



## CHEMISTRY

# BOOKS - CHETANA CHEMISTRY (MARATHI ENGLISH)

## Chemical Reactions and equations

### Exercise

1. The reaction  $CaCO_3 \rightarrow CaO + CO_2$  is a \_\_\_\_\_

A. displacement

B. decomposition

C. combination

D. double displacement

**Answer:**



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2. The reaction in which oxygen is added to the substance is called \_\_\_ reaction.

A. reduction

B. neutralisation

C. oxidation

D. precipitation

**Answer:**



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**3.** The chemical reaction in which heat is absorbed is called \_\_\_ reaction.

A. endothermic

B. oxidation

C. reduction

D. exothermic

**Answer:**



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4. The reaction of a vegetable oil with hydrogen gas takes place in the vanspati ghee .

A. Iron

B. Copper

C. Cobalt

D. Nickel

**Answer:**



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5. The reaction in which heat is given out along with products is known as \_\_\_ reaction .

A. endothermic

B. oxidation

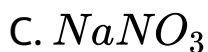
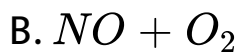
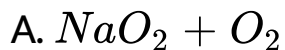
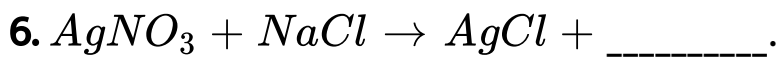
C. reduction

D. exothermic

**Answer:**



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**Answer:**

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7. Rancidity in the food stuff cooked in oil or ghee is prevented by using\_\_\_\_\_.

A. water

B. salt

C. antioxidant

D. anti-rust

**Answer:**



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8. When acids and alkalis react together, \_\_\_\_\_ and \_\_\_\_\_ is formed .

A. sugar,water

B. Water,salt

C. salt,sugar

D. salt water

**Answer:**



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9. Double displacement reaction in which an insoluble salt is formed is also called \_\_\_ reaction

A. precipitation

B. neutralisation

C. sublimation

D. calcination

**Answer:**



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10. A chemical reaction involves \_\_.

- A. only breaking of bonds.
- B. only formation of bonds
- C. both breaking and formation of bonds
- D. none of these

**Answer:**



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**11.** A balanced chemical equation always obeys \_\_\_.

- A. law of conservation of mass
- B. law of thermal equilibrium

C. law of conservation of energy

D. all of the above

**Answer:**



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12. Oily food kept out for few days gives a bad taste and a bad smell because of \_\_\_\_\_.

A. corrosion

B. displacement

C. heating

D. rancidity

**Answer:**



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**13.** The sign  $\downarrow$  indicates

- A. Release of gas
- B. dissolution of gas
- C. Formation of precipitate
- D. Lowering of temperature

**Answer:**



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14. What is rust ?

A. sodium oxide

B. Iron oxide

C. Copper oxide

D. Silver oxide

**Answer:**



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15. Because of the formation of which of the following lime water turns milky when carbon dioxide is passed through it ?

- A. Calcium Carbonate
- B. Calcium bicarbonate
- C. Calcium hydroxide
- D. Sodium Carbonate

**Answer:**



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16. Which of the following is formed when Sodium hydroxide reacts with hydrochloric acid?

- A. Calcium chloride
- B. hydrogen chloride
- C. sodium hydroxide
- D. sodium chloride

**Answer:**



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17. \_\_\_ is a physical change .

A. ice a physical change

B. milk is set into curd

C. ripening of fruit

D. respiration process

**Answer:**



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**18.** When sulphuric acid is poured over zinc, which of the following gas is formed?

A. sulphur dioxide



B. hydrogen

C. oxygen

D. zinc dioxide

**Answer:**



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**19.** Heating of sugar is called a \_\_\_ reaction

A. combination reaction

B. Displacement reaction

C. double displacement reaction

D. decomposition reaction

**Answer:**



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**20.** Antioxidants are used to prevent \_\_\_ of food containing fats and oils.

