



CHEMISTRY

BOOKS - U-LIKE CHEMISTRY (HINGLISH)

CHEMICAL REACTIONS AND EQUATIONS

NCERT Questions

1. Why should a magnesium ribbon be cleaned before burning in air ?

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2. Write the balanced equation for the following chemical reactions :

Hydrogen + Chlorine \rightarrow Hydrogen chloride

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3. Write the balanced equation for the following chemical reactions :

+ Aluminium sulphate \rightarrow Barium sulphate + Aluminium chloride

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4. Write the balanced equation for the following chemical reactions :

\rightarrow Sodium hydroxide + Hydrogen.

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5. Write a balanced chemical equation with state symbols for the following reactions :

Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.

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6. Write a balanced chemical equation with state symbols for the following reactions :

sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water.

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7. A solution of a substance 'X' is used for white washing.

Identify substance 'X' and write its formula.

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8. A solution of a substance 'X' is used for white washing.

Write the chemical reaction of the substance 'X' named in (i) above with water.

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9. Why is the amount of gas collected in one of the test tubes in Activity 5 double of the amount collected in the other ? Name this gas.

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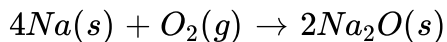
10. Why does the colour of copper sulphate solution change when an iron nail is dipped in it ?

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11. Give an example of a double displacement reaction other than the one given in Activity 8.

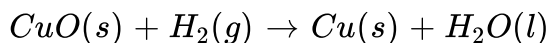
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12. Identify the substances that are oxidised and the substances that are reduced in the following reactions :



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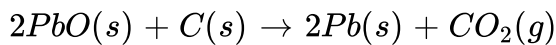
13. Identify the substances that are oxidised and the substances that are reduced in the following reactions :



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NCERT Exercises

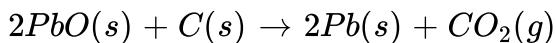
1. Which of the statements about the reaction below are incorrect ?



Lead is getting reduced.

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2. Which of the statements about the reaction below are incorrect ?

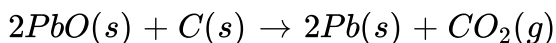


Carbon dioxide is getting oxidised.



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3. Which of the statements about the reaction below are incorrect ?

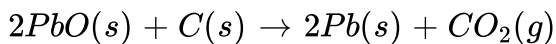


Carbon is getting oxidised.



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4. Which of the statements about the reaction below are incorrect ?



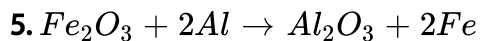
Lead oxide is getting reduced.

(i) (a) and (b) (ii) (a) and (c)

(iii) (a), (b) and (c) (iv) All.



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The above reaction is an example of a

- A. combination reaction.
- B. double displacement reaction.
- C. decomposition reaction.
- D. displacement reaction.

Answer: D

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6. What happens when dilute hydrochloric acid is added to iron filling ?

Tick the correct answer.

- A. Hydrogen gas and iron chloride are produced.
- B. Chlorine gas and iron hydroxide are produced.

C. No reaction takes place.

D. Iron salt and water are produced.

Answer: A

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7. What is a balanced chemical equation ? Why should chemical equations be balanced ?

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8. Translate the following statements into chemical equations and then balance them :

Hydrogen gas combines with nitrogen to form ammonia.

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9. Translate the following statements into chemical equations and then balance them :

Hydrogen sulphide gas burns in air to give water and sulphur dioxide.

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10. Translate the following statements into chemical equations and then balance them :

Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate.

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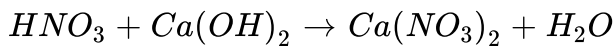
11. Translate the following statements into chemical equations and then balance them :

Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.

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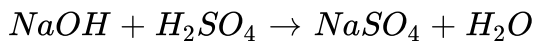
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12. Balance the following chemical equations :



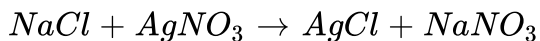
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13. Balance the following chemical equations :



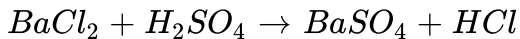
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14. Balance the following chemical equations :



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15. Balance the following chemical equations :



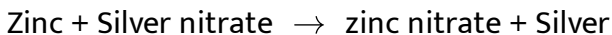
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16. Write the balanced chemical equations for the following reactions :



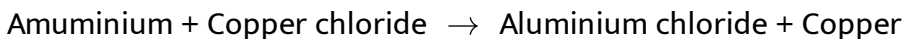
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17. Write the balanced chemical equations for the following reactions :



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18. Write the balanced chemical equations for the following reactions :



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19. Write the balanced chemical equations for the following reactions :

Barium chloride + Potassium sulphate \rightarrow Barium sulphate + Potassium chloride

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20. Write the balanced chemical equation for the following and identify the type of reaction in each case :

Potassium bromide (aq) + Barium iodide (a) \rightarrow Potassium iodide (aq) + Barium bromide (s)

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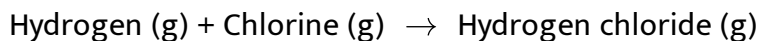
21. Write the balanced chemical equation for the following and identify the type of reaction in each case :

Zinc carbonate (s) \rightarrow Zinc oxide (s) + Carbon dioxide (g)



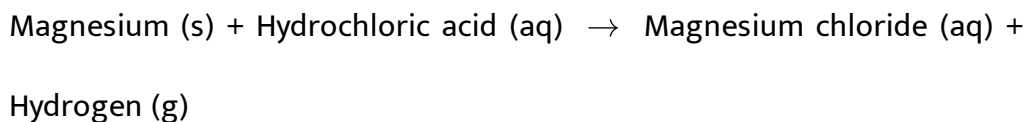
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22. Write the balanced chemical equation for the following and identify the type of reaction in each case :



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23. Write the balanced chemical equation for the following and identify the type of reaction in each case :



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24. What does one mean by exothermic and endothermic reactions ? Give examples.



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25. Why is respiration considered an exothermic reaction ? Explain.

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26. Why are decomposition reactions called the opposite of combination reactions ? Write equations for these reactions.

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27. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.

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28. What is the difference between displacement and double displacement reactions ? Write equations for these reactions.



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29. In the refining of silver, the recovery of silver nitrate solution involved displacement by copper metal. Write down the reaction involved.



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30. What do you mean by a precipitation reaction ? Explain by giving examples.



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31. Explain the following in terms of gain or loss of oxygen with two examples each :

Oxidation



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32. Explain the following in terms of gain or loss of oxygen with two examples each :

Reduction

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33. A shiny brown coloured element 'X' on heating in air becomes black in colour. Name the element 'X' and the black coloured compound formed.

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34. Why do we apply paint on iron articles ?

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35. Oil and fat containing food items are flushed with nitrogen. Why ?

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36. Explain the following terms with one example each :

Corrosion

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37. Explain the following terms with one example each :

Rancidity

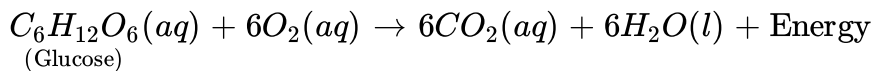
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Case Based Source Based Integrated Questions

1. Answer question number (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

We all know that we need energy to stay alive. We get this energy from the food we eat. During digestion, food is broken down into simpler substances. For example, rice, potatoes and bread contain carbohydrates. These carbohydrates are broken down to form glucose. This glucose

combines with oxygen in the cells of our body and provides energy. The special name of this reaction is respiration.

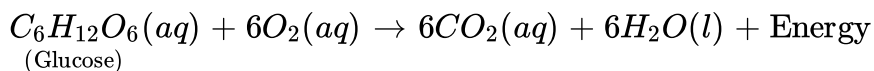


Where do we get energy for our normal functioning ?

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2. Answer question number (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

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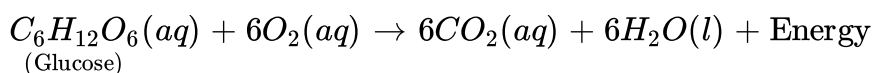


Name some foods that come under the category of carbohydrates.

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3. Answer question number (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

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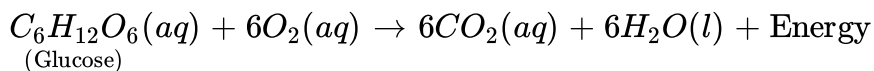
What is the end product of breaking of carbohydrates ?

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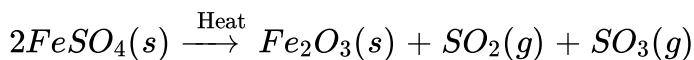
How much end CO_2 and H_2O are produced when 90 g of glucose is decomposed



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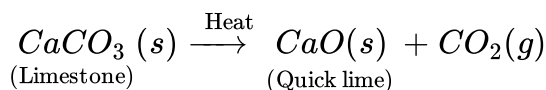
5. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

Green colour of ferrous sulphate crystals changes on heating. Also the smell of characteristic odour of burning sulphur is felt.



In this reaction, you can observe that a single reactant breaks down to give simpler products. This is a decomposition reaction. Ferrous sulphate crystals ($FeSO_4 \cdot 7H_2O$) lose water when heated and the colour of the crystals changes. It then decomposes to ferric oxide (Fe_2O_3), sulphur dioxide (SO_2) and sulphur trioxide (SO_3). Ferric oxide is a solid, while

SO_2 and SO_3 are gases. Decomposition of calcium carbonate to calcium oxide and carbon dioxide on heating is an important decomposition reaction used in various industries. Calcium oxide is called lime or quick lime. It has many uses -one is in the manufacture of cement. When a decomposition reaction is carried out by heating, it is called thermal decomposition.



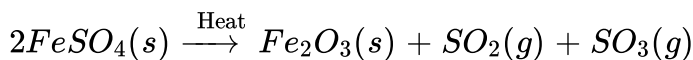
What is meant by a decomposition reaction ?



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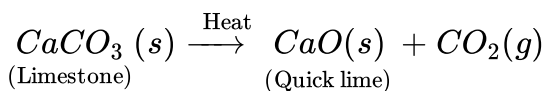
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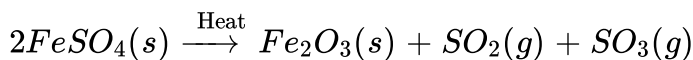
Give an important household application of quick lime other than in the manufacture of cement.



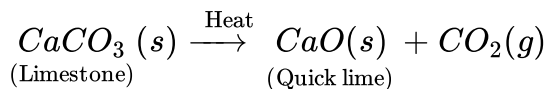
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7. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

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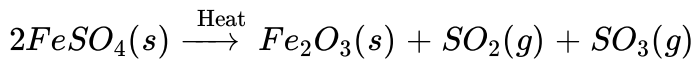
How much quick lime is obtained when 50 g of limestone is heated strongly?



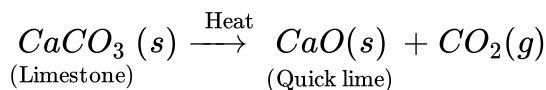
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What is the difference between decomposition reaction and thermal decomposition ?



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9. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

You must have observed that iron articles are shiny when new, but get coated with a reddish brown powder when left for some time. This process is commonly known as rusting of iron. Some other metals also get tarnished in this manner. Have you noticed the colour of the coating formed on copper and silver ? When a metal is attacked by substances around it such as moisture, acids, etc, it is said to corrode and this process is called corrosion. The black coating on silver and the green coating on copper are other examples of corrosion.

Corrosion causes damage to car bodies, bridges, iron railing, ships and to all object made of metals, especially those or iron. Corrosion of iron is a serious problem. Every year an enormous amount of money is spent to replace damaged iron.

What kind of reaction is the process of rusting ?



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10. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

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How is acid produced in the atmosphere ?



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How does the rust on copper or silver look like ?



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12. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and related studied concepts.

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What damage is caused to national property due to the phenomenon of rusting ?



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Multiple Choice Questions

1. Mark the incorrect statement :

- A. Substance appearing on the left hand side of the equation are called products.
- B. Substances appearing on the right hand side of the equation are called products.
- C. Substances appearing on the left hand side of the equation are called reactants.
- D. Reactants and products are separated by an arrow mark.

Answer: A



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2. What is the number of iron atoms and hydrogen atoms in the balanced equation for the reaction of steam on iron ?

- A. 3Fe and 8 H
- B. 3Fe and 4H
- C. 3Fe and 6H
- D. 3Fe and 10H

Answer: A



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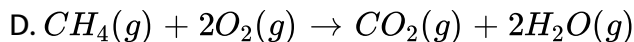
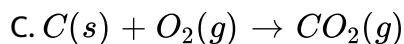
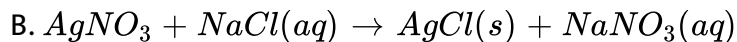
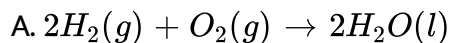
3. The shiny finish to the walls is because of

- A. calcium oxide.
- B. calcium hydroxide
- C. calcium carbonate.
- D. calcium phosphate.

Answer: C

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4. Which of the following is not an example of combination reaction ?



Answer: B

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5. On heating ferrous sulphate crystals, we obtain

A. a mixture of ferric oxide and sulphur dioxide.

- B. a mixture of ferrous oxide and sulphur trioxide.
- C. a mixture of ferric oxide, sulphur dioxide and sulphur trioxide.
- D. a mixture of ferrous oxide, sulphur dioxide and sulphur trioxide.

Answer: C



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6. Which of the following are exothermic processes ?

- (i) Reaction of water with quick lime
- (ii) Dilution of an acid
- (iii) Evaporation of water
- (iv) Sublimation of camphor (crystals)

- A. (i) and (ii)
- B. (ii) and (iii)
- C. (i) and (iv)
- D. (iii) and (iv)

Answer: A

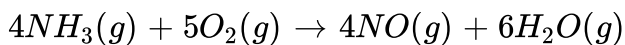


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7. The following reaction is an example of a

(i) displacement reaction. (ii) combination reaction.

(iii) redox reaction. (iv) neutralisation reaction.



A. (i) and (iv)

B. (ii) and (iii)

C. (i) and (iii)

D. (iii) and (iv)

Answer: C



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8. Which of the following is (are) an endothermic process(es) ?

(i) Dilution of sulphuric acid (ii) Sublimation of dry ice

(iii) Condensation of water vapours (iv) Evaporation of water

A. (i) and (iii)

B. (ii) only

C. (iii) only

D. (ii) and (iv)

Answer: D



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9. Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water to form its solution called lime water. Which among the following is (are) true about slaking of lime and the solution formed ?

It is an endothermic reaction.

(ii) It is an exothermic reaction.

(iii) The pH of the resulting solution will be more than seven.

(iv) The pH of the resulting solution will be less than seven.

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iv)

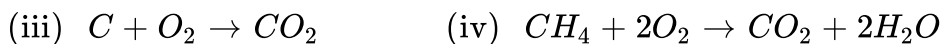
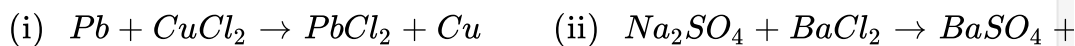
D. (iii) and (iv)

Answer: B



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10. Which among the following is double displacement reaction(s) ?



A. (i) and (iv)

B. (ii) only

C. (i) and (ii)

D. (iii) and (iv)

Answer: B



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11. Which of the following gases can be used for storage of fresh sample of a oil for a long time ?

A. Carbon dioxide or oxygen

B. Nitrogen or oxygen

C. Carbon dioxide or helium

D. Helium or nitrogen

Answer: D



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12. Which one of the following processes involve chemical reactions ?

- A. Storing of oxygen gas under pressure in a gas cylinder.
- B. Liquefaction of air.
- C. Keeping petrol in a chine dish in the open.
- D. Heating copper wire in presence of air at high temperature.

Answer: D

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13. Which of the following are combination reactions ?

- (i) $2KClO_3 \xrightarrow{\text{Heat}} 2KCl + 3O_2$ (ii) $MgO + H_2 \rightarrow Mg(OH)_2$
(iii) $4Al + 3O_2 \rightarrow 2Al_2O_3$ (iv) $Zn + FeSO_4 \rightarrow ZnSO_4 + Fe$

- A. (i) and (iii)
- B. (iii) and (iv)

C. (ii) and (iv)

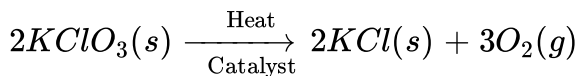
D. (ii) and (iii)

Answer: D



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14. The following reaction is used for the preparation of oxygen gas in the laboratory



Which of the following statement(s) is (are) correct about the reaction ?

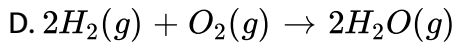
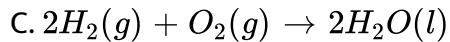
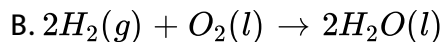
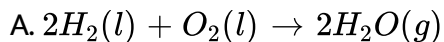
- A. It is a decomposition reaction and endothermic in nature.
- B. It is a combination reaction.
- C. It is a decomposition reaction and accompanied by release of heat.
- D. It is a photochemical decomposition reaction and exothermic in nature.

Answer: A



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15. In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature ?



Answer: D



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16. Electrolysis of water is a decomposition reaction. The mole ratio of hydrogen and oxygen gases liberated during electrolysis of water is

- A. 1 : 1
- B. 2 : 1
- C. 4 : 1
- D. 1 : 2

Answer: B



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17. Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of the reaction involved ?

- (i) Displacement reaction (ii) Precipitation reaction
- (iii) Combination reaction (iv) Double displacement reaction

A. (i) only

B. (ii) only

C. (iv) only

D. (ii) and (iv)

Answer: D

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18. In the double displacement reaction aqueous potassium iodide and aqueous lead nitrate, a yellow precipitate of lead iodide is formed. While performing th activity if lead nitrate is not available, which of the following can be used in place of lead nitrate ?

A. Lead sulphute (insoluble)

B. Lead acetate

C. Ammonium nitrate

D. Potassium sulphate

Answer: B



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19. Three beakers labelled as A, B and C each containing 25 mL of water were taken. A small amount of $NaOH$, anhydrous $CuSO_4$ and $NaCl$ were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is (are) correct ?

- (i) In beakers A and B, exothermic process has occurred.
- (ii) In beakers A and B, endothermic process has occurred.
- (iii) In beaker C exothermic process has occurred.
- (iv) In beaker C endothermic process has occurred.

A. (i) only

B. (ii) only

C. (i) and (iv)

D. (ii) and (iii)

Answer: C

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20. Which among the following statement(s) is (are) true ? Exposure of silver chloride to sunlight for a long duration turns grey due to

(i) the formation of silver by decomposition of silver chloride.

(ii) sublimation of silver chloride.

(iii) decomposition of chlorine gas from silver chloride.

(iv) oxidation of silver chloride.

A. (i) only

B. (i) and (iii)

C. (ii) and (iii)

D. (iv) only

Answer: A



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21. Iron nails were added to ferrous sulphate solution in a test tube and kept for some time. The colour of iron nails became brownish. The reaction that takes place in categorised as

- A. Decomposition reaction.
- B. Combination reaction
- C. Double decomposition reaction.
- D. Displacement reaction.

Answer: A



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22. A silver ornament remained exposed to the atmosphere for a long time. The colour of its surface looked

A. green

B. red

C. black

D. blue

Answer: C

 [View Text Solution](#)

23. When fats and oils are oxidised,

A. they become rancid.

B. their smell change

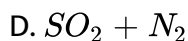
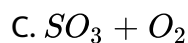
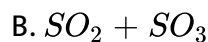
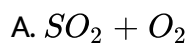
C. their taste changes

D. all the above.

Answer: D

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24. Ferrous sulphate on heating gives ferric oxide. Two gases that accompany the reaction are



Answer: B

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True Or False

1. Reaction of zinc with copper sulphate to form zinc sulphate and copper is an example of double decomposition reaction.

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[View Text Solution](#)

2. Burning of magnesium ribbon in air is both a combination reaction and an oxidation reaction.

 [View Text Solution](#)

3. Corrosion causes damage to car bodies, bridges, railways and ships.

 [View Text Solution](#)

4. Precipitation reactions do not produce insoluble salts.

 [View Text Solution](#)

5. In a combination reaction, only two substances can combine to form a new single substance.

 [View Text Solution](#)

6. Reactions in which energy is absorbed are known as endothermic reactions.

 [View Text Solution](#)

7. Reduction is the loss of oxygen or gain of hydrogen.

 [View Text Solution](#)

8. Ferrous sulphate crystals ($FeSO_4 \cdot 7H_2O$) on heating lose water of crystallisation partially and change to $FeSO_4 \cdot 5H_2O$.

 [View Text Solution](#)

9. If we do not add a few drops of H_2SO_4 to water, its electrolysis does not take place.

 [View Text Solution](#)

10. The products obtained by decomposition of $AgCl$ by sunlight are silver and hydrochloric acid.

 [View Text Solution](#)

Fill In The Blanks

1. Whenever a _____ change occurs, we say that a chemical reaction has taken place.

 [View Text Solution](#)

2. Magnesium ribbon burns with a white dazzling light and changes into _____ powder.

 [View Text Solution](#)

3. Zinc reacts with sulphuric acid to form zinc sulphate with liberation of _____ gas.

 [View Text Solution](#)

4. Chemical formula for marble is _____ .

 [View Text Solution](#)

5. During _____ food is broken down into simpler substances.

 [View Text Solution](#)

6. Silver chloride decomposes into silver and chlorine by the action of _____ .

 [View Text Solution](#)

7. Decomposition of _____ to calcium oxide and carbon dioxide is used in various industries.

 [View Text Solution](#)

8. Burning of methane to give carbon dioxide and water is an _____ reaction.

 [View Text Solution](#)

Assertion Reason Questions

1. Assertion (A) : Iron articles get coated with reddish brown powder when left for sometime in the open.

Reason (R) : Iron is attacked by substances around it such as moisture, acids, etc.

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.

Answer: A



[View Text Solution](#)

2. Assertion (A) : Fat/Oil containing food substances become rancid and their smell taste changes.

Reason (R) : We keep food in air - tight containers.

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.

Answer: B

 [View Text Solution](#)

3. Assertion (A) White silver chloride turns grey in sunlight.

Reason (R) : Copper reacts with zinc sulphate to form copper sulphate and zinc is deposited.

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.

Answer: C

 [View Text Solution](#)

4. Assertion (A) : Precipitation reactions produce soluble salts.

Reason (R) : In the reaction : Lead oxide + Carbon \rightarrow Lead + Carbon dioxide, carbon is getting oxidised.

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.

Answer: D

5. Assertion (A) : A complete chemical equation represents the reactants and products and their physical state symbolically.

Reason (R) : In a combination reaction, two or more substance combine to form a new single substance.

- 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.

Answer: B

6. Assertion (A) : Slaking of lime is an exothermic and combination reaction.

Reason (R) : Quick lime reacts with water to produce slaked lime.

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.

Answer: A



[View Text Solution](#)

7. Assertion (A) : On passing steam over hot iron, oxygen gas is produced.

Reason (R) : A molecule of zinc sulphate contains four atoms of oxygen.

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.

Answer: D

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8. Assertion (A) : An equation is not complete if the physical states of reactants and products is not given.

Reason (R) CO_2 and H_2O react in the presence of haemoglobin to produce glucose.

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.

Answer: C

 [View Text Solution](#)

9. Assertion (A) : Glucose combines with oxygen in the cells of our body and provides energy.

Reason (R) : Reaction in which heat is released along with the formation of products are called exothermic reactions.

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.

Answer: B



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10. Assertion (A) : Calcium hydroxide reacts slowly with the CO_2 in air to form a thin layer of $CaCO_3$ on the walls.

Reason (R) : Decomposition reactions require energy in the form of heat, light or electricity for breaking down the reactants.

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.

Answer: B

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Very Short Answer Questions

1. What happens when a magnesium ribbon is ignited ? Give chemical reaction.

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2. Potato chips manufacturers fill the packet of chips with nitrogen gas. Why?

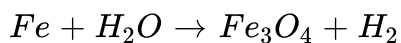
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3. Write the equation in the symbolic form with state symbols for the following reaction :

Zinc + Sulphuric acid \rightarrow Zinc sulphate + Hydrogen

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4. Balance the following equation :



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5. Why do we magnesium ribbon with a sand - paper before igniting ?

 [View Text Solution](#)

6. $N_2 + 3H_2 \rightarrow 2NH_3$, name the type of reaction.

 [View Text Solution](#)

7. What happens chemically when quick lime is added to water ?



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8. On adding dilute hydrochloric acid to copper oxide powder, the solution formed is blue-green. Predict the new compound formed which imparts a blue - green colour to the solution.



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9. Why is respiration considered an exothermic process ?



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10. If copper metal is heated over a flame it develops a coating. What is the colour and composition of coating ?



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11. Hydrogen and oxygen gases are produced at the cathode and anode respectively in the electrolysis of acidulated water. What is the ratio of the volumes of hydrogen and oxygen gases ?

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12. Silver chloride on photochemical decomposition produces silver and chlorine. What is the application of this reaction ?

 [View Text Solution](#)

13. What are exothermic and endothermic reactions ?

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14. Write a balanced chemical equation to represent the following reaction : Carbon monoxide reacts with hydrogen gas at 340 atm to form

methyl alcohol

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15. Which one is a chemical change - fermentation of fruit juice or diluting fruit juice ?

 [View Text Solution](#)

16. Tell whether heat is evolved or absorbed when quick lime is added to water.

 [View Text Solution](#)

17. Which colour change and smell are observed when crystals of ferrous sulphate are heated ? Give chemical reaction also.

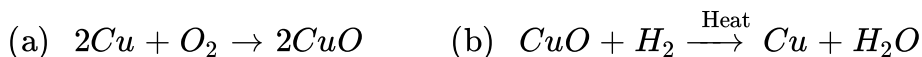
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18. Lead nitrate on heating gives lead oxide, nitrogen oxide and oxygen.

