CHEMISTRY

BOOKS - BAL BHARTI

CHEMICAL REACTIONS AND EQUATIONS

Find Out

1. What are the other uses of silver nitrate in everyday life?

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2. Name the following

How are the blackened silver utensils and patinated (greenish)brass utensils cleaned ?

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Use Your Brain Power

1. Write down the steps in balancing the equation

$N_2(g) + H_2(g) \Leftrightarrow NH_3(g)$

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

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3. Write down the physical states of reactants and prooducts in following reaction.

$SO_2 + 2H_2S \rightarrow 3S + 2H_2O$

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4. Write down the physical states of reactants and prooducts in following reaction.

$2Ag_{(s)} + 2HCI \rightarrow 2AGCI + H_2$

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5. Complete the following reactions and give names of the products.

$CuSO_4(aq) + Fe(s) \rightarrow$ .....+.....

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6. Complete the following reactions and give names of the products.

$CuSO_{4\,(aq)}\ Pb_{(s)} \rightarrow \_\_\_\_\_ + \_\_\_\_\_$

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

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8. Does a new substance form when a solute dissolbes in a solvent?

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

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

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11. Answer the following questions :

Some more examples of redox reaction are as follows. Identify the reductants and oxidants from them.

(1) $2H_2S + SO_2 \longrightarrow 3S\downarrow + 2H_2O$

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12. If oxidation means losing electrons, what is meant by reduction?

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13. Write the reaction of formation of $Fe^{2}+)$ by the reduction $Fe3+$ by making use of the symbol(e)?

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Think About It

1. The luster of the surface of the aluminium utensils in the house is lost after a few days. Why

does this happen?

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Exercise

1. 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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2. 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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3. 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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4. 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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5. What is the reaction called when oxidation and reduction take place simultaneously? Explain with one example.

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

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7. Explain the term reactant and product giving examples.

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

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

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10. Explain the following terms with examples.

Endothermic reaction

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11. Explain the following terms with examples.

Combination reaction

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12. Explain the following terms with examples.

Balanced equation

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13. Explain the following terms with examples.

Displacement reaction

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14. Give scientifiifc reasons

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

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15. Give scientific reasons

It takes time for pieces of shahabad tiles to disappear in `HCI, but its powder disappears rapidly.

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16. 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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17. Give scientific reasons

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

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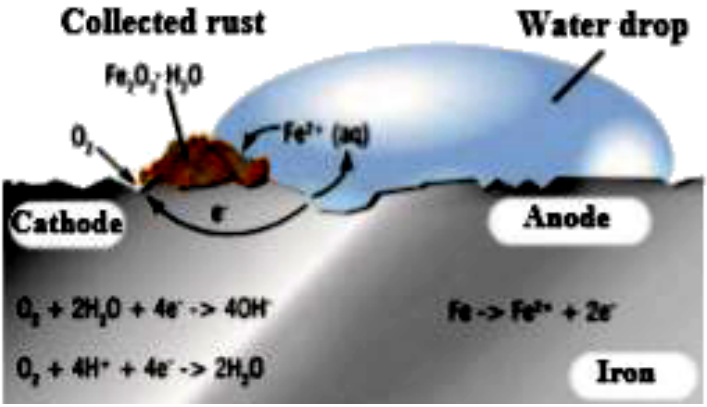
18. Observe the following picture a write down the chemical reaction with explanation.



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19. Identify from the following reactions the reactants that undergo oxidation and reduction.

$Fe + S \rightarrow FeS$

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20. Identify from the following reactions the reactants that undergo oxidation and reduction.

$2Ag_2O \rightarrow 4Ag + O_2 \uparrow$

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21. Identify from the following reactions the reactants that undergo oxidation and reduction.

$2Mg + O_2 \xrightarrow{\Delta} 2MgO$

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22. Identify from the following reactions the reactants that undergo oxidation and reduction.

$$NiO + H_2 \rightarrow Ni + H_2O$$

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23. Balance the following equation stepwise

$$H_2S_2O_{7(I)} + H_2O_{(I)} \rightarrow H_2SO_{4(1)}$$

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24. Balance the following equation stepwise.

$$SO_{2(g)} + H_2S_{(aq)} \rightarrow S_{(s)} + H_2O_{(l)}$$

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25. Balance the following equation stepwise.

$$Ag_{(s)} + HCl_{(aq)} \rightarrow AgCl \downarrow + H_2 \uparrow$$

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26. Balance the following equation stepwise.

$$NaOH_{(aq)} + H_2SO_{4(aq)} \rightarrow Na_2SO_{4(aq)} + H_2O_{(l)}$$

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27. Identity the endothermic and exothermic reaction.

$HCl + NaOH \rightarrow NaCl + H_2O + \quad \text{heat}$

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28. Identity the endothermic and exothermic reaction.

$2KClO_{3(s)} \xrightarrow{\Delta} 2KCl_{(s)} + 3O_2 \uparrow$

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29. Identity the endothermic and exothermic reaction.

$$CaO + H_2O \rightarrow Ca(OH)_2 + \quad \text{heat}$$

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30. Identity the endothermic and exothermic reaction.

$$CaCO_{3(s)} \xrightarrow{\Delta} CaO_{(s)} + CO_2 \uparrow$$

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31. Match the column in the following table

Reactants	Products	Type of chemical reaction
$BaCl_2(aq) + ZnSO_4(aq)$	$H_2CO_3(aq)$	Displacement
$2AgCl(s)$	$FeSO_4(aq) + Cu(s)$	Combination
$CuSO_4(aq) + Fe(s)$	$BaSO_4\downarrow + ZnCl_2(aq)$	Decomposition
$H_2O(l) + CO_2(g)$	$2Ag(s) + Cl_2(g)$	Double displacement

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