A. reduction

B. oxidation

C. oxidation and reduction

D. decomposition

**Answer:**



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21. In the reaction given  
 $\text{CuO (s)} + \text{H}_2(\text{g}) \rightarrow \text{Cu (s)} + \text{H}_2\text{O (l)}$  copper oxide is  
\_\_\_\_\_ and hydrogen is \_\_\_\_\_

- A. oxidized, reduced
- B. reduced, oxidized
- C. Unaffected, reduced
- D. unaffected, oxidized

**Answer:**



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**22.** The reaction of a vegetable oil with hydrogen gas takes place in the vanspati ghee .

A. Iron

B. Copper

C. Copper

D. Nickel

**Answer:**





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23. A chemical reaction involves \_\_.

- A. only breaking of bonds.
- B. only formation of bonds
- C. both breaking and formation of bonds
- D. non of these

**Answer:**



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24. Complete the following reaction and name the products.  $\text{CuSO}_4(\text{aq}) + \text{Fe}(\text{aq}) \rightarrow \text{_____} + \text{_____}$ .

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25. State the true false statements

Unlike physical changes, chemical changes cannot be easily reversed.

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26. Give scientific reasons

When the gas formed on heating limestone is

passed through freshly prepared lime water, the lime water turns milky.



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**27.** Give scientific reasons

Shelf life period of fruits and vegetables increases when kept in refrigerator.



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**28.** What is the reaction called when oxidation and reduction take place simultaneously? Explain with

one example.



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**29.** Explain what happens when following reactions take place and give the balanced chemical equations.

Iron sulphate reacts with sulphuric acid.



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**30.** Explain the types of reaction with reference to oxygen and hydrogen. Illustrate with example



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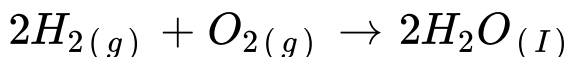


31. What is rancidity? Mention only two ways by which rancidity can be prevented.



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32. Identify the type of reaction



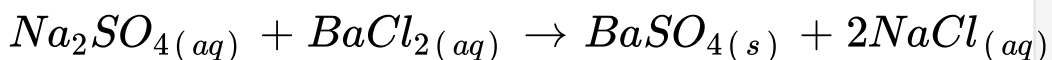
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33. Name the factors on which the speed of a chemical reaction depends



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34. Identify the type of reaction



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35. What is corrosion? Do gold ornaments corrode?

Justify your answer



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Example

# 1. Match the columns:

Reactants	Products	Types of Reaction
(1) Fe + S	(a) NaCl + H <sub>2</sub> O	(i) Oxidation
(2) CuSO <sub>4</sub> + Zn	(b) 2CuO	(ii) Neutralization
(3) 2Cu + O <sub>2</sub>	(c) ZnSO <sub>4</sub> + Cu	(iii) Displacement
(4) HCl + NaOH	(d) FeS	(iv) Combination



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## 2. Match the columns:

Reactants	Products	Types of Reaction
(1) $\text{BaCl}_{2(aq)} + \text{ZnSO}_{4(aq)}$	(a) $\text{H}_2\text{CO}_{3(aq)}$	(i) Displacement
(2) $2 \text{AgCl}_{(s)}$	(b) $\text{FeSO}_{4(aq)} + \text{Cu}_{(s)}$	(ii) Combination
(3) $\text{CuSO}_{4(aq)} + \text{Fe}_{(s)}$	(c) $\text{BaSO}_4 \downarrow + \text{ZnCl}_{2(aq)}$	(iii) Decomposition
(4) $\text{H}_2\text{O}_{(l)} + \text{CO}_{2(g)}$	(d) $2\text{Ag}(s) + \text{Cl}_{2(g)}$	(iv) Double displacement



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### 3. Match the columns:

Column A	Column B
(1) Heating of Potassium Chlorate	(a) Turns lime water milky
(2) Depositing a layer of zinc on iron	(b) Physical change
(3) Souring of milk	(c) Rust
(4) Carbon dioxide	(d) $\text{MnO}_2$ is used as catalyst
(5) Iron oxide	(e) Chemical change
(6) Dissolving common salt in water	(f) Galvanisation



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### 4. State the true false statemets

Digestion food is a chemical change.



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### 5. State the true false statemets

A catalyst slows down the rate of reaction to make a better product .



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### 6. State the true false statements

Reaction that releases energy is called endothermic.



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7. State the true false statements

Ammonium chloride is a sublimable salt

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8. State the true false statements

Rusting of iron is an oxidation reaction

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9. State the true false statements

Size of the particles of reactants does not affect the rate of chemical reaction.



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## 10. State the true false statements

Combustion is the rapid reaction between carbon dioxide and fuel



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## 11. State the true false statements

A precipitate is an insoluble solid formed from solution during a chemical reaction .



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## 12. State the true false statements

A chemical equation shows a chemical reaction using symbols and chemical formulae instead of words.



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## 13. State the true false statemets

Decomposition of compost is an endothermic reaction



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#### 14. State the true false statements

Unlike physical changes, chemical changes cannot be easily reversed.



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#### 15. State the true false statements

A burning of match stick is an example of chemical change.



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**16.** State the true false statements

The reaction  $\text{Zn}_{(s)} + \text{CuSO}_{4(aq)} \rightarrow \text{ZnSO}_{4(aq)} + \text{Cu}_{(s)}$  is an example of double displacement reaction



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**17.** State the true false statements

Chemical change is a temporary change .



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**18.** State the true false statements

(g) indicates the physical state of a substance as

solid



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**19.** State the true false statements

Conversion of quick lime into slaked lime is an example of displacement reaction.



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**20.** State the true false statements

Calcium oxide is also called lime or quicklime.



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## 21. State the true false statements

In a chemical equation, the symbol  $\downarrow$  is used to denote precipitation formation.

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22. A change that takes place due to change in the parameters such as temperature, pressure

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**23.** A process in which some substance undergo bond breaking and are transformed into new substances by formation of new bonds

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**24.** Representation of a chemical reaction in a condensed form using chemical formulae.

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**25.** If the number of atoms of each element is not same on the two sides of an equation.



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26. The substance in whose presence the rate of a chemical reaction change without causing any chemical change to it



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27. The life on earth is protected form ultraviolet radiation of the sun.



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28. What is a balanced chemical equation?

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29. "We need to balance an unbalanced skeletal chemical equation". Justify the statement .

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30. Giving an example list two information which make a chemical equation more useful (informative)

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**31.** What type of reaction takes place when vegetable matter is converted to compost?

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**32.** What is rust? Write the chemical formula .

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**33.** why respiration is considered an exothermic reaction?

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**34.** Name the factors on which the speed of a chemical reaction depends

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**35.** What is meant by reactants?

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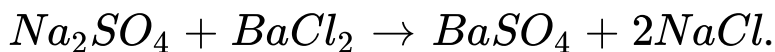
**36.** What is meant by the term products of a chemical reaction?

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37. When carbon dioxide is passed through lime water it turns milky. Why?

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38. What type of precipitate reaction is this



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39. What do you understand by precipitation reaction? Explain with examples.

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40. Which solution is used in voters ink?

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41. What happens when a piece of zinc metal is added to copper sulphate solution?

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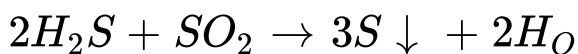
42. Which is the oxidant used for purification of drinking water?

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43. Why is potassium permanganate used for cleaning of water tanks?

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44. Some examples of redox reaction are given identify the reductants and oxidants from them.



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45. Write the reaction of formation of  $Fe^{2+}$  by the reduction  $Fe^{3+}$  by making use of the symbol(e)?



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46. Write two conditions necessary for rusting of iron.



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47. What are the change that take place when fats and oils are oxidized?



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**48.** Define the following/write notes:

Physical change



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**49.** Define the following/write notes:

Chemical Change



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**50.** Define the following/write notes:

Chemical Reaction



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**51.** Define the following/write notes:

Chemical Equation



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**52.** Define the following/write notes:

Combination Reaction



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**53.** Define the following/write notes:

Decomposition Reaction.



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**54.** Define the following/write notes:

Displacement Reaction



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**55.** Define the following/write notes:

Double displacement reaction in which an insoluble salt is formed is also called \_\_\_ reaction



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**56.** Define the following/write notes:

Endothermic Reaction



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**57.** Define the following/write notes:

Exothermic Reaction



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**58.** Define the following/write notes:

Oxidation Reaction



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**59.** Define the following/write notes:

Reduction Reaction



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**60.** Define the following/write notes:

Redox Reaction



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**61.** Define the following/write notes:

Catalyst



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**62.** Define the following/write notes:

Neutralisation Reaction



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**63.** Define the following/write notes:

Rancidity in the food stuff cooked in oil or ghee is prevented by using\_\_\_\_\_.



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**64.** Define the following/write notes:

Balanced Equation



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**65.** Distinguish between

Physical Change and Chemical Change.



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**66.** Distinguish between

Displacement and Double displacement Reaction



**Watch Video Solution**

**67.** Distinguish between

Combination reaction and Decomposition reaction



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**68.** Distinguish between

Exothermic reaction and Endothermic reaction

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**69.** Distinguish between

Oxidation reaction Reduction reaction

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## 70. Give scientific reasons

When the gas formed on heating limestone is passed through freshly prepared lime water, the lime water turns milky.



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## 71. Give scientific reasons

It takes time for pieces of shahabad tiles to disappear in  $\text{HCl}$ , but its powder disappears rapidly.



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## 72. Give scientific reasons

While preparing dilute sulphuric acid from concentrated sulphuric acid in the laboratory, the concentrated sulphuric acid is added slowly to water with constant stirring.



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## 73. Give scientific reasons

It is recommended to use air tight container for storing oil for long time.



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#### 74. Give scientific reasons

Grills of doors and windows are always painted before they are used.



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#### 75. Give scientific reasons

Digestion of food is an example of decomposition reaction



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**76.** why respiration is considered an exothermic reaction?



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**77.** Give scientific reasons

We store silver chloride in dark coloured bottles.



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**78.** Give scientific reasons

The reaction of zinc powder with dilute hydrochloric acid is much more faster than the reaction of zinc

granules with hydrochloric acid when both the reactants are used in same quantity.



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**79.** Give scientific reasons

Shelf life period of fruits and vegetables increases when kept in refrigerator.



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**80.** Give scientific reasons

Concentrated hydrochloric acid reacts rapidly with

$\text{CaCO}_3$  than dilute hydrochloric acid.



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**81.** Give scientific reasons

Aluminium metal reacts much more faster than zinc metal with dilute hydrochloric acid



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**82.** Choose the correct option from the bracket and explain the statement giving reason:

(oxidation, displacement, electrolysis, reduction, zinc,

copper, double, displacement, decomposition )

To prevent rusting, a layer of \_\_\_ metal is applied on iron sheets

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**83.** Choose the correct option from the bracket and explain the statement giving reason:

(oxidation, displacement, electrolysis, reduction, zinc, copper, double, displacement, decomposition )

The conversion of ferrous sulphate to ferric sulphate is \_\_\_\_\_ reaction.

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**84.** Choose the correct option from the bracket and explain the statement giving reason:

(oxidation, displacement, electrolysis, reduction, zinc, copper, double, displacement, decomposition )

When electric current is passed through acidulated water \_ of water takes place.



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**85.** Choose the correct option from the bracket and explain the statement giving reason:

(oxidation, displacement, electrolysis, reduction, zinc, copper, double, displacement, decomposition )

Addition of an aqueous solution of  $ZnSO_4$  to an aqueous solution of  $BaCl_2$  is an example of \_\_ reaction

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**86.** What is the reaction called when oxidation and reduction take place simultaneously? Explain with one example.

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**87.** What is the reaction called when oxidation and reduction take place simultaneously? Explain with one example.



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**88.** How can the rate of the chemical reaction namely decomposition of hydrogen peroxide be increased



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**89.** Explain the term reactant and product giving examples.



