Here are **30 questions for each category** based on the chapter **"Language of Chemistry"** from your textbook.

SECTION A

(1) Multiple Choice Questions (MCQs)

1. Which of the following is a characteristic of a chemical reaction?
   a) Change in state
   b) Change in color
   c) Evolution of gas
   d) All of the above

2. What type of reaction occurs when two or more reactants combine to form a single product?
   a) Decomposition
   b) Combination
   c) Displacement
   d) Neutralization

3. What is the correct chemical equation for the reaction of hydrogen and oxygen to form water?
   a) $H_2 + O_2 \rightarrow H_2O$
   b) $2H_2 + O_2 \rightarrow 2H_2O$
   c) $H_2 + 2O_2 \rightarrow H_2O_2$
   d) $2H_2 + 2O_2 \rightarrow H_2O$

4. What gas is evolved when sodium carbonate reacts with hydrochloric acid?
   a) Oxygen
   b) Carbon dioxide
   c) Hydrogen
   d) Nitrogen

5. Which of the following statements is true about a displacement reaction?
   a) One element replaces another in a compound
   b) A single substance breaks down into simpler substances
   c) An acid and a base react to form salt and water
   d) Two solutions react to form a precipitate

6. In a chemical reaction, the substances that react together are called:
   a) Products
   b) Reactants
   c) Catalysts
   d) Compounds

7. Which of the following is an example of an exothermic reaction?
   a) Melting of ice
   b) Neutralization of acid and base
   c) Photosynthesis
   d) Electrolysis of water

8. The chemical equation:
   $Fe + S \rightarrow FeS$
   Represents which type of reaction?
   a) Decomposition
   b) Combination
   c) Double displacement
   d) Displacement

9. Which of the following does NOT indicate a chemical reaction?
   a) Change in color
   b) Change in shape
   c) Formation of precipitate
   d) Evolution of gas

10. The process of balancing a chemical equation ensures that:
    a) More reactants are used
    b) The reaction occurs faster
    c) Mass is conserved
    d) New atoms are created

(2) Fill in the Blanks

11. The substances formed as a result of a chemical reaction are called ___.
12. A ___ reaction occurs when an acid reacts with a base to form salt and water.
13. The equation $2Mg + O_2 \rightarrow 2MgO$ represents a ___ reaction.
14. The gas evolved when zinc reacts with hydrochloric acid is ___.
15. ___ reactions involve the breaking down of a single substance into simpler ones.
16. In a chemical reaction, the reactants are always written on the ___ side of the equation.

17. A reaction in which heat is absorbed is called an ___ reaction.
18. The process of a more reactive element replacing a less reactive element in a compound is called ___.
19. A yellow precipitate is formed when lead acetate reacts with ___.
20. The chemical symbol of iron is ___.

(3) True or False

21. A chemical equation represents only the reactants of a reaction.
22. Evolution of gas is a sign of a chemical reaction.
23. Neutralization reactions always release heat.
24. The arrow (→) in a chemical equation indicates the direction of the reaction.
25. A balanced chemical equation follows the Law of Conservation of Mass.
26. Formation of precipitate does not indicate a chemical reaction.
27. Chemical equations can be written using words or symbols.
28. All chemical reactions produce heat.
29. A catalyst is consumed in a reaction.
30. The decomposition of water produces hydrogen and oxygen.

SECTION B

(4) Odd One Out (Give Reason)

31. Combination, Displacement, Neutralization, Boiling
32. Evolution of gas, Change in shape, Formation of precipitate, Change in color
33. Hydrochloric acid, Sulfuric acid, Sodium hydroxide, Nitric acid
34. Magnesium, Zinc, Copper, Carbon
35. CO_2, H_2, O_2, NaCl
36. Rusting, Melting, Burning, Cooking
37. Iron, Sodium, Copper, Iodine
38. Chlorine, Oxygen, Iron, Nitrogen
39. H_2O, CO_2, NaCl, Fe
40. MgO, H_2O, FeS, CO_2

(5) Matching Questions

41. Combination reaction - a) Decomposition of calcium carbonate

42. Decomposition reaction - b) Reaction of sodium hydroxide with hydrochloric acid
43. Displacement reaction - c) Reaction between silver nitrate and sodium chloride
44. Double displacement reaction - d) Rusting of iron
45. Neutralization reaction - e) Burning of magnesium in oxygen
46. Reactant - f) Substances that undergo a reaction
47. Product - g) Substances formed in a reaction
48. Catalyst - h) Speeds up a chemical reaction
49. Precipitation - i) Formation of an insoluble solid
50. Balanced equation - j) Follows the Law of Conservation of Mass

(6) Name the Type of Reaction

51. Magnesium + Oxygen → Magnesium Oxide
52. Calcium Carbonate → Calcium Oxide + Carbon Dioxide
53. Copper Sulfate + Iron → Iron Sulfate + Copper
54. Hydrochloric Acid + Sodium Hydroxide → Salt + Water
55. Silver Nitrate + Sodium Chloride → Silver Chloride + Sodium Nitrate
56. Hydrogen Peroxide → Water + Oxygen
57. Zinc + Hydrochloric Acid → Zinc Chloride + Hydrogen
58. Sulfuric Acid + Barium Chloride → Barium Sulfate + Hydrochloric Acid
59. Methane + Oxygen → Carbon Dioxide + Water
60. Water + Carbon Dioxide → Glucose + Oxygen

SECTION C

(7) Short Answer Questions

61. What is a chemical reaction?
62. Define reactants and products with an example.
63. What is a balanced chemical equation?
64. How can we identify that a chemical reaction has taken place?
65. What is a precipitation reaction? Give an example.
66. Why is it necessary to balance a chemical equation?
67. What is an exothermic reaction? Give an example.
68. How does temperature affect the rate of a chemical reaction?
69. What are the types of chemical reactions?

70. Define the Law of Conservation of Mass.

(8) Diagram-Based Questions

71. Draw a labeled diagram of an experimental setup to show gas evolution.
72. Illustrate an example of a double displacement reaction.
73. Show a decomposition reaction with a balanced equation.
74. Draw an activity showing a change in color during a chemical reaction.
75. Diagrammatically represent a neutralization reaction.

(9) Reasoning-Based Questions

76. Why does an iron nail rust when exposed to air and moisture?
77. Why do chemical reactions occur faster at higher temperatures?
78. Why does milk turn sour when kept outside for long?
79. Why is a burning candle considered a chemical change?
80. Why is respiration a chemical reaction?

(10) Chemical Formula & Symbol-Based Questions

81. Write the chemical formula of rust.
82. What is the chemical formula of hydrochloric acid?
83. Write the balanced equation for the reaction between iron and sulfur.
84. What is the chemical equation for photosynthesis?
85. Write the chemical formula of calcium carbonate.