



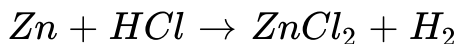
## CHEMISTRY

### BOOKS - MODERN PUBLICATION

### CHEMICAL REACTIONS AND EQUATIONS

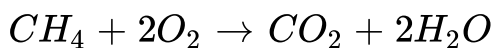
#### Example

1. Which of the following equations are balanced?



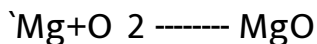
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2. Which of the following equations are balanced?



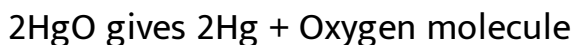
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3. Which of the following equations are balanced?



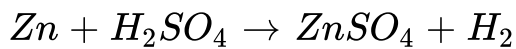
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4. Which of the following equations are balanced?



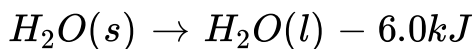
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5. Is following equations are balanced?



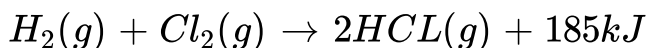
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6. the following equations are exothermic or endothermic?



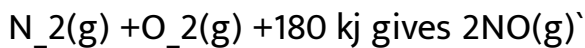
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7. Which of the following equations are exothermic or endothermic?



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8. Which of the following equations are exothermic or endothermic?



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9. Write the balanced chemical equations for each of the following reactions:

Zinc metal reacts with aqueous hydrochloric acid to produce a solution of zinc chloride and hydrogen gas.

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10. Write the balanced chemical equations for each of the following reactions:

When solid mercury (II) oxide is heated, liquid mercury and oxygen gas are produced.

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11. Write the balanced chemical equations for each of the following reactions:

Aqueous solution of sulphuric acid and sodium hydroxide react to form aqueous solution of sodium sulphate and water.

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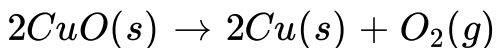
12. Write the balanced chemical equations for each of the following reactions:

Phosphorus burns in chlorine gas to form phosphorus pentachloride.



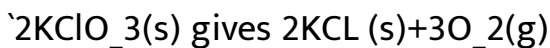
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13. Classify each of the following reactions



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14. Classify each of the following reactions



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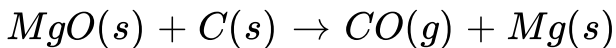
15. Classify each of the following reactions



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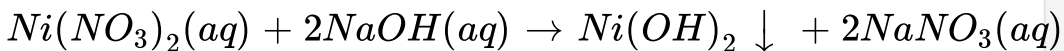
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16. Classify each of the following reactions



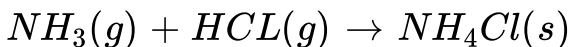
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17. Classify each of the following reactions



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18. Classify each of the following reactions



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19. Classify each of the following reactions



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20. Classify each of the following reactions



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21. Classify each of the following reactions



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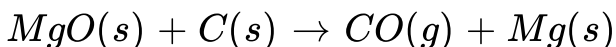


22. Classify each of the following reactions



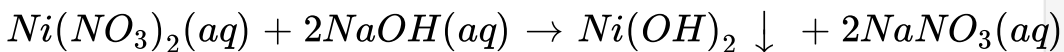
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23. Classify each of the following reactions



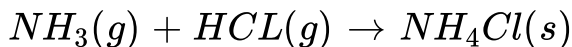
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24. Classify each of the following reactions



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25. Classify each of the following reactions



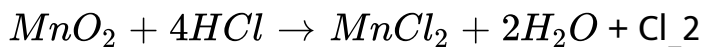
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26. Classify each of the following reactions



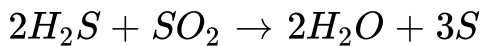
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27. Identify the substance oxidised and reduced in the chemical reaction:



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**28.** Name the substance oxidised and substance reduced in the following reactions:

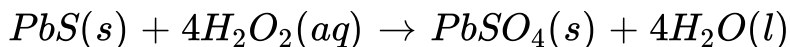


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**29.** Complete the following reactions:  $4Al + 3O_2 \rightarrow$

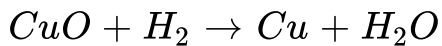
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**30.** Predict the oxidising agent and reducing agent in the following reaction:



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**31.** Name the substance oxidised and substance reduced in the following reactions:



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**32.** Consider the reaction:  $\text{H}_2\text{S} + \text{I}_2 \rightarrow 2\text{HI} + \text{S}$

Name the substance oxidised.



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**33.** Consider the reaction:  $\text{H}_2\text{S} + \text{I}_2 \rightarrow 2\text{HI} + \text{S}$

Name the substance reduced



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**34.** Consider the reaction:  $H_2S + I_2 \rightarrow 2HI + S$

Name the substance oxidised.

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**35.** Consider the reaction:  $H_2S + I_2 \rightarrow 2HI + S$

Name the substance oxidised.

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**36.** Identify the type of chemical reaction taking place in the following:

Barium chloride solution is mixed with copper sulphate solution and a white precipitate is observed.

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**37.** Identify the type of chemical reaction taking place in the following:

On heating copper powder in air in a China dish, the surface of copper powder turns black.

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**38.** Identify the type of chemical reaction taking place in the following:

On heating green coloured ferrous sulphate crystals reddish brown solid is left and smell of a gas having odour of burning sulphur is experienced.

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**39.** Identify the type of chemical reaction taking place in the following:

Iron nails when left dipped in blue copper sulphate solution become brownish in colour and the blue colour of copper sulphate fades away.

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**40.** Give the names of the elements present in the following compounds :Quick lime

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**41.** Describe an activity to observe what happens when quick lime is added to water taken in a beaker. State important

observation and name the type of reaction taking place.

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42. In which type of asexual reproduction takes place in Hydra?

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43. With what, magnesium ribbon is cleaned before burning it in air.

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44. Write the balanced chemical equation for the following reaction and identify the type of reaction. Hydrogen





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**45.** Write the balanced equation for the following chemical reaction.

Barium chloride + Aluminium sulphate  $\rightarrow$  Barium sulphate +  
Aluminium chloride

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**46.** Write the balanced equation for the following chemical reaction: Sodium + water  $\rightarrow$  Sodium hydroxide + Hydrogen

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

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

Sodium hydroxide solution (in water) reaction with hydrochloric acid solution (in water) to product sodium chloride solution and water.



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**48.** Write a balanced chemical equation with state symbols for the reaction : sodium hydroxide solution(in water) reacts with hydrochloric acid solution(in water) to produce sodium chloride and water



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**49.** A solution of substance 'X' is used for white washing.

Name the substance 'X' and write its formula

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**50.** A solution of substance 'X' is used for white washing. Write

the reaction of the substance X named in above with water.

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**51.** Why is the amount of gas collected in one of the test tubes

in activity 1.7 double of the amount collected in the other?

name this gas.

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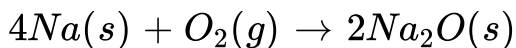
52. Why does the colour of copper sulphate solution change, when an iron nail is dipped in it?

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53. Give one example of:  
a double displacement reaction.

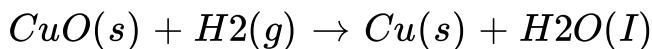
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54. Identify the substances that are oxidised and substances that are reduced in the following reactions:

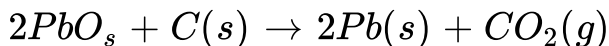


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55. Identify the substances that are oxidised and the substance that are reduced in the following reaction:

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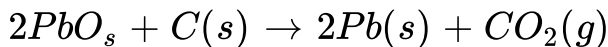
56. Which of the statements about the reaction low are incorrect?



- (a) Lead is getting reduced.
- (b) Carbon dioxide is getting oxidised.
- (c) Carbon is getting oxidised.
- (d) Lead oxide is getting reduced.

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57. Which of the statements about the reaction low are incorrect?

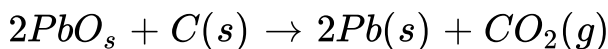


- (a) Lead is getting reduced.
- (b) Carbon dioxide is getting oxidised.
- (c) Carbon is getting oxidised.
- (d) Lead oxide is getting reduced.



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58. Which of the statements about the reaction low are incorrect?



- (a) Lead is getting reduced.

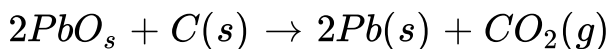
(b) Carbon dioxide is getting oxidised.

(c) Carbon is getting oxidised.

(d) Lead oxide is getting reduced.

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**59.** Which of the statements about the reaction low are incorrect?



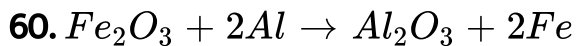
(a) Lead is getting reduced.

(b) Carbon dioxide is getting oxidised.

(c) Carbon is getting oxidised.

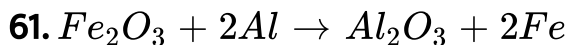
(d) Lead oxide is getting reduced.

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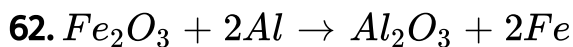
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The above réaction is an example of a

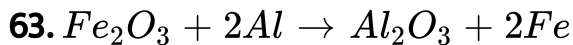
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The above reaction is an example of a



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64. What happens when dilute hydrochloric acid is added to iron filings? Tick the correct answer



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65. What happens when dilute hydrochloric acid is added to iron filings? Tick the correct answer



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**66.** What happens when dilute hydrochloric acid is added to iron filings? Tick the correct answer

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**67.** What happens when dilute hydrochloric acid is added to iron filings? Tick the correct answer

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

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**69.** Translate the following statement into chemical equation and then balance that.

Hydrogen gas combines with nitrogen to form ammonia.

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**70.** Translate the following statements into chemical equation and balance the equations : hydrogen sulphide gas burns in air to give water and sulphur dioxide.

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**71.** Translate the following statements into chemical equations and then balance them.

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



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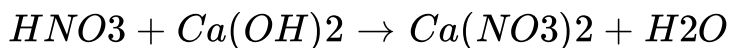
**72.** Translate the following statements into chemical equations and then balance them.

