- d) No electrons are transferred

**Answer:** c) Oxidation and reduction occur simultaneously

36. Which of the following is **reduced** in the reaction:  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$ ?

- a) CuO
- b)  $\text{H}_2$
- c) Cu
- d)  $\text{H}_2\text{O}$

**Answer:** a) CuO

37. Which is **oxidised** in the reaction:  $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$ ?

- a) Zn
- b) O
- c) ZnO
- d) C

**Answer:** d) C

38. Oxidation is defined as:

- a) Loss of oxygen
- b) Gain of hydrogen
- c) Gain of oxygen
- d) None of these

**Answer:** c) Gain of oxygen

39. In a redox reaction, the substance that gains oxygen is:

- a) Oxidised
- b) Reduced
- c) Neutral
- d) Ionised

**Answer:** a) Oxidised

40. Reduction means:

- a) Gain of oxygen
- b) Loss of hydrogen
- c) Loss of oxygen
- d) None

**Answer:** c) Loss of oxygen

41. Which is a **redox reaction**?

- a)  $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$
- b)  $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$
- c)  $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
- d)  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

**Answer:** c)  $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$

42. The **reaction of lime with water** is:

- a) Endothermic
- b) Exothermic
- c) Neutral
- d) Displacement

**Answer:** b) Exothermic

43. In the reaction  $\text{Ca}(\text{OH})_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$ , the white substance formed is:

- a) Slaked lime
- b) Calcium carbonate
- c) Lime water
- d) Calcium oxide

**Answer:** b) Calcium carbonate

44. Which gas is evolved in electrolysis of water?

- a) Hydrogen and chlorine
- b) Hydrogen and oxygen
- c) Oxygen and nitrogen
- d) Nitrogen and hydrogen

**Answer:** b) Hydrogen and oxygen

45. Which of the following is a **combination reaction**?

- a)  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$
- b)  $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
- c)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
- d)  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

**Answer:** a)  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$

46. Identify the **displacement reaction**:

- a)  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
- b)  $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$
- c)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
- d)  $\text{CaO} + \text{CO}_2 \rightarrow \text{CaCO}_3$

**Answer:** c)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

47. The colour of copper sulphate fades when iron is added because:

- a) Iron is heavier
- b) Copper gets oxidised
- c) Copper is displaced
- d) Copper reacts with oxygen

**Answer:** c) Copper is displaced

48. When a white precipitate is formed during a reaction, the reaction is:

- a) Combination
- b) Decomposition
- c) Precipitation
- d) Redox

**Answer:** c) Precipitation

49. Which of the following reactions is **endothermic**?

- a) Decomposition of  $\text{CaCO}_3$
- b) Reaction of quicklime with water
- c) Combustion of methane
- d) Neutralisation

**Answer:** a) Decomposition of  $\text{CaCO}_3$

50. In which reaction is **silver** obtained from its compound?

- a)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
- b)  $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$
- c)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- d)  $\text{Na} + \text{Cl}_2 \rightarrow \text{NaCl}$

**Answer:** b)  $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$

### Section C: Applications, Observations, and Conceptual MCQs (51–90)

51. In black and white photography, which decomposition reaction is used?

- a) Decomposition of  $\text{CaCO}_3$
- b) Electrolysis of water
- c) Decomposition of  $\text{AgBr}$
- d) Reaction of iron and copper sulphate

**Answer:** c) Decomposition of  $\text{AgBr}$

52. A substance becomes rancid due to:

- a) Fermentation
- b) Evaporation
- c) Oxidation
- d) Dehydration

**Answer:** c) Oxidation

53. The gas used to flush chips packets is:

- a) Oxygen
- b) Hydrogen
- c) Nitrogen
- d) Carbon dioxide

**Answer:** c) Nitrogen

54. Which of the following prevents rancidity?

- a) Oxygen exposure
- b) Keeping food in sunlight
- c) Keeping food in airtight containers
- d) Heating oil repeatedly

**Answer:** c) Keeping food in airtight containers

55. Corrosion of iron is also known as:

- a) Tarnishing
- b) Burning
- c) Rusting

d) Smelting

**Answer:** c) Rusting

56. The black coating formed on silver is due to:

a) Sulphur

b) Oxygen

c) Water

d) Hydrogen

**Answer:** a) Sulphur

57. The green coating on copper is due to:

a) Formation of copper carbonate

b) Formation of copper oxide

c) Dust accumulation

d) Fungal growth

**Answer:** a) Formation of copper carbonate

58. Which of the following is a redox reaction?

a)  $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$

b)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

c)  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

d)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

**Answer:** b)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

59. In which reaction does hydrogen act as a reducing agent?

a)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$

b)  $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

c)  $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$

d)  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$

**Answer:** a)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$

60. Rancidity of food can be prevented by:

a) Adding more oil

b) Refrigeration

c) Boiling

d) Heating

**Answer:** b) Refrigeration

61.  $2\text{AgBr} \rightarrow 2\text{Ag} + \text{Br}_2$  is an example of:

a) Thermal decomposition

b) Electrolytic decomposition

c) Photolytic decomposition

d) Combination reaction

**Answer:** c) Photolytic decomposition

62. Heating of blue-green ferrous sulphate crystals gives off a gas with smell of:

a) Rotten eggs

b) Ammonia

c) Burning sulphur

d) Hydrogen sulphide

**Answer:** c) Burning sulphur

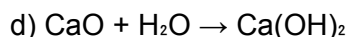
63. Which of the following is NOT an oxidation reaction?

a)  $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$

b)  $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$

c)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$





**Answer:** d)  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$

64. What causes copper powder to turn black on heating?

- a) It reacts with water
- b) It reacts with air to form copper oxide
- c) It melts
- d) It forms copper nitrate

**Answer:** b) It reacts with air to form copper oxide

65. Which statement is correct about decomposition reactions?

- a) Two reactants form one product
- b) Energy is always released
- c) A single reactant gives multiple products
- d) Gases are never formed

**Answer:** c) A single reactant gives multiple products

66. The activity series of metals is related to:

- a) Reactivity
- b) Colour
- c) Mass
- d) Size

**Answer:** a) Reactivity

67. What type of reaction is:  $\text{Pb} + \text{CuCl}_2 \rightarrow \text{PbCl}_2 + \text{Cu}$ ?

- a) Combination
- b) Displacement
- c) Double displacement
- d) Decomposition

**Answer:** b) Displacement

68. Which of the following is a **chemical** change?

- a) Evaporation of water
- b) Melting of ice
- c) Rusting of iron
- d) Breaking of glass

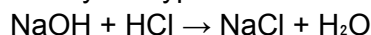
**Answer:** c) Rusting of iron

69. A reaction in which **two compounds exchange ions** is called:

- a) Displacement
- b) Redox
- c) Double displacement
- d) Decomposition

**Answer:** c) Double displacement

70. Identify the type of reaction:



- a) Combination
- b) Displacement
- c) Neutralisation
- d) Precipitation

**Answer:** c) Neutralisation

71. A balanced equation ensures:

- a) Energy is conserved
- b) Atoms are conserved

- c) Time is saved
  - d) Products are stable
- Answer:** b) Atoms are conserved

72. The **reactivity of metals** in displacement reactions follows:

- a) Random order
  - b) Decreasing reactivity
  - c) Activity series
  - d) Mass number
- Answer:** c) Activity series

73. The **number of atoms** of each element in a balanced equation:

- a) Can vary
  - b) Is less on the left
  - c) Is more on the right
  - d) Is the same on both sides
- Answer:** d) Is the same on both sides

74. A chemical reaction where **two or more reactants form one product** is:

- a) Displacement
  - b) Combination
  - c) Decomposition
  - d) Endothermic
- Answer:** b) Combination

75. Which product is formed when calcium hydroxide reacts with carbon dioxide?

- a) CaO
  - b) CaCl<sub>2</sub>
  - c) CaCO<sub>3</sub>
  - d) CaSO<sub>4</sub>
- Answer:** c) CaCO<sub>3</sub>

76. Example of a reaction that is both exothermic and combination:

- a)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
  - b)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
  - c)  $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
  - d)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
- Answer:** c)  $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

77. An example of **endothermic reaction**:

- a) Respiration
  - b) Combustion
  - c) Electrolysis of water
  - d) Neutralisation
- Answer:** c) Electrolysis of water

78. Decomposition of ferrous sulphate produces:

- a)  $\text{Fe}_2\text{O}_3 + \text{CO}_2$
  - b)  $\text{FeO} + \text{H}_2\text{O}$
  - c)  $\text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$
  - d)  $\text{FeSO}_4 + \text{O}_2$
- Answer:** c)  $\text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$

79. A **reaction accompanied by colour change** can be identified as:

- a) Physical change
- b) Chemical reaction

- c) No reaction
- d) Mechanical change
- Answer:** b) Chemical reaction

80. The **black coating** on silver is due to formation of:

- a) Silver oxide
- b) Silver sulphide
- c) Silver carbonate
- d) Silver chloride

**Answer:** b) Silver sulphide

81. The **green layer** on copper is:

- a) Copper nitrate
- b) Copper oxide
- c) Basic copper carbonate
- d) Copper sulphate

**Answer:** c) Basic copper carbonate

82. What type of chemical reaction is used in refining of silver from  $\text{AgNO}_3$ ?

- a) Displacement
- b) Combination
- c) Double displacement
- d) Decomposition

**Answer:** a) Displacement

83. What is the main cause of corrosion of metals?

- a) Heat
- b) Moisture and air
- c) Electricity
- d) Microbes

**Answer:** b) Moisture and air

84. Silver nitrate reacts with copper to form:

- a)  $\text{Cu}(\text{NO}_3)_2$  and Ag
- b)  $\text{AgNO}_3$  and CuO
- c) CuO and  $\text{AgNO}_3$
- d)  $\text{Ag}_2\text{O}$  and  $\text{Cu}(\text{NO}_3)_2$

**Answer:** a)  $\text{Cu}(\text{NO}_3)_2$  and Ag

85. Which of these is NOT a redox reaction?

- a)  $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$
- b)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- c)  $2\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
- d)  $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

**Answer:** c)  $2\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$

86. Burning of methane is an example of:

- a) Combination and exothermic
- b) Decomposition and endothermic
- c) Redox and endothermic
- d) Double displacement and exothermic

**Answer:** a) Combination and exothermic

87. In the electrolysis of water, the ratio of hydrogen to oxygen collected is:

- a) 1:1
- b) 2:1

c) 1:2

d) 3:1

**Answer:** b) 2:1

88. The equation  $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$  shows:

a) Double displacement

b) Combination

c) Decomposition

d) Displacement

**Answer:** d) Displacement

89. What is the product formed when silver chloride is exposed to sunlight?

a)  $\text{Ag}_2\text{O}$

b) Ag

c)  $\text{AgNO}_3$

d)  $\text{Ag}_2\text{SO}_4$

**Answer:** b) Ag

90. Which of the following is NOT a sign of chemical reaction?

a) Heat evolution

b) Gas formation

c) Change in state

d) Change in temperature

**Answer:** c) Change in state