Chapter 01

Chemical Reactions and Equations

1 Mark Questions

1. Balanced the given chemical reaction and choose the correct option for *X* and *Y*.

$$P_4(s) + XCl_2(g) \longrightarrow YPCl_5(s)$$

(a) 4, 10 (b) 3, 4
(c) 10, 4 (d) 6, 3

2. A solid compound which is white in colour when we heat, it turns yellow and when we cool, it turns white again. Which of the following compound is this?

(a) ZnO (b) PbO
(c) Ag_2O (d) CaO

3. Consider the following chemical equation

Ammonia + Carbon dioxide $\longrightarrow$ Product

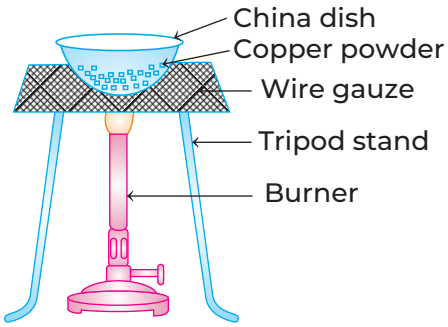
The products formed in the given reaction are

(a) $NH_2NH_2 + H_2O$
(b) $NH_2CONH_2 + H_2O$
(c) $NH_2ONH_3 + H_2O$
(d) $NH_3CONH_3 + H_2O$

4. A few drops of sodium hydroxide were added to a metal salt solution. A white gelatinous precipitate was formed. Which metal ion (cation) was present in the salt solution?

(a) Fe^{3+} ion (b) Zn^{2+} ion
(c) Fe^{2+} ion (d) Cu^{2+} ion

5. Ram setup an experiment which is given below.



In the above experiment, he observed that

(a) Cu reduced into CuO.

(b) Cu oxidised into CuO.

(c) A black substance has formed (precipitate)

(d) Both (b) and (c)

6. Consider the following reactions

(i) $Zn(aq) + CuSO_4(aq) \longrightarrow ZnSO_4(aq) + Cu(s)$

(ii) $Na_2SO_4(aq) + BaCl_2(aq) \longrightarrow BaSO_4(s) + 2NaCl(aq)$

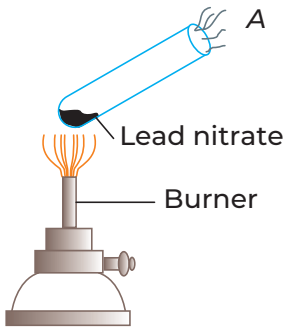
(iii) $FeSO_4(s) \xrightarrow{\Delta} Fe_2O_3 + SO_2 + SO_3$

(iv) $CaO + H_2O \longrightarrow Ca(OH)_2$

Which of the above reaction(s) is/are an example of double displacement reaction?

(a) Only (i) (b) Only (ii) (c) Only (iii) (d) Only (iv)

7. In the following diagram *A* represents to



(a) NO (b) NO_2 (c) N_2O (d) NH_3

8. In the following reaction,

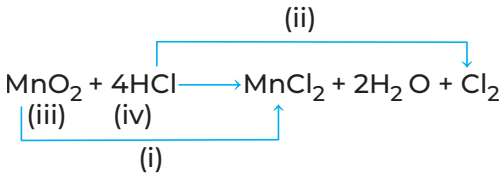
$(A)Pb(NO_3)_2 + (B)KI \longrightarrow (C)PbI_2 + (D)KNO_3$

the value of *A*, *B*, *C* and *D*, respectively is

	A	*B*	*C*	*D*
(a)	2	1	1	2
(c)	2	2	1	1

	A	*B*	*C*	*D*
(b)	1	2	1	2
(d)	1	1	2	2

9. Observe the following reaction.



In the above reaction (i), (ii), (iii) and (iv) respectively are

	(i)	(ii)	(iii)	(iv)
(a)	Reduction	Oxidation	Oxidising agent	Reducing agent
(b)	Oxidation	Reduction	Reducing agent	Oxidising agent
(c)	Reduction	Oxidation	Reducing agent	Oxidising agent
(d)	Oxidation	Reduction	Oxidising agent	Reducing agent

10. Consider the following reaction and the statements given after that

$$2PbO(s) + C(s) \longrightarrow 2Pb(s) + CO_2(g)$$

I. Lead is getting reduced.

II. Carbon is getting oxidised.

Choose the correct statement(s) and mark the correct option.

