

**I. Select the most appropriate option out of the four options given**

- Which of the following reaction is an endothermic reaction ?  
 (A) Burning of coal (B) Decomposition of vegetable matter into compost  
 (C) Process of respiration (D) Decomposition of calcium carbonate to form quick lime and carbon dioxide.
- An iron nail is placed in a solution of copper sulphate. The nail is taken out after 15 minutes. The nail will be found to be covered with:  
 (A) blue deposit (B) grey deposit (C) green deposit (D) brown deposit
- In the reaction of sodium sulphate and barium chloride the colour of the precipitate formed is  
 (A) Yellow (B) Green (C) White (D) Black
- $Zn + 2CH_3COOH \rightarrow (CH_3COO)_2Zn + H_2$   
 The above reaction is a :  
 (A) Decomposition reaction (B) Displacement reaction  
 (C) Double displacement reaction (D) Combination reaction
- $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$   
 The reaction given above is a redox reaction because in this case:  
 (A)  $MnO_2$  is oxidized and  $HCl$  is reduced. (B)  $HCl$  is oxidized.  
 (C)  $MnO_2$  is reduced. (D)  $MnO_2$  is reduced and  $HCl$  is oxidized.

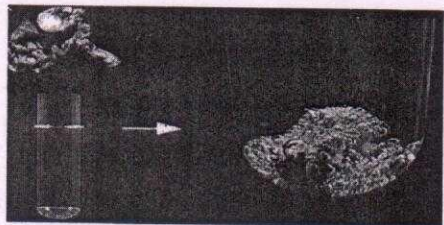
**II. Assertion/Reason type questions**

- Assertion:** Rusting of Iron is endothermic in nature.  
**Reason:** As the reaction is slow, the release of heat is barely evident.
- Assertion:** Chemical reaction changes the physical and chemical properties of a substance.  
**Reason:** Chemical reaction involves a change in the chemical composition of matter.
- Assertion :** Changing of colour of copper from reddish brown to black on heating is an example of reduction.  
**Reason :** Reduction is the process of removal of oxygen or addition of hydrogen .

**III. Very short answer type questions (2 Marks)**

In electrolytic decomposition of water, two gases are liberated at the electrodes. Name the gases and give the mass ratio of the gas liberated at the electrodes.

- Write any two observations of the below given reaction



- Define decomposition reaction. Write chemical equation for the reaction that occurs when lead nitrate is heated strongly in a boiling tube.
- Name and state the law which is kept in mind when we balance a chemical equation.

5. (a) Write the balanced chemical equation for the reaction that is prevented by storing potassium metal under kerosene.  
 (b) Identify the type of chemical reaction that is prevented.
6. Write the balanced chemical equation for the following reactions with state symbols:  
 (a) Marble dissolves in hydrochloric acid to give soluble calcium chloride, water and carbon dioxide.  
 (b) Solid sodium carbonate reacts with dilute hydrochloric acid to give sodium chloride, water and carbon dioxide gas.
7. Find the value of x, y and z in the following equations:  
 (a)  $\text{Be}_2\text{C} + x\text{H}_2\text{O} \rightarrow y\text{Be}(\text{OH})_2 + \text{CH}_4$   
 (b)  $\text{Mg}_3\text{N}_2 + x\text{H}_2\text{O} \rightarrow y\text{Mg}(\text{OH})_2 + z\text{NH}_3$

#### IV. Short answer type questions (3 Marks)

1. A metal salt MX when exposed to light splits to form metal M and gas  $\text{X}_2$ . