

CHEMICAL REACTIONS AND EQUATIONS

DPP 01

Concepts

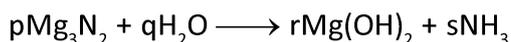
*Physical changes, Chemical changes
and Balancing of chemical equations*

1. Which of the following is a chemical change ?
(A) Melting of ice
(B) Dissolving salt in water
(C) Rusting of iron
(D) Boiling of water into steam
2. Which of the following is not a physical change ?
(A) Boiling of water to give water vapour
(B) Melting of ice to give water
(C) Dissolution of salt in water
(D) Combustion of liquified petroleum gas (LPG)
3. Change of milk to curd is a _____
(A) Both of these
(B) Chemical change
(C) Physical changes
(D) None of these
4. Change in size, shape and state of a substance is a :-
(A) Chemical change
(B) Cyclic change
(C) Physical change
(D) None of these
5. Glowing of an electric bulb is a _____ change.
(A) Physical change
(B) Chemical change
(C) Both of these
(D) None of these
6. The equation
 $x \text{ NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + y \text{ H}_2\text{O}$
The values of x and y are ?
(A) 2 and 2 (B) 2 and 1
(C) 2 and 3 (D) 2 and 4
7. Which of the following reaction is not balanced ?
(A) $\text{BaCl}_2 + \text{K}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{KCl}$
(B) $2\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + 2\text{H}_2\text{O}$
(C) $\text{Zn} + 2\text{AgNO}_3 \rightarrow \text{Zn}(\text{NO}_3)_2 + 2\text{Ag}$
(D) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + \text{NaCl}$
8. In the balanced chemical equation. Which of the following alternative is correct ?
x Aluminium + y copper chloride → z Aluminium chloride + w copper
(A) x = 2, y = 2, z = 3, w = 3
(B) x = 2, y = 3, z = 2, w = 3
(C) x = 3, y = 2, z = 2, w = 3
(D) x = 2, y = 3, z = 2, w = 1
9. The equation
 $x \text{ NH}_3 + 5\text{O}_2 \rightarrow y \text{ NO} + z \text{ H}_2\text{O}$
Find the value of x + y + z ?
(A) 10
(B) 12
(C) 7
(D) 14
10. Which information is not conveyed by a balanced chemical equation ?
(A) Physical states of reactants and products.
(B) Symbols and formula of all the substances involved in a particular reaction.
(C) Number of atom/molecules of the reactants and products formed.
(D) Whether a particular reaction is actually feasible or not.
11. In the balanced equation,
 $\text{Cu} + x\text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + y\text{NO}_2 + 2\text{H}_2\text{O}$ the values of x and y are
(A) 3 and 5
(B) 8 and 6
(C) 4 and 2
(D) 7 and 1

12. Which one of the following process involve chemical reaction ?

- (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

13. Consider the following reaction :



- (A) 1, 3, 3, 2
- (B) 1, 6, 3, 2
- (C) 1, 2, 3, 2
- (D) 2, 3, 6, 2

DPP 02

Concepts

**Redox reaction & Oxidation,
Reduction, Rancidity, Corrosion**

1. The addition of oxygen to a substance is called :

- (A) Redox
- (B) Oxidation
- (C) Reduction
- (D) None of these

2. In the given reaction, the oxidising agent is :



- (A) Br_2
- (B) I^-
- (C) Br^-
- (D) I_2

3. For the following reaction $2\text{H}_2\text{S}(\text{g}) + \text{SO}_2(\text{g}) \longrightarrow 3\text{S}(\text{s}) + 2\text{H}_2\text{O}(\text{l})$

Which statement is true ?

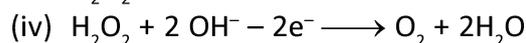
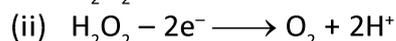
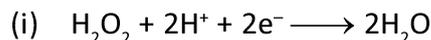
- (i) H_2S is reduced
 - (ii) SO_2 is oxidised
 - (iii) H_2S is reducing agent
 - (iv) SO_2 is oxidising agent
- (A) (i) and (iii)
 - (B) (ii) and (iii)
 - (C) (i) and (ii)
 - (D) (iii) and (iv)

5. In the reaction.



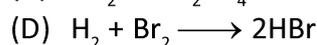
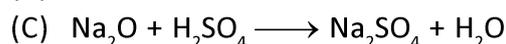
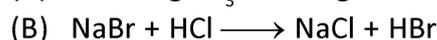
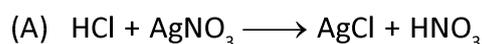
- (A) Zn gets oxidised
- (B) Zn is oxidising agent
- (C) Fe gets oxidised
- (D) Zn and Fe both get oxidised

6. In which of the following reactions H_2O_2 acts as a reducing agent ?



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

7. Which one is a redox reaction ?



8. Rancidity of the Fat / oil containing food materials are due to

- (A) Antioxidants
- (B) Reduction
- (C) Oxidation
- (D) None of these

9. Which of the following is an examples of the corrosion :

- (A) Black coating on silver
- (B) Green coating on copper
- (C) Rusting of iron
- (D) All of the above

10. What is the method of Prevention of Corrosion :

- (A) Reduction
- (B) Oxidation
- (C) Galvanization
- (D) None of the above

11. The chemical reaction involved in the corrosion of metal is that of

- (A) oxidation as well as displacement
- (B) reduction as well as combination
- (C) oxidation as well as combination
- (D) reduction as well as displacement.

Concepts

Types of reactions

12. Which of the following statements about the following reactions is correct?
 $\text{ZnO} + \text{CO} \rightarrow \text{Zn} + \text{CO}_2$
 (A) ZnO is being oxidized.
 (B) CO is being reduced.
 (C) CO_2 is being oxidized.
 (D) ZnO is being reduced.
13. In the reaction between lead sulphide and hydrogen peroxide which substance is reduced?
 $\text{PbS} + 4\text{H}_2\text{O}_2 \rightarrow \text{PbSO}_4 + 4\text{H}_2\text{O}$
 (A) Lead sulphide
 (B) Hydrogen peroxide
 (C) Lead sulphate
 (D) Water
14. In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature?
 (A) $2\text{H}_2(l) + \text{O}_2(l) \longrightarrow 2\text{H}_2\text{O}(g)$
 (B) $2\text{H}_2(g) + \text{O}_2(l) \longrightarrow 2\text{H}_2\text{O}(l)$
 (C) $2\text{H}_2(g) + \text{O}_2(g) \longrightarrow 2\text{H}_2\text{O}(l)$
 (D) $2\text{H}_2(g) + \text{O}_2(g) \longrightarrow 2\text{H}_2\text{O}(g)$
15. The following reaction is an example of a
 $4\text{NH}_3(g) + 5\text{O}_2(g) \longrightarrow 4\text{NO}(g) + 6\text{H}_2\text{O}(l)$
 (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)
16. Which of the following statements is correct? Rusting of iron is a chemical change because
 (A) a new substance with new properties is produced
 (B) chemical composition of reactant is changed
 (C) change is permanent and cannot be reversed easily
 (D) All of these

1. The reaction $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$ represents :
 (A) Double displacement
 (B) Displacement
 (C) Decomposition
 (D) Combination
2. The reaction between potassium iodide and lead nitrate is :
 (A) Combination
 (B) Decomposition
 (C) Double displacement
 (D) Displacement
3. The Neutralization reaction between an acid and a base is type of :
 (A) Double displacement reaction
 (B) Displacement reaction
 (C) Addition reaction
 (D) Decomposition reaction
4. $2\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + 2\text{H}_2\text{O}$ is an example of -
 (i) Displacement reaction
 (ii) Double displacement reaction
 (iii) Neutralization reaction
 (iv) Combination reaction
 (A) (i) and (ii)
 (B) (ii) and (iii)
 (C) (iii) and (iv)
 (D) (i) and (iv)
5. Barium chloride on reaction 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 reactions
 (A) Only (i)
 (B) Only (ii)
 (C) Only (iv)
 (D) (ii) and (iv)

6. Which of the following is a double displacement reactions ?

- (A) $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$
 (B) $\text{CuSO}_4(\text{aq}) + \text{Fe}(\text{s}) \rightarrow \text{FeSO}_4 + \text{Cu}$
 (C) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
 (D) $\text{CaCO}_3(\text{s}) \xrightarrow{\Delta} \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$

7. Which of the following pair of reactants can undergo a displacement reaction under appropriate condition ?

- (A) $\text{MgSO}_4 + \text{Fe}$
 (B) $\text{ZnSO}_4 + \text{Fe}$
 (C) $\text{MgSO}_4 + \text{Pb}$
 (D) $\text{CuSO}_4 + \text{Fe}$

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

- (A) $\text{CuO} + \text{H}_2 \rightarrow \text{H}_2\text{O} + \text{Cu}$
 (B) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{Cu} + \text{ZnSO}_4$
 (C) $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
 (D) $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$

9. $\text{Pb}(\text{s}) + \text{CuCl}_2(\text{aq}) \rightarrow \text{PbCl}_2(\text{aq}) + \text{Cu}(\text{s})$

The above reaction is example of a

- (A) Combination reaction
 (B) Neutralisation reaction
 (C) Decomposition reaction
 (D) Displacement reactions

10. **Column – I**

- (i) A Compound breaks apart into its elements
 (ii) A metal and non-metal react to form an ionic compound.
 (iii) A compound of hydrogen and carbon reacts with oxygen to produce carbondioxide and water
 (iv) Silver ion from $\text{Ag}(\text{NO}_3)(\text{aq})$ forms a precipitate with bromide ion from $\text{KBr}(\text{aq})$.

Column – II

- (p) Combination
 (q) Decomposition
 (r) Displacement
 (s) Double displacement
 (t) Combustion

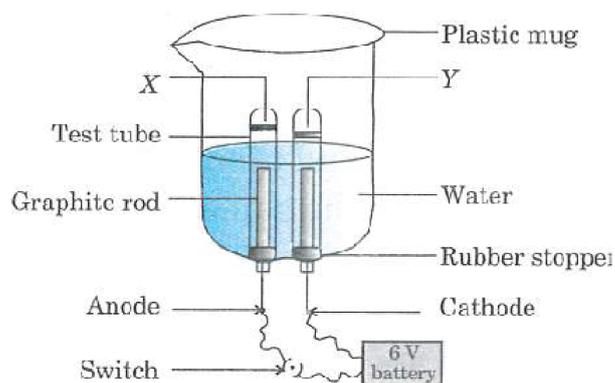
- (A) (i) → (q), (ii) → (p), (iii) → (r), (iv) → (s)
 (B) (i) → (q), (ii) → (p), (iii) → (t), (iv) → (s)
 (C) (i) → (s), (ii) → (r), (iii) → (q), (iv) → (p)
 (D) (i) → (p), (ii) → (t), (iii) → (q), (iv) → (r)

DPP 04

Concepts

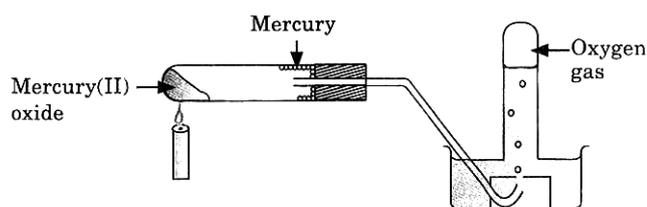
Types of reactions

- Among the following, the endothermic reaction is
 - combination of carbon and oxygen to form carbon monoxide
 - combination of nitrogen and oxygen to form nitrogen monoxide
 - combination of glucose and oxygen to form carbon dioxide and water
 - combination of zinc and hydrochloric acid to form zinc chloride and hydrogen.
- Formation of carbon disulphide from carbon and sulphur takes place by
 - absorption of heat
 - evolution of heat
 - no change in heat content
 - None of the above.
- Study the given diagram carefully.



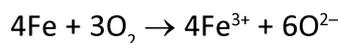
- (A) H_2, O_2 , Decomposition
 (B) O_2, H_2 , Displacement
 (C) H_2, O_2 , Displacement
 (D) O_2, H_2 , Decomposition

4. Copper displaces which of the following metal from its salt solution
- (A) ZnSO_4
 (B) FeSO_4
 (C) AgNO_3
 (D) NiSO_4
5. Which of the following is not an example of decomposition reaction?
- (A) $\text{CaCO}_3(\text{s}) \rightarrow \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$
 (B) $\text{Ca}(\text{OH})_2(\text{s}) \rightarrow \text{CaO}(\text{s}) + \text{H}_2\text{O}(\text{l})$
 (C) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}(\text{s}) \rightarrow \text{CuSO}_4(\text{s}) + 5\text{H}_2\text{O}(\text{l})$
 (D) $2\text{KClO}_3(\text{s}) \rightarrow 2\text{KCl}(\text{s}) + 3\text{O}_2(\text{g})$
6. Which of the following reactions is used in white washing walls?
- (A) $2\text{Ca} + \text{O}_2 \rightarrow 2\text{CaO}$
 (B) $\text{Ca}(\text{OH})_2 \xrightarrow{\text{Heat}} \text{CaO} + \text{H}_2\text{O}$
 (C) $\text{Ca}(\text{OH})_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$
 (D) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$
7. **Assertion** : Respiration is an exothermic process.
Reason : The glucose combines with oxygen in the cells of our body and provides energy.
- (A) Both assertion and reason are true and reason is the correct explanation of assertion.
 (B) Both assertion and reason are true but reason is not the correct explanation of assertion.
 (C) Assertion is true but reason is false.
 (D) Assertion is false but reason is true.
8. When lead nitrate reacts with potassium iodide, yellow precipitate of _____ is formed.
- (A) PbI_2 (B) KNO_3
 (C) $\text{Pb}(\text{NO}_3)_2$ (D) PbIO_3
9. The given diagram represents a _____ reaction.



- (A) photodecomposition (B) electrolysis
 (C) displacement (D) thermal decomposition

10. **Assertion** : Following reaction if iron is a redox reaction.



Reason : The metallic iron is oxidised to Fe^{3+} and O_2 is reduced to oxide ion.

- (A) Both assertion and reason are true and reason is the correct explanation of assertion.
 (B) Both assertion and reason are true but reason is not the correct explanation of assertion.
 (C) Assertion is true but reason is false.
 (D) Assertion is false but reason is true.
11. Which of the following informations about the reaction of quick lime with water is not true ?
- (A) Quick lime reacts with water vigorously.
 (B) During the reaction the test tube becomes hot.
 (C) Quick lime reacts with water to form slaked lime.
 (D) During the reaction dazzling white light is produced.

DPP 05

Concepts

NCERT Exemplar Based

1. Which of the following is not a physical change ?
- (A) Boiling of water to give water vapour
 (B) Melting of ice to give water
 (C) Dissolution of salt in water
 (D) Combustion of Liquefied Petroleum Gas (LPG)
2. The following reaction is an example of a
 $4\text{NH}_3(\text{g}) + 5\text{O}_2(\text{g}) \rightarrow 4\text{NO}(\text{g}) + 6\text{H}_2\text{O}(\text{l})$
- (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)
3. Which of the following statements about the given reaction are correct?
 $3\text{Fe}(\text{s}) + 4\text{H}_2\text{O}(\text{g}) \rightarrow \text{Fe}_3\text{O}_4(\text{s}) + 4\text{H}_2(\text{g})$
- (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)
4. 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)
5. Three beakers labelled as A, B and C each containing 25 mL of water were taken. A small amount of NaOH, anhydrous CuSO_4 and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is(are) correct?
 (i) In beakers A and B, exothermic process has occurred.
 (ii) In beakers A and B, endothermic process has occurred.
 (iii) In beaker C exothermic process has occurred.
 (iv) In beaker C endothermic process has occurred.
 (A) (i) only
 (B) (ii) only
 (C) (i) and (iv)
 (D) (ii) and (iii)
6. A dilute ferrous sulphate solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for the observation?
 (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 an unstable compound and decomposes in presence of FeSO_4 to a colourless compound.
7. Which among the following statement(s) is(are) true? Exposure of silver chloride to sunlight for a long duration turns grey due to
 (i) the formation of silver by decomposition of silver chloride
 (ii) sublimation of silver chloride
 (iii) decomposition of chlorine gas from silver chloride
 (iv) oxidation of silver chloride
 (A) (i) only
 (B) (i) and (iii)
 (C) (ii) and (iii)
 (D) (iv) only
8. Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water to form its solution called lime water. Which among the following is (are) true about slaking of lime and the solution formed?
 (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)
9. 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)
10. 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
11. Which of the following is(are) an endothermic process(es)?
 (i) Dilution of sulphuric acid
 (ii) Sublimation of dry ice
 (iii) Condensation of water vapours
 (iv) Evaporation of water
 (A) (i) and (iii)
 (B) (ii) only
 (C) (iii) only
 (D) (ii) and (iv)
12. 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
13. Which of the following 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 or helium
 (D) Helium or nitrogen
14. The following reaction is used for the preparation of oxygen gas in the laboratory

$$2\text{KClO}_3(\text{s}) \xrightarrow[\text{Catalyst}]{\text{Heat}} 2\text{KCl}(\text{s}) + 3\text{O}_2(\text{g})$$
 Which of the following statement(s) is(are) correct about the reaction?
 (A) It is a decomposition reaction and endothermic in nature.
 (B) It is a combination reaction.
 (C) It is a decomposition reaction and accompanied by release of heat.
 (D) It is a photochemical decomposition reaction and exothermic in nature.
15. 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
16. Which of the following are combination reactions?
 (i) $2\text{KClO}_3 \xrightarrow{\text{Heat}} 2\text{KCl} + 3\text{O}_2$
 (ii) $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$
 (iii) $4\text{Al} + 3\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$
 (iv) $\text{Zn} + \text{FeSO}_4 \rightarrow \text{ZnSO}_4 + \text{Fe}$
 (A) (i) and (iii)
 (B) (iii) and (iv)
 (C) (ii) and (iv)
 (D) (ii) and (iii)

DPP 06

Concepts

Previous year questions

1. The reaction between aqueous solutions of sodium chloride and silver nitrate is- **[Raj. NTSE Stage-1/05]**
 (A) Displacement reaction
 (B) Synthesis reaction
 (C) Double displacement reaction
 (D) Analysis reaction

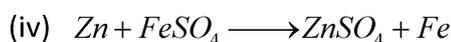
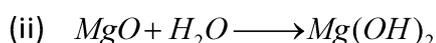
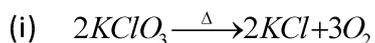
2. A brown and bright element "X" when heated in presence of air turns into black substance "Y". If hydrogen gas is passed over this heating material again "X" is obtained. "X" and "Y" are-
- [Raj. NTSE Stage-1/13]**
- (A) Cu and CuO
 (B) S and SO₂
 (C) C and CO₂
 (D) Na and NaH
3. $\text{H}_2\text{S}(\text{g}) + \text{Cl}_2(\text{g}) \rightarrow 2 \text{HCl}(\text{g}) + \text{S}(\text{s})$ The reaction is interpreted as: **[Delhi. NTSE Stage-1/13]**
- (A) H₂S is getting oxidised and Cl₂ is getting reduced
 (B) H₂S is getting oxidised and Cl₂ is getting oxidised
 (C) Only H₂S is oxidised
 (D) Both H₂S and Cl₂ are reduced
4. Oxidation is defined as: **[M.P. NTSE Stage-1/13]**
- (A) Loss of electron
 (B) Gain of electron
 (C) Loss of proton
 (D) Gain of proton
5. From the following metals whose Nitrate produces NO₂ gas on heating.
- [West bengal. NTSE Stage-1/13]**
- (A) Na
 (B) K
 (C) Pb
 (D) None of these
6. Displacement reaction is: **[Raj. NTSE Stage-1/14]**
- (A) $\text{CaO}(\text{s}) + \text{H}_2\text{O}(\text{l}) \rightarrow \text{Ca}(\text{OH})_2(\text{aq})$
 (B) $\text{Pb}(\text{s}) + \text{CuCl}_2(\text{aq}) \rightarrow \text{PbCl}_2(\text{aq}) + \text{Cu}(\text{s})$
 (C) $\text{MnO}_2(\text{s}) + 4\text{HCl}(\text{l}) \rightarrow \text{MnCl}_2(\text{s}) + 2 \text{H}_2\text{O}(\text{l}) + \text{Cl}_2(\text{g})$
 (D) $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
7. Which of the following is endothermic reaction ?
- [Haryana. NTSE Stage-1/14]**
- (A) $\text{C}(\text{s}) + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g})$
 (B) $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{NO}(\text{g})$
 (C) $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{l})$
 (D) $2\text{CH}_3\text{OH}(\text{l}) + 3\text{O}_2(\text{g}) \rightarrow 2\text{CO}_2(\text{g}) + 4\text{H}_2\text{O}(\text{l})$
8. Precipitate formation during chemical reaction is indicated by this arrow
- [Maharashtra. NTSE Stage-1/15]**
- (A) ↑ (B) →
 (C) ↓ (D) ←
9. $\text{BaCl}_2(\text{aq}) + \text{Na}_2\text{SO}_4(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$.
 The types of reaction are :
- (i) Displacement
 (ii) Precipitation
 (iii) Combination
 (iv) Double displacement
- (A) (i) and (iii)
 (B) (i), (ii) and (iii)
 (C) (ii) and (iii)
 (D) (ii) and (iv)
10. The chemical reaction $\text{HNO}_3 + \text{KOH} \rightarrow \text{KNO}_3 + \text{H}_2\text{O}$ is an example of **[Raj. NTSE Stage-1/15]**
- (A) Neutralization
 (B) Double displacement
 (C) Neutralization and double displacement
 (D) Combination
11. Hydrolysis of water is which type of following reaction ? **[Chandigarh. NTSE Stage-1/2015]**
- (A) Endothermic
 (B) Decomposition
 (C) Both (A) and (B)
 (D) Combination
12. When a burning splinter is brought near the gas jar containing hydrogen gas a popping sound is observed. It is due to. **[Chandigarh. NTSE Stage-1/15]**
- (A) Exothermic reaction
 (B) Endothermic reaction
 (C) Exothermic and endothermic reaction
 (D) None of these reaction

13. Identify the correct oxidant and reductant in the following reaction : **[Delhi. NTSE Stage-1/15]**

$$\text{PbS} + 4\text{H}_2\text{O}_2 \rightarrow \text{PbSO}_4 + 4\text{H}_2\text{O}$$
 (A) PbS - oxidant, H_2O_2 - Reductant
 (B) PbS - Reductant, PbSO_4 - Oxidant
 (C) PbS - Reductant, H_2O_2 - Oxidant
 (D) H_2O_2 - Oxidant, H_2O - Reductant
14. Match the given column- I with column- II and choose the correct option : **[Uttarakhand. NTSE Stage-1/15]**
- | Column- I | Column- II |
|--|-------------------------|
| (a) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ | (i) Exothermic reaction |
| (b) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$ | (ii) Dissociation |
| (c) $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$ | (iii) Reduction |
| (d) $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$ | (iv) Oxidation |
- (A) a - i, b - ii, c - iii, d - iv
 (B) a - ii, b - i, c - iv, d - iii
 (C) a - iv, b - iii, c - i, d - ii
 (D) a - iv, b - i, c - ii, d - iii
15. Identify the type of reaction for each of the following as **[A. P. NTSE Stage-1/ 2015]**
- | | |
|--------------------|--------------------------|
| Combination-(p) | Decomposition-(q) |
| Displacement — (r) | Double displacement- (s) |
| Combustion- (t) | |
- (i) A compound breaks apart into its elements
 (ii) A metal and a non-metal react to form an ionic compound.
 (iii) A compound of Hydrogen and Carbon reacts with Oxygen to produce Carbon dioxide and water
 (iv) Silver ion from $\text{Ag}(\text{NO}_3)$ (aq.) forms a precipitate with bromide ion from KBr (aq.)
- (A) (i) - q (ii) - p (iii) - r (iv) - s
 (B) (i) - q (ii) - p (iii) - t (iv) - s
 (C) (i) - s (ii) - r (iii) - q (iv) - p
 (D) (i) - p (ii) - t (iii) - q (iv) - r
16. Container made of Copper metal on exposure to air for long time turns green. The green layer is due to **[West Bengal NTSE Stage-1/ 2017]**
- (A) CuO
 (B) $\text{Cu(OH)}_2 \cdot \text{CuCO}_3$
 (3) $\text{CuSO}_4 \cdot 3\text{Cu(OH)}_2$
 (D) All of the above
17. Addition of HCl to an aqueous solution of $\text{Pb}(\text{NO}_3)_2$ gives a **[Jharkhand NTSE Stage-1/2017]**
- (A) Yellow Precipitate
 (B) Brown Precipitate
 (C) White Precipitate
 (D) Black Precipitate
18. The oxidation reaction in the following chemical reactions is **[Raj. NTSE Stage-I/19]**
- (A) $\text{Cl} + \text{e}^- \rightarrow \text{Cl}^-$
 (B) $\text{Mg}^{+2} + 2\text{e}^- \rightarrow \text{Mg}$
 (C) $\text{MnO}_4^- + \text{e}^- \rightarrow \text{MnO}_4^{-2}$
 (D) $\text{Fe}^{+2} \rightarrow \text{Fe}^{+3} + \text{e}^-$
19. $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \xrightarrow[\text{Mo}]{\text{iron(Fe)}} 2\text{NH}_3(\text{g})$, Mo in the reaction is **[Raj. NTSE Stage-I/19]**
- (A) Catalyst promoter
 (B) Catalyst poison (inhibitor)
 (C) Bio-catalyst
 (D) Auto-catalyst
20. Which of the following reaction is a displacement reaction ? **[Chattisgarh NTSE Stage-1/19]**
- (A) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
 (B) $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
 (C) $\text{Zn} + 2\text{HCl} \rightarrow \text{H}_2 + \text{ZnCl}_2$
 (D) $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
21. When steam is passed over red hot coke, which gas is formed ? **[Chhattisgarh NTSE Stage -I/19]**
- (A) CO_2
 (B) $\text{CO} + \text{H}_2$
 (C) NH_3
 (D) $\text{CO} + \text{N}_2$

22. Which of the following are combination reactions ?

[Gujrat NTSE Stage-I/19]



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

(C) (ii) and (iv) (D) (ii) and (iii)

23. In balanced chemical equation



Which of the following alternative are correct ?

[Delhi NTSE Stage - I/19]

(A) a=2, b=3, c=1, d=2, e=3, f=3

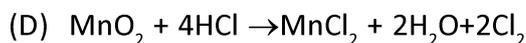
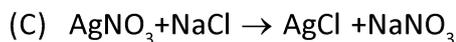
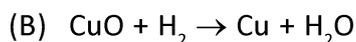
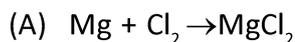
(B) a= 1, b=2, c=1, d=3, e=2, f=3

(C) a=2, b=3, c=2, d=3, e=2, f=5

(D) a=3, b=1, c=3, d=3, e=1, f=3

24. Which of the following reactions is not a redox reaction ?

[Jharkhand NTSE Stage-I/19]



25. Corrosion and rancidity are due to _____ and _____ respectively.

(A) oxidation ; oxidation

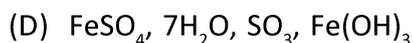
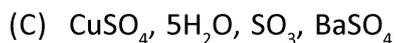
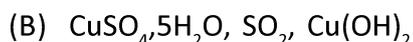
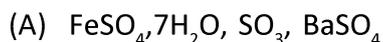
(B) oxidation; reduction

(C) reduction;oxidation

(D) reduction; reduction

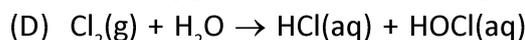
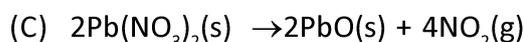
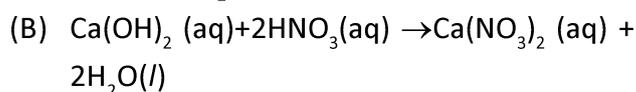
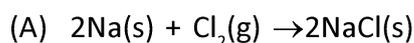
26. A green substance "X", when heated strongly produces a brown solid and gas "Y", The gas is passed into caustic soda and then the solution is treated with $BaCl_2$ to get a white solid "Z" Identify 'X', 'Y', 'Z' and choose the correct answer of their formula :

[Odisha NTSE Stage-I/19]



27. Which among the following is not a redox reaction ?

[Kerala NTSE Stage-I/19]



28. Which ammonium compound does not produce ammonia gas on heating ?

[West bengal NTSE Stage-I/19]



29. When lead nitrate is heated a brown gas is evolved, the evolved gas is _____.

[Delhi_NTSE_2020-21]

(A) Dioxygen

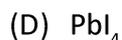
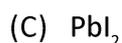
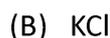
(B) Nitrogen dioxide

(C) Nitrous oxide

(D) Dinitrous oxide

30. When a solution of lead (II) nitrate and potassium iodide are mixed, the yellow ppt is formed, the ppt is of _____.

[Delhi_NTSE_2020_21]

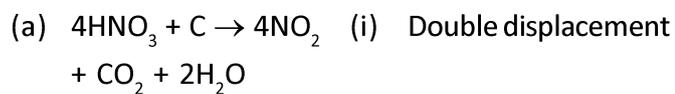


31. Match the reactions of Column - I with Column - II and choose the correct option:

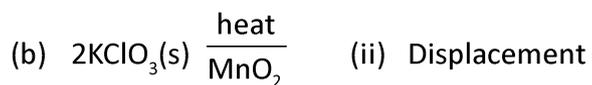
[Haryana_NTSE_2020_21]

Column - I

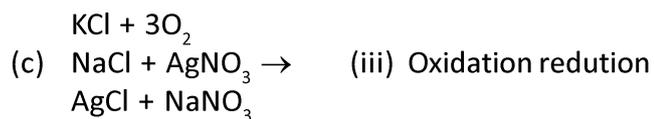
Column - II



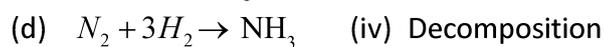
(i) Double displacement



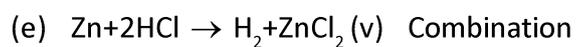
(ii) Displacement



(iii) Oxidation reduction



(iv) Decomposition



(v) Combination

(A) a-v, b-iii, c-ii, d-i, e-iv

(B) a-iii, b-iv, c-i, d-v, e-ii

(C) a-ii, b-iii, c-iv, d-v, e-i

(D) a-iv, b-iii, c-ii, d-v, e-i

ANSWER KEY

DPP_1

1. C 2. D 3. B 4. C 5. A 6. A 7. D
8. D 9. B 10. D 11. C 12. D 13. B

DPP_2

1. B 2. A 3. D 4. B 5. A 6. B 7. D
8. C 9. D 10. C 11. C 12. D 13. A 14. C
15. C 16. D

DPP_3

1. D 2. C 3. A 4. B 5. D 6. C 7. D
8. C 9. D 10. B

DPP_4

1. B 2. A 3. D 4. C 5. C 6. C 7. A
8. A 9. D 10. A 11. D

DPP_5

1. D 2. C 3. C 4. A 5. C 6. A 7. A
8. B 9. D 10. B 11. D 12. B 13. D 14. A
15. D 16. D

DPP_6

1. C 2. A 3. A 4. A 5. C 6. B 7. B
8. C 9. D 10. C 11. C 12. A 13. C 14. D
15. B 16. B 17. C 18. D 19. A 20. C 21. B
22. D 23. A 24. C 25. A 26. A 27. B 28. C
29. B 30. C 31. B