Write balanced equation with state symbols for this reaction.

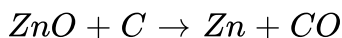
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19. Which of the following reactions is oxidation and which is reduction ?



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20. In the following reaction, while reactants undergo oxidation and which reactants undergo reduction ?



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21. Is burning of a candle wax a physical change or a chemical change ?

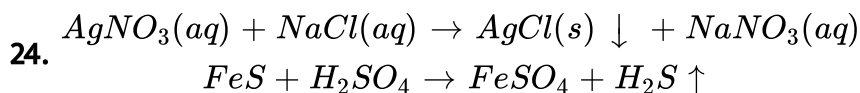
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22. State one basic difference between a physical change and a chemical change.

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23. Name and state the law which is kept in mind when we balance a chemical equation.

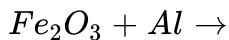
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Consider the above mentioned two chemical equations with two different kinds of arrows (\uparrow) and (\downarrow) along with products. What do these two different arrows indicate ?

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25. Complete and balance the following equation :



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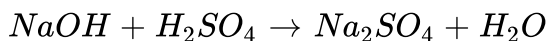
26. Define oxidation and reduction.

 [View Text Solution](#)

27. Give an example of double displacement reaction (only reaction with complete balanced equation).

 [View Text Solution](#)

28. Balance the following chemical equation :



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29. What are the conditions that promote corrosion ?

 [View Text Solution](#)

30. What do we mean when we say that a substance has gone rancid ?

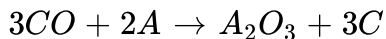
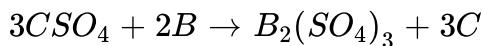
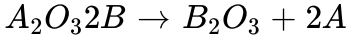
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31. Why do fire flies glow at night ?

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Short Answer Questions

1. A, B and are three elements which undergo chemical according to the following equations :

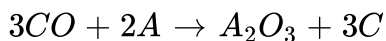
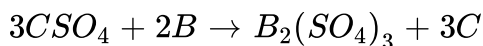
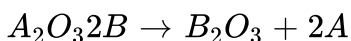


Answer the following questions with reactions :

Which element is the most reactive ?

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2. A, B and are three elements which undergo chemical according to the following equations :

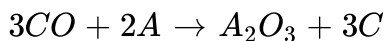
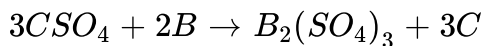
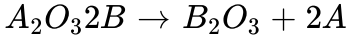


Answer the following questions with reactions :

Which element is the least reactive ?

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3. A, B and are three elements which undergo chemical according to the following equations :



Answer the following questions with reactions :

What is the type of reactions listed above ?

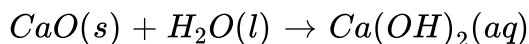
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4. Name the type of chemical reaction represented by the following equations :



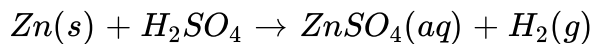
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5. Name the type of chemical reaction represented by the following equations :



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6. Name the type of chemical reaction represented by the following equations :



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7. A solution of a substance 'X' is used for testing carbon dioxide. What will be the reaction of 'X' with carbon dioxide ? Write balanced equation for this reaction.

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8. How is 'X' obtained ? Give chemical equation.

 [View Text Solution](#)

9. A small amount of quick lime is added to water in a beaker.

Name and define the type of reaction that has taken place.



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10. A small amount of quick lime is added to water in a beaker.

Write balanced chemical equation for the above reaction. Write the chemical name of product obtained.



[View Text Solution](#)

11. A small amount of quick lime is added to water in a beaker.

State two observations that you will make in the reaction.



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12. In the electrolysis of water :

Name the gas collected at the cathode and the anode.



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13. In the electrolysis of water :

Why is the volume of gas collected at one electrode is double of the other ?

 [View Text Solution](#)

14. In the electrolysis of water :

Why are few drops of dil. H_2SO_4 added to the water ?

 [View Text Solution](#)

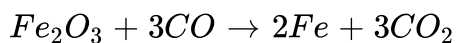
15. Write balanced chemical equation for the reactions that take place during respiration . Identify the type of combination reaction that taken place during this process and justify the name. Give one more example of this type of reaction.

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16. An aqueous solution of metal nitrate 'P' reacts with sodium bromide solution to form yellow precipitate compound 'Q' which is used in photography. 'Q' on exposure to sunlight undergoes decomposition reaction to form metal present in along with a raddish brown gas. Identify 'P' and 'Q' Write balanced chemical equation for the chemical reaction. List two categories in which this reaction can be placed.

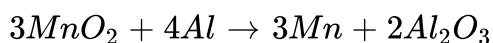
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17. Name the substance oxidised and reduced, and also identify the oxidising agents and reducing agents in the following reactions :



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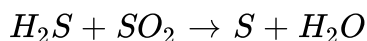
18. Name the substance oxidised and reduced, and also identify the oxidising agents and reducing agents in the following reactions :





[View Text Solution](#)

19. Name the substance oxidised and reduced, and also identify the oxidising agents and reducing agents in the following reactions :



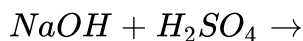
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20. Complete and balance the following equations :



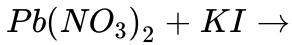
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21. Complete and balance the following equations :



[View Text Solution](#)

22. Complete and balance the following equations :



[View Text Solution](#)

23. State reason for the following :

Potato chips manufacturers usually flush bags of chips with nitrogen gas.



[View Text Solution](#)

24. State reason for the following :

Iron articles lose their shine gradually.



[View Text Solution](#)

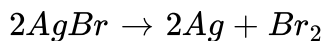
25. State reason for the following :

Foods should be kept in air - tight containers.



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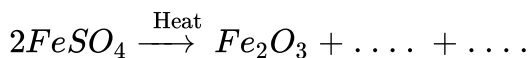
26. Write the essential condition for following reaction to take place :



Write one application of this reaction.

 [View Text Solution](#)

27. Complete the following chemical equation of a chemical reaction :

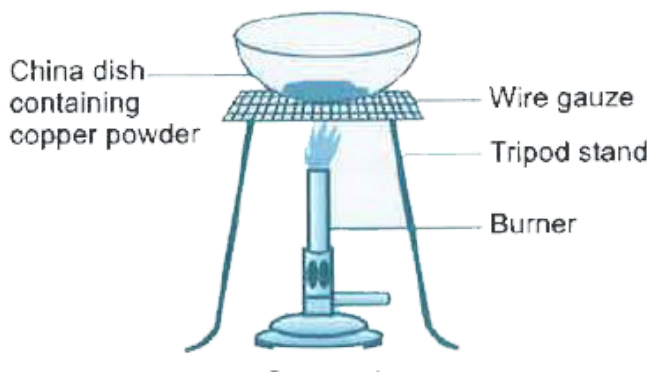


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28. What happens when water is added to quick lime ? Write chemical equation.

 [View Text Solution](#)

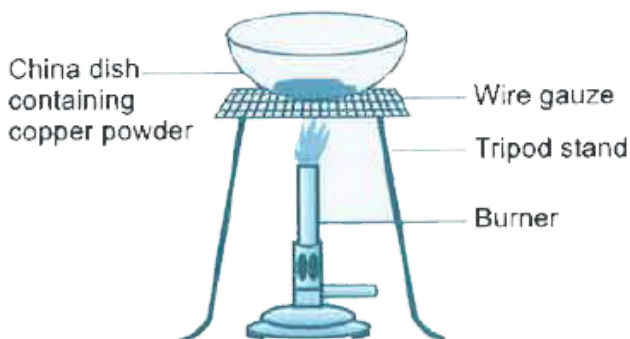
29. Look at the figure given below and answer the following questions



State the colour of the reactant and the product of the chemical reaction.

 [View Text Solution](#)

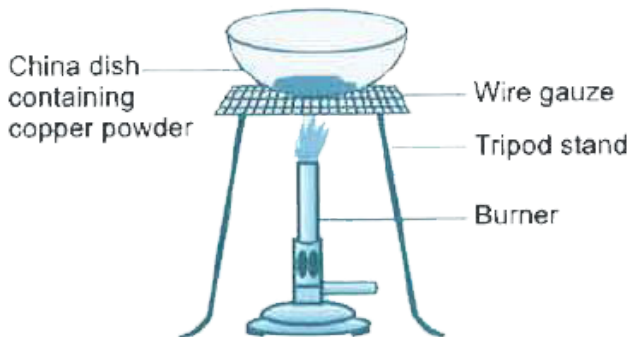
30. Look at the figure given below and answer the following questions



Write the chemical equation involved in this process.

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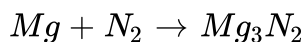
31. Look at the figure given below and answer the following questions



Can we convert the product obtained back to reactant ? Write the reaction involved.

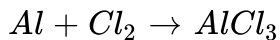
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32. Balance the following chemical equations :



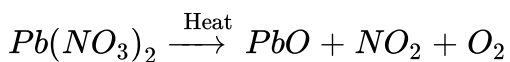
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33. Balance the following chemical equations :



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34. Balance the following chemical equations :



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35. Take 3 g of barium hydroxide in a test tube, now add about 2 g ammonium chloride and mix the contents with the help of a glass rod.

Now touch the test tube from outside.

What do you feel on touching the test tube ?

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36. Take 3 g of barium hydroxide in a test tube, now add about 2 g ammonium chloride and mix the contents with the help of a glass rod.

Now touch the test tube from outside.

State the inference about the type or reaction occurred.

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37. Take 3 g of barium hydroxide in a test tube, now add about 2 g ammonium chloride and mix the contents with the help of a glass rod.

Now touch the test tube from outside.

Write the balanced chemical equation of the reaction involved.

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38. Write the balanced chemical equations for the following reactions :

Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and reaction hydrogencarbonate.

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39. Write the balanced chemical equations for the following reactions :

Sodium hydrogencarbonate on reaction with hydrochloric acid sodium chloride, water and liberates carbon dioxide.

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40. Write the balanced chemical equations for the following reactions :

Copper sulphate on treatment with potassium iodide precipitates cuprous iodide (Cu_2I_2) liberates I_2 gas and also forms potassium sulphuric.

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41. Classify the following chemical reactions as exothermic or endothermic :

Water is added to quick lime.





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42. Classify the following chemical reactions as exothermic or endothermic :

Dilute sulphuric acid is added to zinc granules.



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43. Classify the following chemical reactions as exothermic or endothermic :

When ammonium chloride is dissolved in water in a test tube it becomes cold.