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



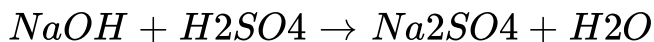
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**73.** Balance the following chemical equation:



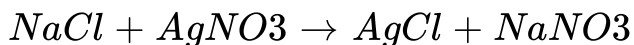
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74. Balance the following chemical equation:



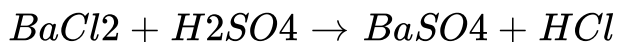
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75. Balance the following chemical equation:



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76. Balance the following chemical equation:



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77. Write the balanced chemical equation for the following reaction.

Calcium hydroxide + Carbon dioxide  $\rightarrow$  Calcium carbonate +  
Water

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78. Write the balanced chemical equation for the following reaction: Zinc+Silver nitrate  $\rightarrow$  Zinc nitrate + Silver

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79. Write the balanced chemical equation for the following reaction: Aluminium + Copper chloride  $\rightarrow$  Aluminium chloride + copper

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**80.** Write the balanced chemical equation for the following reaction: Barium chloride + Potassium sulphate  $\rightarrow$  Barium sulphate + Potassium chloride.

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**81.** Write the balanced chemical equation for the following reaction and identify the type of reaction . Zinc carbonate (s)  $\rightarrow$  Zinc oxide (s)+Carbon dioxide

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**82.** Write the balanced chemical equation for the following reaction and identify the type of reaction . Zinc carbonate (s)

→ Zinc oxide (s)+Carbon dioxide

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**83.** Write the balanced chemical equation for the following reaction and identify the type of reaction . Zinc carbonate (s)

→ Zinc oxide (s)+Carbon dioxide

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**84.** Write the balanced chemical equation for the following reaction and identify the type of reaction . Zinc carbonate (s)

→ Zinc oxide (s)+Carbon dioxide

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

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**86.** Why is respiration considered as an exothermic reaction? explain

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**87.** Why are decomposition reactions called opposite of combination reactions? write equations for these reactions

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

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**89.** What is the difference between the displacement and double displacement reaction write equation for these reactions

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

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**91.** What do you mean by precipitation reaction? explain by giving examples

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**92.** Explain the following in terms of gain or loss of oxygen with two examples each: oxidation and reduction

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**93.** A shiny brown coloured element x on heating in air becomes black in colour name the element x and the blacked coloured compound formed

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**94.** Why do we apply paint on iron articles?



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**95.** Oil and fat containing food items are flushed with nitrogen why?



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**96.** Explain the following terms

Element



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**97.** Explain the following terms

Element

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**98.** Write the balanced chemical equations for the following reaction in each case.

Nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773 K to form ammonia gas.

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**99.** Write the balanced chemical equations for the following reaction in each case.

Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

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**100.** Write the chemical equations for the following reaction in each case.

Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated  $H_2SO_4$

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**101.** Write the balanced chemical equations for the following reaction in each case.

Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.



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**102.** Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

Thermit reaction, iron oxide reacts with aluminium and gives molten iron and aluminium oxide.



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**103.** Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.



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**104.** Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.



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**105.** Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

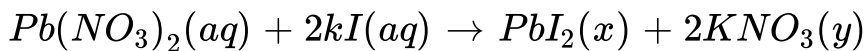
Ethanol is burnt in air to form carbon dioxide water and release heat.



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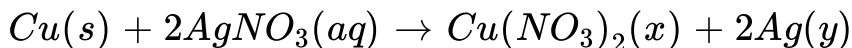


**106.** Complete the missing components variable given as X and Y in the following reactions.



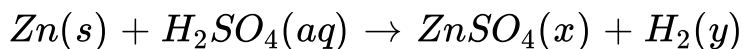
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**107.** Complete the missing components variable given as X and Y in the following reactions.



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**108.** Complete the missing components variable given as X and Y in the following reactions.





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**109.** Complete the missing components variable given as X and Y in the following reactions.



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**110.** Which among the following changes are exothermic or endothermic in nature?

Decomposition of ferrous sulphate



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**111.** Which of the following reaction is endothermic ?



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**112.** Which among the following changes are exothermic or endothermic in nature?

Dissolution of sodium hydroxide in water



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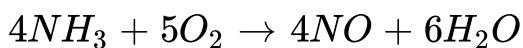
**113.** Which among the following changes are exothermic or endothermic in nature?

Dissolution of ammonium chloride in water.



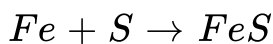
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**114.** Identify the reducing agent in the following reactions



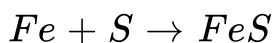
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**115.** Name the substance oxidise, reduced, oxidising agent and reducing agent in the following reactions:



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**116.** Name the substance oxidise, reduced, oxidising agent and reducing agent in the following reactions:



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117. Complete the following reactions:  $4Al + 3O_2 \rightarrow$

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118. Identify the intensive quantities from the following :

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119. Complete the following reactions:  $C_2H_4 + O_2 \rightarrow$

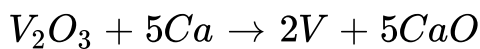
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120. Complete the following reactions:  $C_2H_4 + O_2 \rightarrow$



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**121.** Identify the oxidising agent (oxidant) in the following reactions:

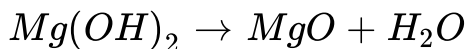


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**122.** Complete the following reactions:  $4Al + 3O_2 \rightarrow$

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**123.** Classify the following reactions



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**124.** Write the balanced equations for the following reaction .

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

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**125.** Write the balanced equations for the following reaction .

`Sodium hydrogen carbonate on reaction with hydrochloric acid gives sodium chloride, water and liberate carbon dioxide.

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**126.** Write the balanced equations for the following reaction .

Copper sulphate on treatment with potassium iodide precipitates cuprous iodide liberate iodine gas and also forms potassium sulphate.

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**127.** A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.

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**128.** The chemical reaction of acetaldehyde and ammonia gives





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**129.** Why do solids have a definite volume ?



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**130.** Under what conditions can the efficiency of a Carnot engine be 100%?



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**131.** Which among the following are physical or chemical changes?

Evaporation of petrol



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**132.** Which among the following are physical or chemical changes?

Burning of Liquefied Petroleum Gas (LPG)

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**133.** Which among the following are physical or chemical changes?

Heating of an iron rod to red hot.

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**134.** Which among the following are physical or chemical changes?

## Burning of Liquefied Petroleum Gas (LPG)

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**135.** Which among the following are physical or chemical changes?

Sublimation of solid ammonium chloride

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**136.** During the reaction of some metals with dilute hydrochloric acid, following observations were made:

Silver metal does not show any change.

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**137.** During the reaction of some metals with dilute hydrochloric acid, following observation were made:

The temperature of the reaction mixture rises when aluminium is added.

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**138.** During the reaction of some metals with dilute hydrochloric acid, following observation were made:

The reaction of sodium metal is found to be highly explosive

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**139.** During the reaction of some metals with dilute hydrochloric acid, following observation were made:

Some bubbles of a gas are seen when lead is reacted with the acid.



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**140.** A substance X, which is an oxide of a group 2 element, is used intensively in the cement industry. This element is presented in bones also. On treatment with water it forms a solution which turns red litmus blue. Identify X and also write the chemical reactions involved.



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**141.** Write a balanced chemical equation for each of the following reactions and also classify them .

Lead acetate solution is treated with dilute hydrochloric acid to form lead chloride and acetic acid solution.

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**142.** Write a balanced chemical equation for each of the following reactions and also classify them .

A piece of sodium metal is added to ethanal to form sodium ethoxide and hydrogen gas.

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**143.** Write a balanced chemical equation for each of the following reactions and also classify them .

Iron oxide on heating with carbon monoxide gas reacts to form solid iron and liberate carbon dioxide gas.



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**144.** Write a balanced chemical equation for each of the following reactions and also classify them .

Hydrogen sulphide gas reacts with oxygen gas to form solids sulphur and liquid water .



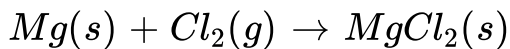
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**145.** Why do we store silver chloride in dark coloured bottles?



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**146.** Balance the following chemical equations and identify the type of chemical reaction:



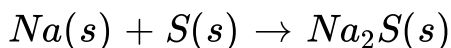
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**147.** The chemical reaction and name are given below: Predict which of these are correct names for the type of reactions.



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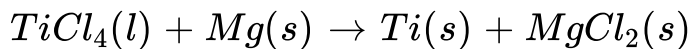
**148.** Balance the following chemical equations and identify the type of chemical reaction:



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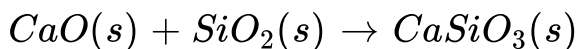


**149.** Balance the following chemical equations and identify the type of chemical reaction:



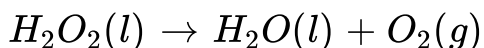
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**150.** Balance the following chemical equations and identify the type of chemical reaction:



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**151.** Balance the following chemical equations and identify the type of chemical reaction:



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**152.** A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of the light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.

Write the chemical formulae of X and Y.

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**153.** A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of the light. Write the chemical equation, when X is dissolved in water.

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**154.** Zinc liberate hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?

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**155.** A silver articles generally turns black when kept in the open for a few days. Why do silver articles turn black when kept in the open for a few days? Name the phenomenon involved.

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**156.** A silver articles generally turns black when kept in the open for a few days.

Name the black substance formed and give its chemical formula.



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**157.** On heating blue coloured powder of copper 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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**158.** On heating blue coloured powder of copper 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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**159.** On heating blue coloured powder of copper 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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**160.** On heating blue coloured powder of copper 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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**161.** Give the characteristic tests for the following gases:  $CO_2$



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162. Give the characteristic tests for the following gases:  $O_2$



[Watch Video Solution](#)

163. Give the characteristic tests for the following gases:  $O_2$



[Watch Video Solution](#)

164. Give the characteristic tests for the following gases:  $H_2$



[Watch Video Solution](#)

165. what happen when a piece of zinc is added to copper sulphate solution?

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166. What happens when a piece of Aluminium metal is added to copper sulphate solution?

Also, write the balanced chemical equation if the reaction occurs

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167. What happens when a piece of sodium metal is added ethanol? Give chemical equation also?

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168. Write the chemical equations when: Zinc reacts with cone.



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169. How will you separate the components of an aqueous solution of sodium chloride ?

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170. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, white precipitate is obtained.

What other name can be given to this precipitation reaction?





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171. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, white precipitate is obtained.

On adding dilute hydrochloric acid to the reaction mixture, white precipitate disappears. Why?



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172. If you are provided with capacitors of smaller capacities, how can you obtain a large capacity from them? Explain.



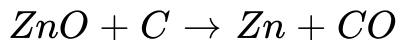
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173. What is oxidation reaction?

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174. Identify in the following reaction:

the substance reduced:



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175. Why is respiration considered as an exothermic reaction?

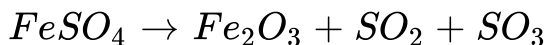
explain

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176. Balance the following equation :  $MnO_2 + HCl \rightarrow MnCl_2 + Cl_2 + H_2O$

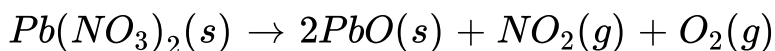
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177. Balance the following chemical equation:



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178. Balance the following chemical equation:



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179. What is the colour of ferrous sulphate crystals? How does this colour change after heating?

 [Watch Video Solution](#)

180. Name the product formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?

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181. Why is the amount of gas collected in one of the test tubes in activity 1.7 double of the amount collected in the other? name this gas.

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**182. What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?**

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**183. What type of reaction is this, when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?**

 [Watch Video Solution](#)

**184. when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube**

Write a balanced chemical equation to represent the above reaction.

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185. What is the colour of the copper sulphate after heating?

 [Watch Video Solution](#)

186. What is the colour of Crystals of copper sulphate ?

 [Watch Video Solution](#)

187. formula of copper sulphate

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188. Crystals of copper sulphate are heated in a test tube for some time.

What is the source of liquid droplets seen on the inner upper side of the test tube during the heating process?

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189. What change in colour is observed when white silver chloride is left exposed to sunlight? State the type of chemical reaction in this change.

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190. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.



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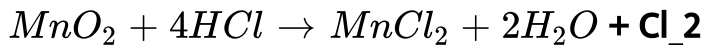
191. Explain the reaction of magnesium ribbon in air.



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192. Identify the substance oxidised and reduced in the chemical reaction:





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193. Write a balanced chemical equation with state symbols for the following reaction : Heated iron metal reacts with steam to iron oxide ( $\text{Fe}_3\text{O}_4$ ) and hydrogen.

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194. What is the colour of ferrous sulphate crystals? How does this colour change after heating?

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195. 2g of ferrrous sulphate crystals wre heated in a hard glass tube and observations recorded:

Identify the liquids droplets collected on the cooler parts of the test tube.

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196. 2g of ferrrous sulphate crystals wre heated in a hard glass tube and observations recorded:

What type of odour is obeserved on heating ferrous sulphate crystals?

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197. 2g of ferrous sulphate crystals were heated in a hard glass tube and observations recorded:

Name the product on heating ferrous sulphate crystals.

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198. 2g of ferrous sulphate crystals were heated in a hard glass tube and observations recorded:

What type of reaction is taking place?

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199. Write word equation and balance equation for the reactions taking place when : dilute hydrochloric acid reacts with magnesium ribbon



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200. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.



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201. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced

chemical equation for the reaction and name the type of reaction.



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202. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.



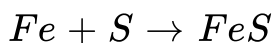
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203. Give an example of a combination reaction which is exothermic.



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204. Name the substance oxidised, reduced, oxidising agent and reducing agent in the following reactions:



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205. Due to which process, there is a change in smell and taste of food items which contain fat and oils?



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



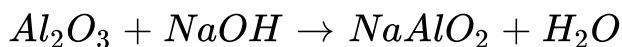
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207. Why do we store silver chloride in dark coloured bottles?



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208. Balanced the chemical equation given below:



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209. Describe an activity to observe what happens when quick lime is added to water taken in a beaker. State important observation and name the type of reaction taking place.



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210. Solid calcium oxide was taken in a container and water was added slowly to it.

Write the balanced chemical equation of this reaction.



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211. Write balanced equation for the following reaction

Natural gas burns in air and combines with oxygen to form carbon dioxide and water.



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212. Write balanced equation for the following reaction

During respiration, glucose combines with oxygen and form



carbon dioxide and water alongwith release of energy.



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213. Giving chemical equation answer the following

What happens when copper is heated in air ?



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214. Giving chemical equation answer the following

What happens when the nitrogen is heated in hydrogen .



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215. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.



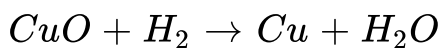
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216. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.



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217. In the reaction :



Name the substance which is



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218. State the kind of chemical reactions in the following examples:

Digestion of food in stomach



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219. State the kind of chemical reactions in the following examples:

Combustion of coal in air



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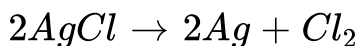
**220. State the kind of chemical reactions in the following examples:**

**Heating of lime stone.**



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**221. Write the essential condition for the following reaction:**

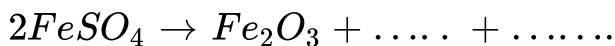


**And write one use of this reaction.**



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222. Complete the following reaction:



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223. Which one of the following is a chemical change.

(i) Burning of wax (ii) melting of wax.



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224. A thin zinc plate was kept in a glass container having  $CuSO_4$  solution. On examining it was found that the blue colour of the solution is getting lighter. After a few days when the zinc plate was taken out of the solution, a number of small

holes were noticed in it. State the reason and write chemical equation of the reaction.

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225. Define balanced chemical equation

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226. Write the balanced chemical equation for the following reactions. sodium + water

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227. Write the balanced chemical equations for each of the following reactions:

Phosphorus burns in chlorine gas to form phosphorus pentachloride.

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228. The burning of natural gas is what type of reaction .

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229. Fill the following sentences with suitable word:

..... is the process of respiration which occurs in the absence of oxygen.

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230. Action of dilute sulphuric acid on zinc granules. Name the gas evolved. How will you test the gas?

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231. What can be seen when strip of copper metal is placed in a solution of silver nitrate?

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232. Why is the amount of gas collected in one of the test tubes in activity 1.7 double of the amount collected in the other? Name this gas.

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233. What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?

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234. Release of heat in a reaction What type of reaction is this?

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235. Write a balanced chemical equation to represent the formation of water

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236. When a green iron salt is heated strongly, its colour finally changes to black and odour of burning sulphur is given out

Name the iron salt.



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237. When a green iron salt is heated strongly, its colour finally changes to black and odour of burning sulphur is given out

Name the type of reaction that takes place during the heating of iron salt.



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**238. State reason for the following :**

**Potato chips manufacture usually flush bags of chips with nitrogen gas.**



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**239. Give reasons for the following:**

**iron is used in constructing bridges and dams.**



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**240. State reason for the following :**

**Food should be kept in air tight containers.**



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241. During electrolysis, hydrogen and oxygen are produced in the ratio by volume

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242. On heating copper powder in air, the surface of copper powder becomes coated with black  $\text{CuO}$ . How can this black be converted into brown copper? Write chemical equation for the reaction that occurs during the colour change.

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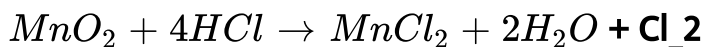
243. State reason for the following :

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



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244. Identify the substance oxidised and reduced in the chemical reaction:



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245. A solution of sodium sulphate in water is electrolysed using inert electrodes, The products at the cathode and anode are respectively.



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246. In the electrolysis of NaCl



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**247. In the electrolysis of NaCl**



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**248. Rahul took some zince granules in a test tube and added dilute HCl to it . He observed that the colour of zinc granules changed to Yellow, Brown , Black or white**

**A. Yellow**

**B. Brown**

**C. black**

**D. white**

**Answer:**



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**249. When a solution of barium chloride in water is added to an aq. solution of sodium sulphate, the following happens:**

- A. a white precipitate is formed**
- B. a red precipitate is formed**
- C. the colour of the solution turns blue**
- D. a pungent smelling gas evolved.**

**Answer:**



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250. On keeping iron nails in copper sulphate solution for 2 hours, the colour of solution changes

- A. from colourless to blue
- B. from light green to blue
- C. from blue to light green
- D. from light green to colourless

Answer:



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251. Iron sulphate crystals on heating show the evolution of gas

- A. turns lime water milky



**B. makes a burning matchstick burn more brightly**

**C. burns with a pop sound**

**D. causes choking and suffocation**

**Answer:**



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**252. When a solution of barium chloride in water is added to an aq. solution of sodium sulphate, the following happens:**

**A. (i)**

**B. (ii)**

**C.**

**D.**

**Answer:**



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**253. A small amount of quick lime is taken in a beaker. Water is added slowly to beaker. What is the observation we noted?**

- A. Hissing sound and the solution becomes hot**
- B. no characteristic sound solution turns cold**
- C. Hissing sound and the solution becomes cold**
- D. No characteristic sound and the solution becomes hot.**

**Answer:**



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254. What happens when we add water to quick lime ?

- A. pop sound and test tube became hot.
- B. cracking sound and test tube became hot
- C. hissibg sound and test tube became hot
- D. hissing sound but test tube became cold

Answer:

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255. Products obtained as a result of double displacement reaction using  $BaCl_2$  and  $Na_2SO_4$  are :

- A.  $BaSO_4$  and NaO
- B.  $BaCL_2$  and  $Na_2SO_4$

C.  $BaSO_4$  and NaCl

D.  $Na_2SO_4$  and NaCl

**Answer:**

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256. Astha added quick lime to water and observed that heat is produced. The kind of this reaction is

A. Endothermic reaction

B.

C. Exothermic reaction

D. endothermic reaction

**Answer:**



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257. On heating crystals of ferrous sulphate, products obtained are:

- A. ferric oxide, sulphur dioxide, Sulphur trioxide
- B. Ferric oxide, ferrous sulphate, Oxygen
- C. ferrous sulphide, Sulphur dioxide, Oxygen
- D. Ferric oxide, Sulphur trioxide, Oxygen

Answer:



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258. Sapna added a strip of Al to 50 mL of a solution of  $FeSO_4$  in a test tube. The correct observation for change in colour of solution by her is. Pale green coloured solution turned blue or Colourless solution turned pale green or Pale green coloured solution remained pale green or Colourless solution turned blue

A. (i) and (ii)

B. (iii) and (iv)

C. (ii) and (iii)

D.

Answer:



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259. Sapna added a strip of Al to 50 mL of a solution of  $FeSO_4$  in a test tube. The correct observation for change in colour of solution by her is. Pale green coloured solution turned blue or Colourless solution turned pale green or Pale green coloured solution remained pale green or Colourless solution turned blue

- A. Pale green coloured solution turned blue
- B. Colourless solution turned pale green
- C. Pale green coloured solution remained pale green
- D. Colourless solution turned blue

Answer:



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260. Shashank was asked to carry out a displacement reaction shows the following:

(i) Formation of colourless solution

Black deposit



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261. In which form zinc metal is used from laboratory to prepare hydrogen?

A. Rod

B. Powder

C. Filling

D. Granules

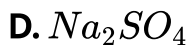
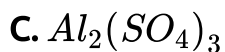
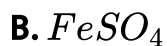
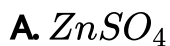


**Answer:**



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**262. Which of the following is coloured?**

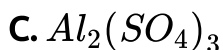
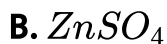
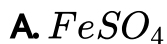


**Answer:**



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263. With respect to aqueous solutions of copper salts, which of the following is correct?



D. Both (b) and ©

Answer:



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264. When a freshly collected Spirogyra filament is kept in a 10% potassium nitrate solution, it is observed that the

protoplasm shrinks in size:

What is this phenomenon called?

- A. Zn rod became thinner
- B. Zn rod became thicker due to iron deposition
- C. Zn rod remains as it was
- D.

Answer:

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265. Solid calcium oxide was taken in a container and water was added slowly to it.

Write the balanced chemical equation of this reaction.

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266. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.



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267. A student performed the experiment of heating ferrous sulphate crystals in a boiling tube. He smell fumes of a pungent gas saw colours of ferrous sulphate disappear  
Write the chemical formula of the pungent gas



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268. A student performed the experiment of heating ferrous sulphate crystals in a boiling tube. He smell fumes of a pungent gas saw colours of ferrous sulphate disappear

Why does the colour of crystals disappear?

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269. A student performed the experiment of heating ferrous sulphate crystals in a boiling tube. He smell fumes of a pungent gas saw colours of ferrous sulphate disappear

Identify the nature of this chemical reaction.

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



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271. A small amount of quick lime is taken in a beaker. Water is added slowly to the beaker. What is the observation we noted?



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272. Give one example of:  
a double displacement reaction.



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273. Consider the activity of heating ferrous sulphate  $FeSO_4 \cdot 7H_2O$  crystals in a test tube. Complete the sentences:

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274. A student expresses an exothermic reaction as:



another student represents the same reaction as :



Tell who is wrong and who is right?

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275. Gold and silver do not corrode in air. Give reasons.

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276. Why are some medicines and chemicals stored in dark coloured bottles?

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277. What chemical compound is used in white washing of walls?

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278. What chemical reactions occurs on the walls after white wash?

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279. Can corrosion of metals be an advantage? Explain with one example.

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280. A water soluble compound 'X' of sodium on reacting with  $\text{dil. H}_2\text{SO}_4$  released a colourless gas accompanied by brisk effervescence. When the gas was passed through water, the solution obtained turned blue litmus solution red. On bubbling the gas through lime water, it initially became milky and the milkiness disappeared when the gas was passed in excess. Identify the substance 'X' and write the chemical equation for the reactions involved.

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281. A brown substance 'A' on heating in air forms a substance 'B'. When hydrogen is passed over heated B, it changes back to A.

Guess the names of substance A and B.



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282. A brown substance 'A' on heating in air forms a substance 'B'. When hydrogen is passed over heated B, it changes back to A.

Write chemical equations for the reactions.



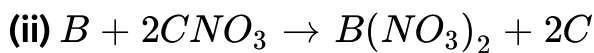
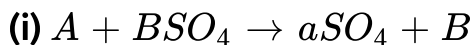
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283. A brown substance 'A' on heating in air forms a substance 'B'. When hydrogen is passed over heated B, it changes back to A.

Name the chemical changes occurring during these processes.

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284. Consider the following reactions :



Arrange the metals A,B,C in the decreasing order of reactivity.

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285. Write the balanced chemical equation for the following reaction and identify the type of reaction . Zinc carbonate (s) → Zinc oxide (s)+Carbon dioxide

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286. What are elementary reactions ? Give an example.

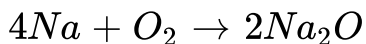
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287. Write the balanced chemical equations for each of the following reactions:

When solid mercury (II) oxide is heated, liquid mercury and oxygen gas are produced.

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288. Select the oxidation and reduction in the reaction:



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289. Express the instantaneous rate of the reaction



In terms of various reactants and products.

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290. Give one example of reaction in which oxidation occurs without involving oxygen.

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291. What are redox reactions?



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292. When a copper strip is placed in a solution of silver nitrate, copper nitrate and silver are formed . Name the reaction.



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293. When magnesium burns in  $\text{Cl}_2$  it form magnesium chloride. Which element is reduced ?



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294. Does an oxidising agent in a redox reaction get reduce or gets oxidised?

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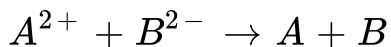
295. What is law of conservation of mass?

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296. Aluminium displace iron from iron oxide( $\text{Fe}_2\text{O}_3$ ) giving iron and aluminium oxide. Which is more reactive aluminium or iron ?

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297. Consider the general reaction:



Name the reducing agent.

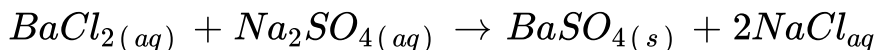
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298. Give one example of :

a double displacement reaction.

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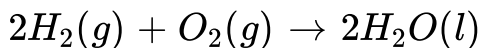
299. The chemical reaction given below represents:



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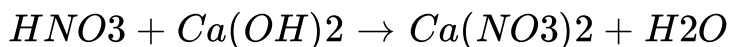


300. identify the type of reaction in the following example



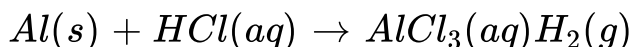
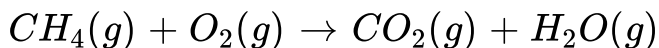
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301. Balance the following chemical equation:



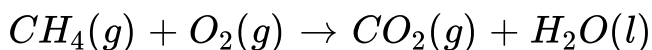
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302. Balance the following equations:



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**303. Balance the following equation :**



**Watch Video Solution**

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



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**305. What is skeletal chemical equation?**



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306. Name three different types of chemicals reactions.

Discuss any one of these with examples.

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307. What type of reaction is combustion of coal and formation of water from  $H_2$  and  $O_2$ ?

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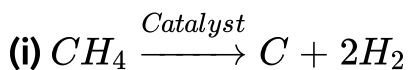
308. How are combination and decomposition reactions related?

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309. What are combination reactions ? Give one example.

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310. Classify the following reactions as combination, decomposition or displacement reactions :



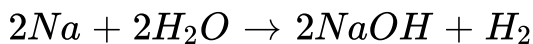
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311. Classify the following reactions as combination, decomposition or displacement reactions :



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**312. Classify the following reactions**



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**313. Classify each of the following reactions**



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**314. Translate the following into the language of chemistry:**

Sulphur dioxide reacts with oxygen at  $450^\circ C$  in the presence of a catalyst ( $V_2O_5$ ) to form sulphur trioxide. The reaction is reversible and 182 kJ of energy is liberated.

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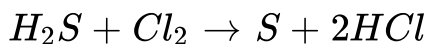
315. Correct and balance the following equation :  $\text{Ca} + \text{H}_2\text{O} \rightarrow$   
 $\text{CaOH} + \text{H}$

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316. Ethane ( $\text{C}_2\text{H}_6$ ) burns in oxygen to form carbon dioxide and water. Write balanced chemical equation for this reaction.

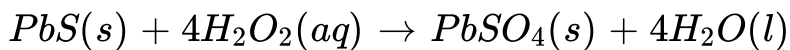
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317. Identify the substance oxidised and oxidising agent in the following reaction:



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318. Predict the oxidising agent and reducing agent in the following reaction:



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319. The reaction:  $Fe^{2+} \rightarrow Fe^{3+} + e^{-}$  is called.....

And the reaction :  $Fe^{3+} + 3e^{-} \rightarrow Fe$  is called.....

Complete the statement.

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320. How are the physical states of reactants and products represented in an equation?

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**321. What are exothermic and endothermic reactions ?**

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**322. Write the balanced chemical equations for each of the following reactions:**

**Aqueous solution of sulphuric acid and sodium hydroxide react to form aqueous solution of sodium sulphate and water.**

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**323. Write the balanced chemical equations for each of the following reactions:**



Phosphorus burns in chlorine gas to form phosphorus pentachloride.

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324. What is the difference between the displacement and double displacement reaction write equation for these reactions

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325. Explain:

Can a displacement reaction be a redox reaction?

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**326. Write a brief note on**

**(i) Corrosion (ii) Rancidity.**

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**327. What is oxidation reaction?**

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**328. Give an example of a combination reaction which is exothermic.**

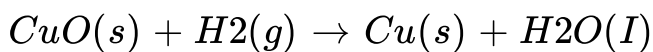
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329. When water is added to a white powder 'A' vigorous reaction takes place and a large amount of heat is released. 'A' is also used for white washing. Identify 'A' write a chemical equation for its reaction with water and name the product.



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330. Identify the substances that are oxidised and the substance that are reduced in the following reaction:



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331. What are decomposition reactions? Give one experiment to demonstrate a decomposition reactions?



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332. What is meant by the term chemical formula?



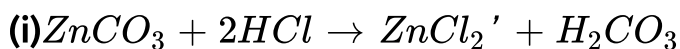
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333. What information does the following equation becomes more informative.  $C + O_2 \text{ gives } CO_2 + \text{heat}$



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334. Identify the chemical reactions in the following:



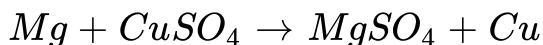
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**335. Classify each of the following reactions**



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**336. Identify the chemical reactions in the following:**



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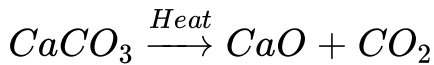
**337. Balance the following equation :  $Ca + H_2O \rightarrow Ca(OH)_2 +$**

**$H_2$**



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338. Identify the type of chemical reactions in the following:



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339. What type of reactions are represented by following equation :  $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$



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340. What happens when carbon dioxide is passed through fresh lime water?



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**341. Explain what happens when (give equation)**

**Silver articles become black after sometime**

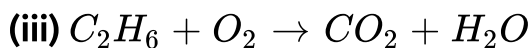
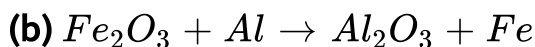
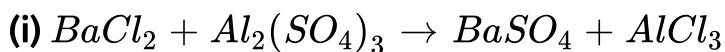
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**342. Explain**

**All displacement reaction are not called double displacement reactions.**

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**343. Balanced the following equations**





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**344. Give an example of decomposition reaction. Describe an activity to illustrate such a reaction by heating.**



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**345. The reaction which two or more substances combine to form a new substance is called.....reaction.**



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**346. Fill in the blanks**

**The reaction which proceed by the evolution of heat is known as .....reaction.**





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**347. Fill in the blanks**

the balancing of chemical equation is in accordance with law of .....



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**348. the reaction in which heat is absorbed is called .....**reaction.



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**349. Food items containing fats and oils give foul smell when left for a long time because of .....**



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**350. Oxidation involves .....of electrons**



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**351. What does a complete chemical equation represent and why is it necessary to balance a chemical equation?**



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**352. How are combination and decomposition reactions related?**



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353. What is the difference between the displacement and double displacement reaction write equation for these reactions



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354. differentiate between exothermic and endothermic reaction.



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355. Explain:

Can a displacement reaction be a redox reaction?



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356. Translate the following statements into chemical equations and then balance these:

(a) Calcium oxide reacts with water to give calcium hydroxide.

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357. Translate the following statement into chemical equation and then balance that.

Hydrogen gas combines with nitrogen to form ammonia.

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358. Translate the following statements into chemical equations and then balance these:

**(C ) Sodium metal react with water to give sodium hydroxide and hydrogen gas.**



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**359. Write a balanced chemical equation with state symbols for the reaction : solution of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.**



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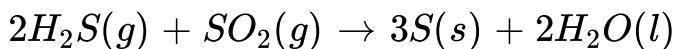
**360. Translate the following statements into chemical equations and then balance these:**

**(e) Magnesium nitrate reacts with water to give magnesium hydroxide and ammonia and oxygen.**



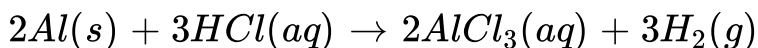
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**361. Name the substance oxidised, reduced, oxidising agent, reducing agent in the following reactions:**



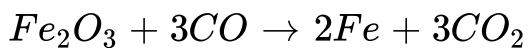
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**362. Name the substance oxidised, reduced, oxidising agent, reducing agent in the following reactions:**



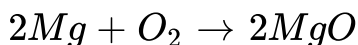
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**363. Name the substance oxidised, reduced, oxidising agent, reducing agent in the following reactions:**



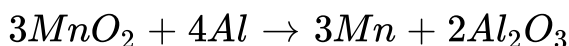
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**364. Name the substance oxidised, reduced, oxidising agent, reducing agent in the following reactions:**



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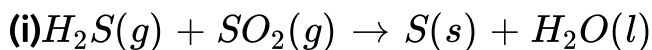
**365. Name the substance oxidised, reduced, oxidising agent, reducing agent in the following reactions:**





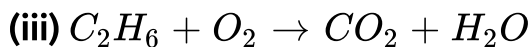
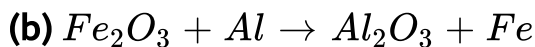
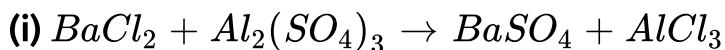
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**366. Balance the following equations.**



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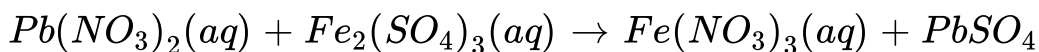
**367. Balanced the following equations**



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**368. Balance the following equations.**



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**369. Which of the following is not a physical change?**

**A. Boiling water to give water vapour**

**B. Melting of ice to give water**

**C. Dissolution of salts in water**

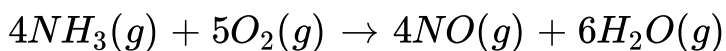
**D. Combustion of LPG**

**Answer: Combustion of Liquefied Petroleum Gas (LPG)**



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370. 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)

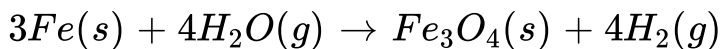
D. (iii) and (iv)

Answer:



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371. Which of the following statements about the given reaction are correct?



(i) Iron metal is getting oxidised (ii) Water is getting reduced

(iii) Water is acting as reducing agent (iv) Water is acting as oxidising agent

A. (i), (ii) and (iii)

B. (iii) and (iv)

C. (i),(ii) and (iv)

D. (ii) and (iv)

Answer:



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**372. 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:**



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373. 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 breakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions containers in beaker A, and B, where in case of beaker C, the temperature of the solution falls. Which one of the following statements(s) is(are) correct?

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

A. (i) only

B. (ii) only

C. (i) and (iv)

**D. (ii) and (iii)**

**Answer:**

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**374. Which of the following is not correct for ideal solution?**

**A.  $KMnO_4$  is an oxidising agent, It oxidises  $FeSO_4$**

**B.  $FeSO_4$  acts as an oxidising agent and oxidises  $KMnO_4$**

**C. The colour disappears due to dilution, no reaction is involved**

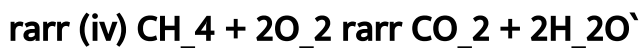
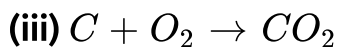
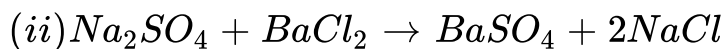
**D.  $KMnO_4$  is unstable compound and decomposes in presence of  $FeSO_4$  to a colourless compound.**

Answer:



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



A. (i) and (iv)

B. (ii) only

C. (i) and (ii)

D. (iii) and (iv)

**Answer:**



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**376. Which among the following statements 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:**

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**377. 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 true about slaking of lime and the solution formed?**

- (i) 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:**



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**378. 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:**

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**379. 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:**



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

**A. Lead sulphate (insoluble)**

**B. Lead acetate**

**C. Ammonium nitrate**

**D. Potassium sulphate**

**Answer:**



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**381. Which gases can be used for storage of fresh sample of an oil for a long time?**

**A. Carbon dioxide or oxygen**

**B. Nitrogen or oxygen**

**C. Carbon dioxide helium**

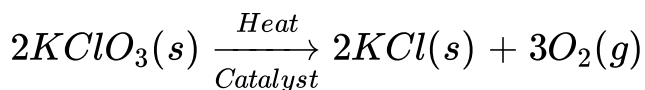
**D. Helium or nitrogen**

**Answer:**



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



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

- A. It is a decompositon 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:**

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**383. 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 china dish in the open**

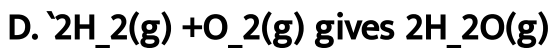
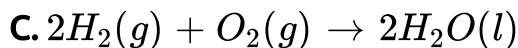
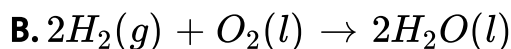
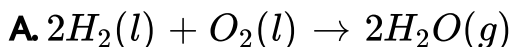
**D. Heating copper wire in presence of air at high temperature**

**Answer:**



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



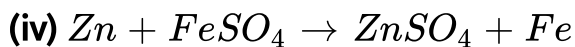
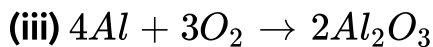
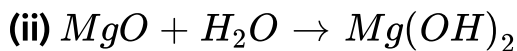
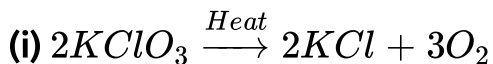
**Answer:**



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**385. Which of the following are combination reactions?**



**A. (i) and (ii)**

**B. (iii) and (iv)**

**C. (ii) and (iv)**

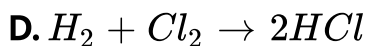
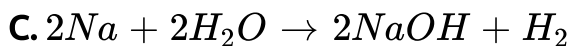
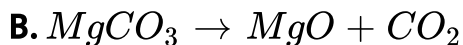
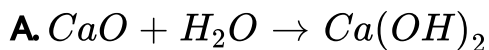
**D. (ii) and (iii)**

**Answer:**



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386. Which of the following is a displacement reaction?

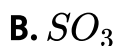
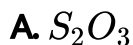


Answer:



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387. The formula of sulphur trioxide is



C.  $SO_2$

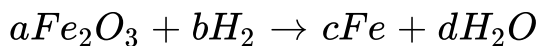
D.  $H_2S$

Answer:



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388. In the balanced equation



The values of a,b,c, and d are respectively

A. 1, 1, 2, 3

B. 1, 1, 1, 1

C. 1, 3, 2, 3

D. 1, 2, 2, 3

**Answer:**



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**389. The process of reduction involves**

**A. removal of hydrogen**

**B. gain of electrons**

**C. addition of oxygen**

**D. loss of electrons**

**Answer:**



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390. Oxidation is a process which involves

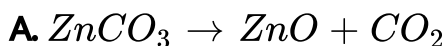
- A. addition of oxygen
- B. addition of hydrogen
- C. gain of electrons
- D. none of these

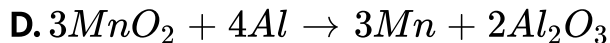
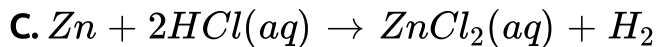
Answer:



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391. Which of the following is a decomposition reaction?