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90. Explain the types of reaction with reference to oxygen and hydrogen. Illustrate with example



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91. Explain the similarity and difference in two events, namely adding NaOH to water and adding CaO to water



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**92.** Explain two ways by which food industries prevent rancidity

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**93.** Will it be possible for you to decompose water by heat or light energy? If you pass current from a 6 volt battery, is decomposition of water possible?

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**94.** Classify the following reactions into different types.  
 $\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \rightarrow \text{AgCl}(\text{s}) + \text{NaNO}_3(\text{aq})$





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95. Classify the following reactions into different types.  $CaO(s) + H_2O(l) \rightarrow Ca(OH)_2(aq) + Heat$



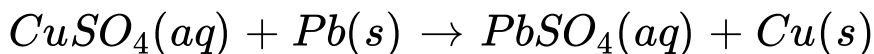
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96. Classify the following reactions into different types.  $2KClO_3(s) \xrightarrow{\Delta} 2KCl(aq) + 3O_2(g)$



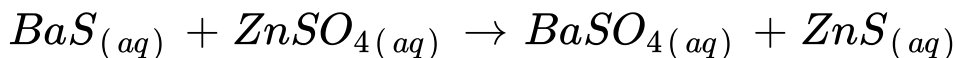
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97. Classify the following reactions into different types.



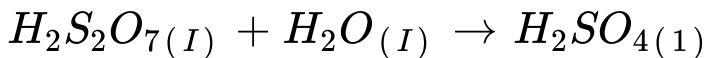
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98. Classify the following reactions into different types.



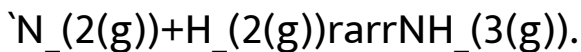
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99. Balance the following equation stepwise



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100. Write down the steps in balancing the equation



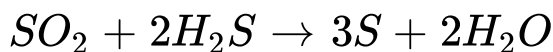
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101. Write down a balanced chemical equation for the following reaction. Calcium chloride + Sulphuric acid  $\rightarrow$  Calcium sulphate + Hydrogen chloride



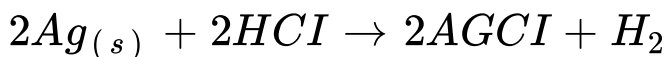
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**102.** Write down the physical states of reactants and products in following reaction.



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**103.** Write down the physical states of reactants and products in following reaction.



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**104.** Is it possible to produce hydrogen by decomposition of water by means of heat, electricity or light?



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**105.** What is the difference in the process of dissolution and a chemical reaction?



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**106.** Does a new substance form when a solute dissolves in a solvent?





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**107.** Explain what happens when following reactions take place and give the balanced chemical equations.

Iron sulphate reacts with sulphuric acid.



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**108.** Explain what happens when following reactions take place and give the balanced chemical equations.

Zinc dust is added to copper sulphate solution.



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**109.** Explain what happens when following reactions take place and give the balanced chemical equations. Potassium chromate solution is added to solution of barium sulphate.



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**110.** Explain what happens when following reactions take place and give the balanced chemical equations. Sodium carbonate solution is added to calcium chloride solution.



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**111.** Explain what happens when following reactions take place and give the balanced chemical equations.

Copper reacts with concentrated nitric acid.



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**112.** Explain what happens when following reactions take place and give the balanced chemical equations.

Silver nitrate solution added to solution of sodium chloride.



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**113.** Explain what happens when following reactions take place and give the balanced chemical equations.

Sulphate dioxide and hydrogen sulphide react.



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**114.** Explain what happens when following reactions take place and give the balanced chemical equations.

Glucose reacts with oxygen.



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**115.** What is the importance of a chemical equation?

OR Give the significance of a chemical equation.

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**116.** What is rancidity? Mention only two ways by which rancidity can be prevented.

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**117.** Give four uses of decomposition reaction.

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**118.** What is corrosion? Do gold ornaments corrode? Justify your answer

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**119.** Name the factors on which the speed of a chemical reaction depends

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