(a) Only I

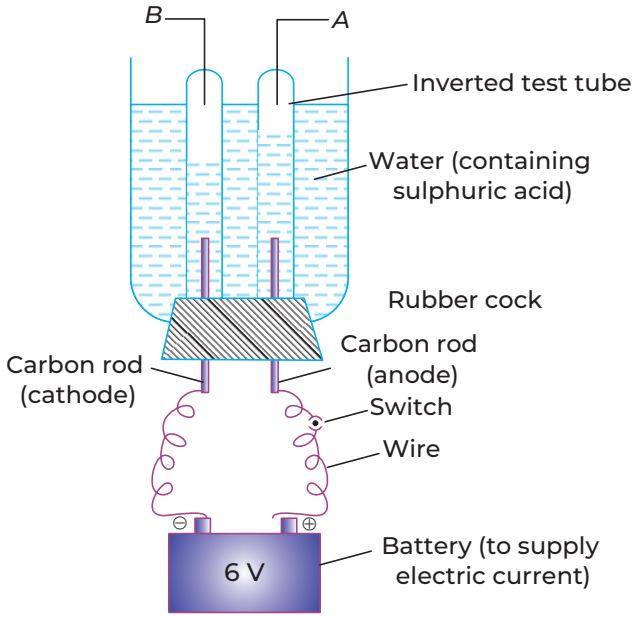
(b) Only II

(c) Both I and II

(d) Neither I nor II

2 Marks Questions

11. Ravi setup an experiment.

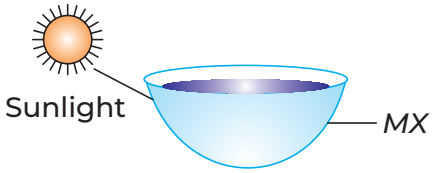


In this experiment, he uses two carbon rods which act as electrodes. Two inverted test tubes were placed on these electrodes and set up in a bottles as shown in the diagram. In bottle, there are water containing sulphuric acid. When Ravi connected electrodes with battery, bubbles of gases are being formed in both test tubes. After that he bring the candle near the mouth of *A*. He observed that the candle burns with bright light. Similarly, when a candle was brought near the mouth of the test tube *B*, it burn with poping sound. The gases present in test tubes *A* and *B* respectively are

(a) N_2 and O_2 (b) O_2 and H_2

(c) N_2 and H_2 (d) H_2 and N_2

12. A metal salt *MX* when exposed to light splits up to form metal *M* and a gas X_2, which is shown in the figure.

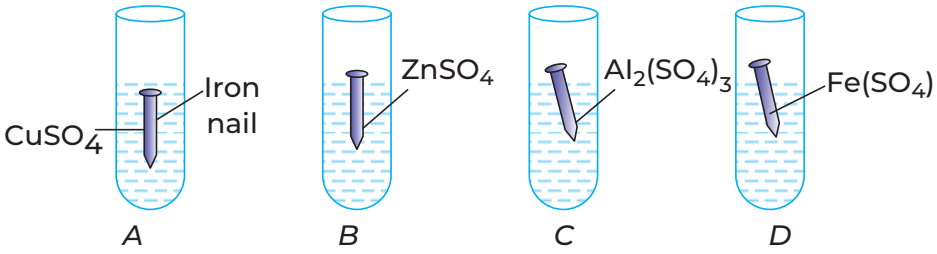


Metal *M* is used in making ornaments, whereas gas X_2 is used in making bleaching powder.

The salt *MX* is itself used in black and white photography. What could be *M* and *X*?

	M	*X*		*M*	*X*
(a)	Au	Cl_2	(b)	Ag	O_2
(c)	Au	O_2	(d)	Ag	Cl_2

13. A student took four test tubes *A, B, C* and *D* containing copper sulphate, zinc sulphate, aluminium sulphate and ferrous sulphate. He dipped an iron nail in each solution. After some time, he found a brown deposite formed in test tube. In which test tube he saw brown deposite?



(a) *A* (b) *B*

(c) *D* (d) *C*

14. In the following statements, Select the one which explain. "why the speed of some chemical reactions is increased when the surface area of the reactant is increased"?

Statement I The change increases the density of reactant particles.

Statement II The change increases the concentration of the reactant.

Statement III The change exposes more reactant particles to a possible collision.

Statement IV The change alters the electrical conductivity of the reactant particles.

Choose the option containing correct statement.

(a) Only I (b) Only II

(c) Only III (d) Only IV

15. Match the Column I with Column II and select the correct answer using the codes given below.

	Column I (Chemical Reactions)		**Column II** (Reaction Types)
A.	$Mg + 2HCl \longrightarrow MgCl_2 + H_2$	1.	Endothermic reaction
B.	$AgBr \xrightarrow{h\nu} Ag + Br_2$	2.	Redox reaction
C.	$ZnO + C \xrightarrow{\Delta} Zn + CO$	3.	Decomposition reaction
D.	$N_2 + O_2 \xrightarrow{\Delta} 2NO$	4.	Exothermic reaction
		5.	Displacement reaction

Codes

	A	B	C	D
(a)	3	5	4	2
(b)	3	1	4	4
(c)	5	3	2	1
(d)	3	5	1	2

Answers

1.	(c)	**2.**	(a)	**3.**	(b)	**4.**	(b)	**5.**	(d)	**6.**	(b)	**7.**	(b)	**8.**	(b)	**9.**	(a)	**10.**	(c)
11.	(b)	**12.**	(d)	**13.**	(a)	**14.**	(c)	**15.**	(c)											