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44. Classify the following chemical reactions as exothermic or endothermic :

The decomposition of vegetable matter into compost.



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45. Classify the following chemical reactions as exothermic or endothermic :

Electrolysis of water.



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46. Classify the following chemical reactions as exothermic or endothermic :

Silver chloride turns grey in the presence of sunlight to form silver metal.



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47. Write chemical equations for the reactions taking place when :
magnesium reacts with dilute HNO_3 .



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48. Write chemical equations for the reactions taking place when :
sodium reacts with water.

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49. Write chemical equations for the reactions taking place when :
zinc reacts with dilute hydrochloric acid.

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50. You must have tasted or smelt the fat containing food material left for a long time. Such foods taste and smell bad. What is the reason for the reason for this ? Name to the phenomenon responsible for it. List two measures for its prevention.

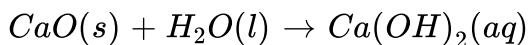
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51. Name the type of chemical reaction represented by the following equations :



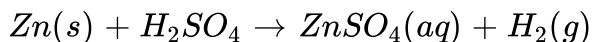
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52. Name the type of chemical reaction represented by the following equations :



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53. Name the type of chemical reaction represented by the following equations :



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54. Classify the following chemical reactions as exothermic or endothermic :

Water is added to quick lime .

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55. Classify the following chemical reactions as exothermic or endothermic :

Dilute sulphuric acid is added to zinc granules.

 [View Text Solution](#)

56. Classify the following chemical reactions as exothermic or endothermic :

When ammonium chloride is dissolved in water in a test tube it becomes cold.

 [View Text Solution](#)

57. Classify the following chemical reactions as exothermic or endothermic :

The decomposition of vegetable matter into compost.

 [View Text Solution](#)

58. Classify the following chemical reactions as exothermic or endothermic :

Electrolysis of water.

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59. Classify the following chemical reactions as exothermic or endothermic :

Silver chloride turns grey in the presence of sunlight to form silver metal.

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60. Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactants. Write one equation each for decomposition reactions where energy is supplied in the form heat, light and electricity.

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Long Answer Questions

1. Account for the following :

(a) White silver chloride turns grey in sunlight.

(b) Brown coloured copper powder on heating in air turns into black coloured substance.

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2. What do you mean by :

(a) Displacement reaction ?

(b) Reduction reaction ?

Combination reaction ?

Write balanced chemical equations.

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3. What colour changes do you observe when :

(i) you add Zn to a solution of copper sulphate ?

(ii) you add Pb to a solution of cupric chloride ?

Write balanced equations.

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4. Complete and balance the following equations :

(i) $HgCl_2 + KI \rightarrow$ (ii) $Al + Cr_2O_3 \rightarrow$

(iii) $CuSO_4 + H_2S \rightarrow$ (iv) $(NH_4)_2Cr_2O_7 \xrightarrow{\Delta}$

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5. Observe the given figure and answer the following question :

Write the complete balanced reaction.

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6. Observe the given figure and answer the following question :

What is the type of reaction involved ?

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7. Observe the given figure and answer the following question :

Is there any precipitate formed ?

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8. Observe the given figure and answer the following question :

If any precipitate is formed, write the colour of the precipitate.

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9. Illustrate an activity along with a labelled diagram, to show that a change in the state of matter and change in temperature takes place during a chemical reaction.

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10. Write balanced chemical equations for the following reactions :

(i) Natural gas burns and combines with oxygen to produce carbon dioxide and water.

(ii) Ferrous sulphate crystals on heating break up into ferric oxide, sulphur dioxide and sulphur trioxide.

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

Write a balanced chemical equation of the reaction.

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

Identify the brown gas X evolved.

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

Identify the type of reaction.

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

What could be the pH range of aqueous solution of the gas X ?

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15. Can we stir silver nitrate solution with a copper spoon ? Why or why not ? Support your answer with reason.

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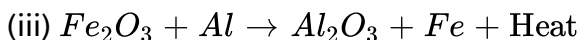
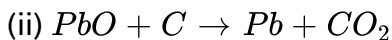
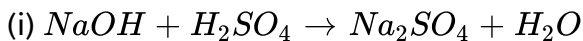
16. Why a brown coating is formed on the rod when iron rod is kept dipped in copper sulphate solution for sometime > What change will be observed in the colour of the solution ?

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17. A green coating develops on the copper vessel in the rainy season. Why ?

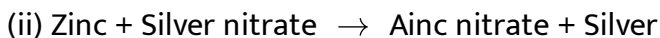
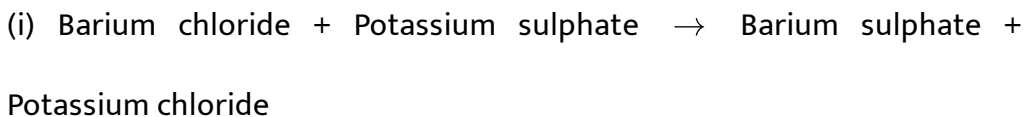
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18. Balance the following chemical equations :



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19. Write the balanced chemical equations for the following reaction :



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20. What is a balanced chemical equation ? Why should chemical equations be balanced ?



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21. Write the chemical equation of the reaction in which the following changes have taken place :

(i) Change in colour

(ii) Change in temperature

Formation of precipitate.



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