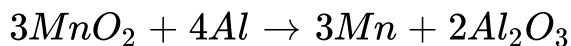




**Answer:**

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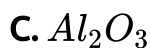
**392. In the reaction**



**the oxidising agent is**



B. Al



D. Mn

**Answer:**



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**393. Which of the following statements is correct?**

- A. Oxidation involves gain electrons**
- B. The substance which gets reduced acts as a reducing agent**
- C. Exothermic reaction proceed with absorption of heat**
- D.  $NaHCO_3$  is sodium bicarbonate.**

**Answer:**



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394. When magnesium ribbon is burnt in air, the ash formed is

A. White

B. green

C. yellow

D. black

Answer:



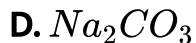
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395. Carbon dioxide turns lime water milky due to the formation of

A.  $MgCO_3$

B.  $CaSO_4$





**Answer:**

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**396. Say which of the following is true and false**

**The process of reduction involves loss of electrons.**

**A. Oxidation**

**B. Reduction**

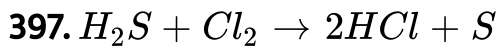
**C. Redox reaction**

**D. both (a) and (b)**

**Answer:**



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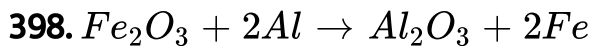
The reaction is interpreted as

- A.  $H_2S$  is getting oxidised and  $Cl_2$  is getting reduced
- B.  $H_2S$  is getting reduced and  $Cl_2$  is getting oxidised
- C. Only  $H_2S$  is oxidised
- D. Both  $H_2S$  and  $Cl_2$  are reduced

Answer:



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The above reaction is an example of a

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

Answer:



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399. Identify the type of chemical reaction taking place in the following:

On heating copper powder in air in a China dish, the surface of copper powder turns black.

- A. Redox reaction
- B. Displacement reaction
- C. Neutralization reaction
- D. Precipitation reaction

Answer:

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400. The chemical reaction :

$HNO_3 + KOH \rightarrow KNO_3 + H_2O$  is an example of

- A. neutralisation

**B. double displacement**

**C. neutralisation and double displacement**

**D. neutralisation and double displacement**

**Answer: combination**



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**401. The formulae of quick lime and limestone are respectively**

**A.  $MgCO_3$ ,  $Mg(OH)_2$**

**B.  $Ca(OH)_2$ ,  $CaCO_3$**

**C.  $CaO$ ,  $CaCO_3$**

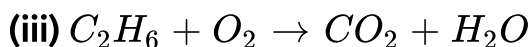
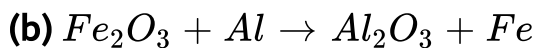
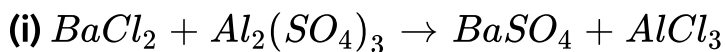
**D.  $CaCO_3$ ,  $CaO$**

Answer:



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402. Balanced the following equations



A. 3,2,2, 3

B. 3, 1, 2, 3

C. 2, 4, 2, 3

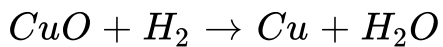
D. 3,1, 3, 2

Answer:



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403. In the reaction :



Name the substance which is

A. CuO

B. Cu

C.  $\text{H}_2$

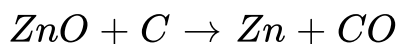
D.  $\text{H}_2\text{O}$

Answer:



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404. Which is reducing agent in the reaction ?



A. C

B. Zn

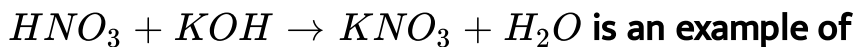
C. CO

D. ZnO

Answer:

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405. The chemical reaction :



A. displacement reaction



**B. combination reaction**

**C. Redox reaction**

**D. decomposition reaction**

**Answer:**



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**406. Which one of the following four metals would be displaced from the solution of its salt by other three metals?**

**A. Mg**

**B. Ag**

**C. Zn**

**D. Cu**

**Answer:**



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**407. Which of the following is not correct for ideal solution?**

- A.  $KMnO_4$  is an oxidizing agent, it oxidizes  $FeSO_4$**
- B.  $FeSO_4$  acts as an oxidizing agent and oxidizes  $KMnO_4$**
- C. The colour disappears due to dilution : no reaction is involved**
- D.  $KMnO_4$  acts as an unstable compound and decomposes in the presence of  $FeSO_4$  to a colourless compound**

**Answer:**



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

A. 1 and 2

B. 2 and 3

C. 1 and 4

D. 3 and 4

**Answer:**



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409. Silver chloride turns grey in sunlight because of its decomposition into

A. silver

B. silver oxide

C. silver and chlorine

D. silver oxide and chlorine

Answer:



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410. In order to prevent spoilage of potato chips, These are packed in plastic bags in an atmosphere of

A.  $H_2$

B.  $N_2$

C.  $CO_2$

D.  $O_2$

Answer:



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411. Which of the following is decomposed by sunlight ?

A.  $CuCl_2$

B.  $(NH_4)_2CO_3$

C.  $AgBr$

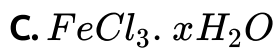
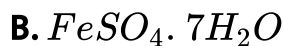
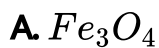
D.  $NaCl$

**Answer:**



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**412. The chemical formula of rust is:**



**Answer:**



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413. Which of the following are exothermic reactions.

(i) Burning of coal (ii) Reaction of water with quick lime (iii) Respiration (iv) Evaporation of water

A. (i), (ii) and (iv)

B. (i) and (ii) only

C. (ii) and (iii) only

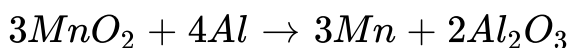
D. (i), (ii) and (iii)

Answer:



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414. In the reaction



the oxidising agent is

A.  $MnO_2$

B. Al

C.  $Al_2O_3$

D. Mn

Answer:



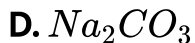
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415. Carbon dioxide turns lime water milky due to the formation of

A.  $MgCO_3$

B.  $CaSO_4$





**Answer:**

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**416. When a solution of barium chloride in water is added to an aq. solution of sodium sulphate, the following happens:**

- A. a white precipitate is formed**
- B. a red precipitate is formed**
- C. the colour of the solution turns blue**
- D. a pungent smelling gas is evolved.**

**Answer:**



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417. Formalin is a 40% aqueous solution of : Methanol, Ethanol, Methanal, Ethanal.

A. NaCl

B.  $BaCl_2$

C.  $Na_2SO_4$

D.  $CuSO_4$

Answer:



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418. The removal of oxygen from a substance is called

**A. Corrosion**

**B. oxidation**

**C. reduction**

**D. rancidity**

**Answer:**



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**419. The process of respiration is**

**A. a reduction and exothermic reaction**

**B. an oxidation and exothermic reaction**

**C. a combination and exothermic reaction**

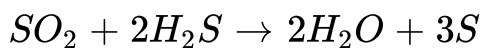
**D. an oxidation and endothermic reaction**

**Answer:**



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**420. In the reaction:**



**Which of the following statement is true?**

**A.  $SO_2$  is reduced**

**B.  $H_2S$  is oxidised**

**C.  $SO_2$  is oxidised**

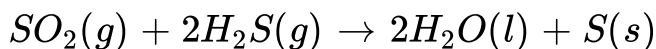
**D. Both (a) and (b)**

**Answer:**



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421. In the reaction,



the reducing agents is

A.  $SO_2$

B.  $H_2O$

C.  $H_2S$

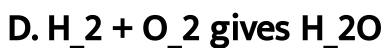
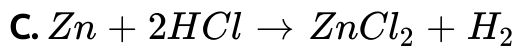
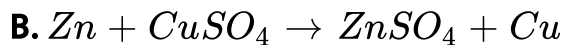
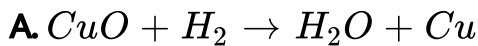
D. S

Answer:



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422. Which of the following is not an example of single displacement reaction?

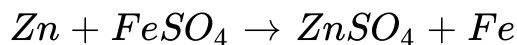


Answer:



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423. In the reaction :



A. zinc gets oxidised

B. Zn gets reduced

C. Fe gets oxidised

**D. Zn and Fe both get oxidised**

**Answer:**

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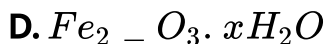
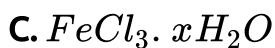
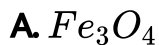
**424. When in the blue solution of copper sulphate, Zinc strip is dipped, after some time colour changes to:**

- A. Pink**
- B. Green**
- C. Colourless**
- D. Remains blue**

**Answer:**

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425. The chemical formula of rust is:

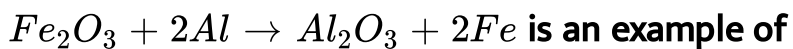


Answer:



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426. The reaction :





**A. decomposition reaction**

**B. Displacement reaction**

**C. combination reaction**

**D. double displacement reaction**

**Answer:**



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**427. Which of the following are exothermic reactions.**

**(i) Burning of coal (ii) Reaction of water with quick lime (iii)**

**Respiration (iv) Evaporation of water**

**A. (i), (ii) and (iv)**

**B. (i) and (ii) only**

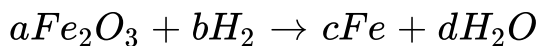
C. (ii) and (iii) only

D. (i), (ii) and (iii)

Answer:

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428. In the balanced equation



The values of a,b,c, and d are respectively

A. 1,1,2,3

B. 1,1,1,1

C. 1,3,2,3

D. 1,2,2,3

**Answer:**



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**429. The process of reduction involves**

**A. removal of hydrogen**

**B. gain of electrons**

**C. addition of oxygen**

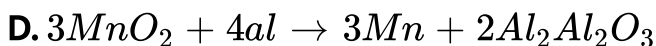
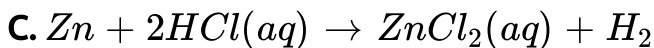
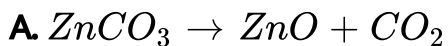
**D. loss of electrons**

**Answer:**



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430. Which of the following is a decomposition reaction?

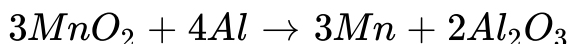


Answer:

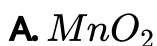


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431. In the reaction



the oxidising agent is



**B. Al**

**C.  $Al_2O_3$**

**D. Mn**

**Answer:**



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**432. Carbon dioxide turns lime water milky due to the formation of**

**A.  $MgCO_3$**

**B.  $CaSO_4$**

**C.  $CaCO_3$**

**D.  $Na_2CO_3$**

**Answer:**



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**433. The formulae of quick lime and limestone are respectively**

- A. a white precipitate is formed**
- B. a red precipitate is formed**
- C. the colour of the solution turns blue**
- D. a pungent smelling gas is evolved.**

**Answer:**



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434. Say True or false

Keeping food in air tight containers helps to slow down oxidation of the food.

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435. Say True or false

Copper sulphate solution can be stored in iron pot.

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436. Say True or false

Ferrous sulphate on heating gives both  $SO_2$  and  $SO_3$ .

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437. Say True or false

Burning of natural gas is an exothermic reaction.

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438. Decomposition of vegetable matter into compost is an example of

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439. Fill in the blanks

Exposing silver bromide to sunlight is photochemical.....reaction

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#### 440. Fill in the blanks

On heating copper powder it turns.....

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#### 441. Fill in the blanks

The reaction :  $CaO + SiO \rightarrow CaSiO_3$  is an example of  
..... reaction.

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#### 442. Fill in the blanks

In the reaction :  $Fe_2O_3 + 2Al \rightarrow 2Fe + Al_2O_3$ ,  $Fe_2O_3$   
is..... Agent.

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**443. Fill in the blanks**

the chemical formula of Nitric acid is .....

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**444. Why is respiration considered as an exothermic reaction?**

explain

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**445. Give an example of a photochemical reaction**

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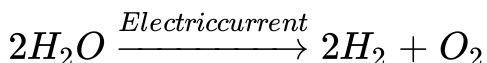
446. Oil and fat containing food items are flushed with nitrogen why?

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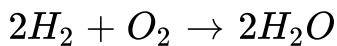
447. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.

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448. Name the type of reactions. By passing electric current through water,  $H_2$  and  $O_2$  are obtained as



But  $H_2$  and  $O_2$  can also be combined to form water

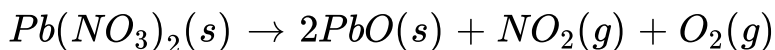


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449. What is the difference between the displacement and double displacement reaction write equation for these reactions

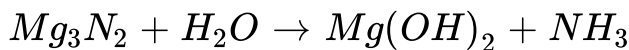
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450. Balance the following chemical equation:



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451. Balance the following chemical equations:



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452. When water is added to a white powder 'A' vigorous reaction takes place and a large amount of heat is released. 'A' is also used for white washing. Identify 'A' write a chemical equation for its reaction with water and name the product.

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453. Consider the activity of heating ferrous sulphate  $FeSO_4 \cdot 7H_2O$  crystals in a test tube. Complete the sentences:

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454. differentiate between exothermic and endothermic reaction.

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455. What is the difference between Combination and decomposition reactions.

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456. Write balanced chemical equation and identify the type of chemical reaction taking place when:

Barium Chloride solution is mixed with copper sulphate solution and a white precipitate is observed.



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457. Write balanced chemical equation and identify the type of chemical reaction taking place when:

On heating copper powder in air in a china dish, the surface of copper powder turns black.



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458. Write balanced chemical equation and identify the type of chemical reaction taking place when:

Zinc metal reacts with aqueous hydrochloric acid to produce a solution of zinc chloride and hydrogen gas.



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**459. Write balanced chemical equation and identify the type of chemical reaction taking place when:**

**Iron nails dipped in blue copper sulphate solution become brownish in colour and the blue colour of copper sulphate fades away.**



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**460. Write balanced chemical equation and identify the type of chemical reaction taking place when:**

**Quick lime reacts vigorously with water releasing a large amount of heat.**



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461. 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:**



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462. 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:



463. Rahul took some zinc granules in a test tube and added dilute HCl to it . He observed that the colour of zinc granules changed to Yellow, Brown , Black or white

A. Yellow

B. brown

C. black

D. white

Answer:



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464. Carbon dioxide turns lime water milky due to the formation of

- A. Calcium bicarbonate
- B. Calcium carbonate
- C. Magnesium carbonate
- D. Calcium hydroxide

Answer:



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465. Solid calcium oxide was taken in a container and water was added slowly to it.

Write the balanced chemical equation of this reaction.

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**466. Crystals copper sulphate are heated in a test tube for some time.**

**What is the colour of copper sulphate crystals**

**(i) before heating and (ii) after heating.**

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**467. Crystals of copper sulphate are heated in a test tube for some time.**

**What is the source of liquid droplets seen on the inner upper side of the test tube during the heating process?**

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## Exercise

1. Translate the following statements into chemical equation and balance the equations : aluminium metal replaces iron from ferric oxide ( $\text{Fe}_2\text{O}_3$ ) giving aluminium oxide and iron.

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2. Translate the following statements into chemical equation and balance the equations : phosphorous burns in oxygen to give phosphorous pentaoxide.

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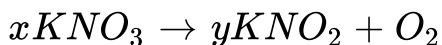
3. Translate the following statements into chemical equation and balance the equations : carbon disulphide burns in air to give carbon dioxide and sulphur dioxide.

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4. Translate the following statements into chemical equation and balance the equations : hydrogen sulphide gas burns in air to give water and sulphur dioxide.

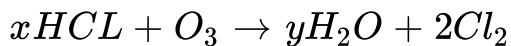
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5. Give the values of  $x$  and  $y$  by balancing.



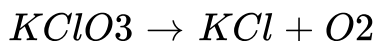
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6. Give the values of x and y by balancing.



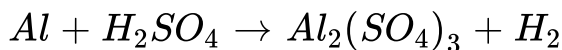
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7. Balance the following chemical equation:



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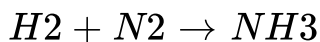
8. Balance the following equations:



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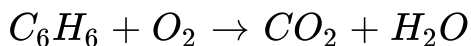


9. Balance the following chemical equation:



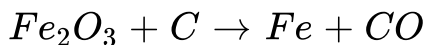
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10. Balance the following equations:



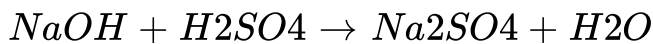
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11. Balance the following equations:



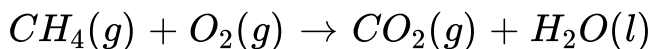
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12. Balance the following chemical equation:



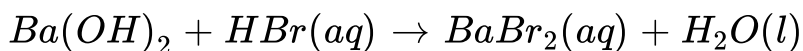
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13. Balance the following equation :



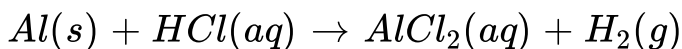
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14. Balance the following equation :



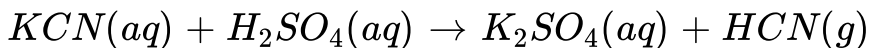
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15. Balance the following equation :



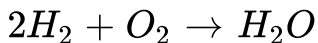
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16. Balance the following equation :



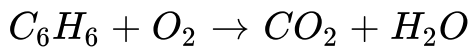
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17. Which of the following are balanced equations:



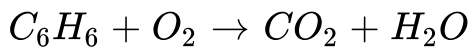
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18. Balance the following equations:



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19. Balance the following equations:



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20. Which of the following equations are balanced?

2HgO gives 2Hg + Oxygen molecule



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**21. Complete the statements:**

**Balanced chemical equations satisfy the law of .....**

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**22. Complete the statements:**

**A solution prepared in water is known as .....**

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**23. How will you indicate the following effects in the chemical equation:**

**Formation of a precipate**

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24. How will you indicate the following effects in the chemical equation:

Evolution of a gas.



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25. What does the symbol (aq) represent in a chemical equation ?



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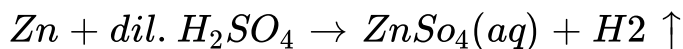
26. What is wrong with the following equations:

$\text{Mg} + 2\text{O} \text{ gives } 2\text{MgO}$



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27. What does  $\uparrow$  represent in the following equation:



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28. State which of the following chemical formula for the compounds are correct?

Sodium sulphide :  $\text{Na}_4\text{S}$

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29. State which of the following chemical formula for the compounds are correct?

Aluminum phosphate :  $\text{Al}_3(\text{PO}_4)_2$

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30. State which of the following chemical formula for the compounds are correct?

Silver carbonate :  $AgCO_3$

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31. State which of the following chemical formula for the compounds are correct?

Ammonium bicarbonate :  $NH_4HCO_3$

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32. State which of the following chemical formula for the compounds are correct?



Copper sulphate :  $CuSO_4$

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33. State which of the following statement are true or false:

All combustion reactions are endothermic reactions

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34. State which of the following statement are true or false:

$3Mg + N_2 + 6H_2O$  gives  $3Mg(OH)_2 + 2NH_3$  is a balanced equation.

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**35. Write the balanced chemical equations for each of the following reactions:**

**When solid mercury (II) oxide is heated, liquid mercury and oxygen gas are produced.**

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**36. State any two characteristics of the following chemical equation.**

**dilute sulphuric acid is added to zinc granules in a test tube.**

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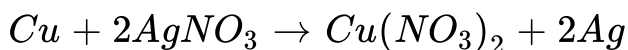
**37. State characteristics of the following chemical equation.**

**potassium iodide solution is mixed with lead nitrate solution.**



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**38. Classify the following reactions**



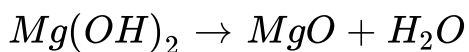
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**39. Balance the following equation :  $Ca + H_2O \rightarrow Ca(OH)_2 + H_2$**



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**40. Classify the following reactions**



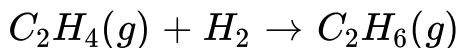
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**41. Classify the following reactions**



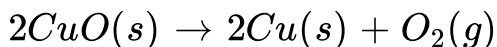
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**42. Classify the following reactions as**



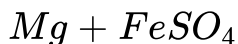
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**43. Classify each of the following reactions**



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44. Complete chemical reaction Predict correct names for the type of reactions.



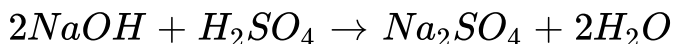
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45. The chemical reaction and name are given below: Predict which of these are correct names for the type of reactions.



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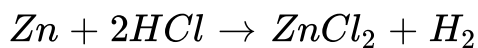
46. The chemical reaction and name are given below: Predict which of these are correct names for the type of reactions.



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47. The chemical reaction and name are given below: Predict which of these are correct names for the type of reactions.



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48. Give two examples of decompositon reaction.



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49. Give one example of :

a double displacement reaction.



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50. Give one example of :

a combination reaction between element and compound



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51. Which of the following metals will change blue colour of copper sulphate solution ?

A. Platinum

B. silver

C. Magnesium

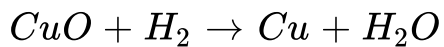
D. Iron

Answer:



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52. In the reaction :



Name the substance which is

- A. oxidised
- B. reduced
- C. oxidising agent
- D. reducing agent

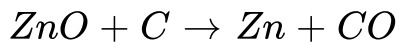
Answer:



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53. Which of the following are oxidising agent in the following reactions?

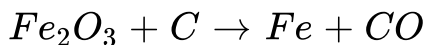


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54. Which of the following is the strongest oxidizing agent?

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55. Balance the following equations:

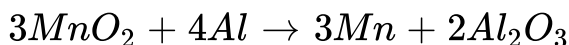


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56. Which of the following is redox reaction ?

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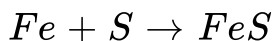
57. Consider the reaction



Does aluminium act as an oxidising or reducing agent in this reaction ?

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58. Name the substance oxidise, reduced, oxidising agent and reducing agent in the following reactions:



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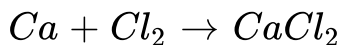
59. Define oxidising agent and reducing agent on the basis of oxidation number concept.

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60. Define oxidising agent and reducing agent on the basis of oxidation number concept.

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61. Name the substance oxidise, reduced.



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62. Complete the statements:

They change of odour and flavour of oily and fatty food is called..... .

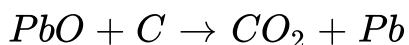
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63. Complete the statements:

Reduction is a process which involves..... of electrons.

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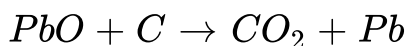
64. Consider the reaction :



Name the reaction

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**65. Consider the reaction :**

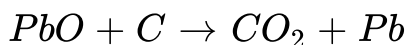


**Balance the equation.**



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**66. Consider the reaction :**

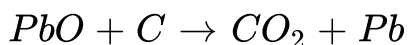


**Name the substance reduced.**



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**67. Consider the reaction :**

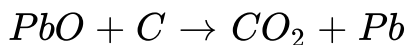


**Name the reducing agent**



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**68. Consider the reaction :**



**Name the reaction**



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**69. Which type of chemical reactions take place when**

**Limestone is heated.**



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**70. Which type of chemical reactions take place when**

**chlorine displace bromine from potassium bromide solution.**



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**71. Which type of chemical reactions take place when Magnesium wire is burnt in air**



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**72. Which type of chemical reactions take place when Limestone is heated.**



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**73. Which type of chemical reactions take place when White precipitate of silver chloride is formed when silver nitrate is added to sodium chloride solution.**



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**74. Give one example of :  
a double displacement reaction.**



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**75. Give one example of  
A displacement reaction.**



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**76. What is reduction reaction?**



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77. Draw a labelled diagram of a neuron.

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78. Draw a labelled diagram of a.c.generator.

 [Watch Video Solution](#)

79. Draw a labelled diagram of a neuron.

 [Watch Video Solution](#)

80. Consider the activity of heating ferrous sulphate  $FeSO_4 \cdot 7H_2O$  crystals in a test tube. Complete the sentences:



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81. Match the reaction in column A with the type in Column B.

Column A	Column B
(i) $2\text{Cu}(\text{NO}_3)_2 \longrightarrow 2\text{CuO} + 4\text{NO}_2 + \text{O}_2$	(a) displacement reaction
(ii) $\text{Zn} + \text{H}_2\text{SO}_4(\text{dil.}) \longrightarrow \text{ZnSO}_4 + \text{H}_2$	(b) combination reaction
(iii) $\text{CaO} + \text{H}_2\text{O} \longrightarrow \text{Ca}(\text{OH})_2$	(c) double displacement reaction
(iv) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \longrightarrow \text{BaSO}_4 + 2\text{NaCl}$	(d) photochemical decomposition reaction
(v) $2\text{AgBr} \xrightarrow{\text{Sunlight}} 2\text{Ag} + \text{Br}_2$	(e) decomposition reaction.



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82. What happens when dil  $\text{H}_2\text{SO}_4$  is added to a small amount of sodium carbonate taken in a test tube?



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83. What is meant by exothermic and endothermic reaction?

Give examples



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84. Aluminium displace iron from iron oxide( $\text{Fe}_2\text{O}_3$ ) giving iron and aluminium oxide. Which is more reactive aluminium or iron ?



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85. Which gases are evolved at anode and cathode on the electrolysis of water?



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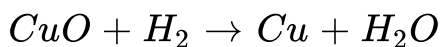
86. Explain the reactivity series of metals



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87. In the reaction :



Name the substance which is



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88. What is meant by measurement ?



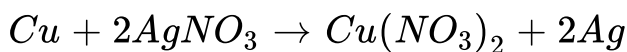
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89. Define oxidation and reduction on the basis of electronic with examples.



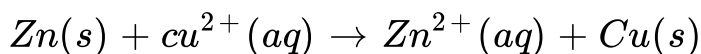
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90. Classify the following reactions



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91. Consider the following reactions:



With reference to the above reaction which one of the following is correct statement:

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92. Which gas is evolved on heating calcium carbonate?

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93. Which gases are evolved on heating ferrous sulphate?

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94. What is the formula of quick lime?

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95. Determine which substance is the best reducing agent

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96. Identify the type of chemical reaction taking place in the following:

On heating copper powder in air in a China dish, the surface of copper powder turns black.



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97. What is oxidation reaction?



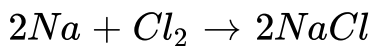
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98. When a strip of copper is placed in the solution of silver nitrate, the solution become blue. Why ?



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99. Name the oxidising agent in the reaction.



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100. Give an example of a photochemical reaction

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101. What is reduction reaction?

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102. Why do we apply paint on iron articles?

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103. Write a reaction when silver chloride exposed to light.

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104. What is the colour of  $NO_2$  gas?

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105. Which gas is evolved on heating calcium carbonate?

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106. Name the gas obtained when dil.  $\text{H}_2\text{SO}_4$  is added to a zinc piece.

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107. What is the colour of coating of copper oxide?

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108. When iron is heated with sulphur, iron sulphide is formed.

What is the reaction called?

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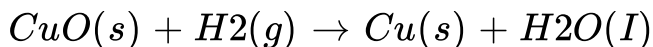
109. What is the colour of residue left when ferrous sulphate is heated?

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110. Use of electrolysis is in:

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111. Identify the substances that are oxidised and the substance that are reduced in the following reaction:



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112. What is the colour of product formed when barium chloride solution is added to sodium sulphate solution?

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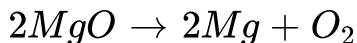
113. Say which of the following is true and false

There is no need to balance elementary gas in an equation

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114. Say which of the following is true and false

The reverse of the reaction:



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115. Say which of the following is true and false

The reaction :  $2H_2O + Heat \rightarrow 2H_2 + O_2$  is an exothermic reaction.

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116. Say which of the following is true and false

The equation :

$2Al(OH)_3 + 3H_2SO_4$  gives  $Al_2(SO_4)_3 + 12H_2O$  is a balance equation

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117. Say which of the following is true and false

Reduction is a process which involve loss of hydrogen.

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**118. Say which of the following is true and false**

**Oxidation involve loss of oxygen.**

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**119. Say which of the following is true and false**

**The substance which gets oxidised acts as reducing agent.**

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**120. Say which of the following is true and false**

**Fats and oil are oxidised acts as reducing agent.**

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**121. Say which of the following is true and false**

**Double displacement reaction is opposite of displacement reaction.**

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**122. Say which of the following is true and false**

**green coating on copper is due to the formation of copper carbonate.**

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**123. State which of the following chemical formula for the compounds are correct?**

Aluminum phosphate :  $Al_3(PO_4)_2$



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124. Say which of the following is true and false

The process of reduction involves loss of electrons.



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125. Say which of the following is true and false

Oxidation reaction occurs only in the presence of reduction reaction.



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**126. Say which of the following is true and false**

**Combustion of liquidified petroleum gas is a physical change.**



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**127. Say which of the following is true and false**

**Exposure of silver chloride to sunlight for a long periods turns grey**



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**128. Say which of the following is true and false**

**oxidation of silver chloride by light turns it grey**



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129. Say which of the following is true and false

Evaporation of water is an endothermic reaction .

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130. Say which of the following is true and false

The chemical formula of chromium chloride and chromium sulphate are  $CrCl_3$  and  $Cr_2(SO_4)_3$  respectively.

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131. Say which of the following is true and false

The formula of slaked lime is  $(Ca(OH)_2)$ .

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132. Which of the following statements is false?

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133. What is the formula of quick lime?

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134. The colour of  $CuSO_4 \cdot 5H_2O$  is .....

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135. the reaction in which heat is absorbed is called .....reaction.

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136. Oxidation involves .....of electrons

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137. The reaction which two or more substances combine to form a new substance is called.....reaction.

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138. Complete the statements:

Balanced chemical equations satisfy the law of .....

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139. Food items containing fats and oils give a foul smell when left for a long time because of .....

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140. The reactions in which there is an exchange of ions between the reactants are called

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141. In the reaction  $ZnO + C \rightarrow Zn + CO$  carbon balance the equation

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