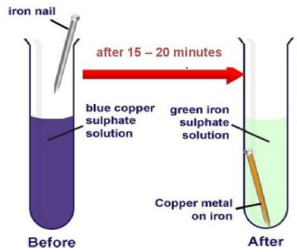
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Questions:

Case Study Questions

1. In the below experiment, when an iron nail is dipped in copper sulphate solution, a brown coating of copper is formed in the surface of iron and the colour of copper sulphate solution changes from blue to pale green. The reaction shows that iron is more reactive than copper because it displaces copper from the copper sulphate solution.



(i) The equation $Cu + xHNO_3 \rightarrow Cu(NO_3)_2 + yNO_2 + 2H_2O$
The values of x and y are
(a) 3 and 5 (b) 8 and 6 (c) 4 and 2 (d) 7 and 1
(ii) What happens when copper rod is dipped in iron sulphate solution :
(a) Copper displaces iron
(b) Blue colour of copper sulphate solution is obtained
(c) No reaction takes place
(d) Reaction is exothermic
(iii) A substance which oxidised itself and reduces other is known as :
(a) Oxidising agent (b) Reducing agent (c) Both (a) and (b) (d) None of these
(iv) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$
The above reaction is an example of a :
(a) Combination reaction (b) Double displacement reaction
(c) Decomposition reaction (d) Displacement reaction
(v) Name the products formed when iron filings are heated with dilute hydrochloric acid.
(a) Fe (III) chloride and water
(b) Fe (II) chloride and water
(c) Fe (II) chloride and hydrogen gas
(d) Fe (III) chloride and hydrogen gas

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Assertion and reason

2. Assertion: The reaction during which hydrogen is lost is called oxidation reaction.
Reason: Reducing agent removes hydrogen from another substance.
Codes
(a) Both A and R are true, and R is correct explanation of the assertion.
(b) Both A and R are true, but R is not the correct explanation of the assertion.
(c) A is true, but R is false.
(d) A is false, but R is true.

3. Assertion: Chips manufacturers usually flush bags of chips with gas such as nitrogen to prevent the chips from getting oxidised.
Reason: This increase the taste of the chips and helps in their digestion.
Codes
(a) Both A and R are true, and R is correct explanation of the assertion.
(b) Both A and R are true, but R is not the correct explanation of the assertion.
(c) A is true, but R is false.
(d) A is false, but R is true.

3 Marks

4. 2g ferrous sulphate crystals are heated in a dry boiling tube.
(i) List any two observations.
(ii) Name the type of chemical reaction taking place.
(iii) Write the chemical equation of the reaction.

5. What happens when:
(i) Dilute hydrochloric acid is added to solid sodium carbonate.
(ii) Quicklime is treated with water.
(iii) Sodium chloride solution is added to lead nitrate solution.
Also write the chemical equation in each case.

6. Name the type of reaction for the following:
(i) Vegetable matter changing into compost.
(ii) Burning of natural gas.
(iii) Adding water to quick lime to form slaked lime

7. A teacher took few crystals of sugar in a dry test tube and heated the test tube over flame. The colour of sugar turned black. Explain why?

2 Marks

8. Why is photosynthesis considered as endothermic reaction?

9. (i) State the law which is followed in balancing a chemical equation.
(ii) Balance the following chemical equation:
$Fe + H_2O \rightarrow Fe_3O_4 + H_2$

10. When a solution of potassium iodide is added to a solution of lead nitrate in a test tube, a reaction takes place.
(ii) What type of reaction is this?
(iii) Write a balanced chemical equation to represent the above reaction

11. Identify the type of reaction in the following example:
$Na_2SO_4(aq) + BaCl_2(aq) \longrightarrow BaSO_4(s) + 2NaCl(aq)$

Multiple Choice Question

12. The electrolytic decomposition of water gives H_2 and O_2 in the ratio of
(a) 1 : 2 by volume (b) 2 : 1 by volume (c) 8 : 1 by mass (d) 1 : 2 by mass

13. $NH_4OH + FeCl_3 \rightarrow NH_4Cl + Fe(OH)_3$
To balance the above equation, the coefficient for ammonium hydroxide and ammonium chloride will be:
(a) 3 and 3 (b) 3 and 1 (c) 3 and 2 (d) 2 and 3

14. Which of the following is not a combination reaction?
(a) Reaction of hydrogen with nitrogen. (b) Reaction of quicklime with water. (c) Combustion of magnesium in air. (d) Heating of limestone.

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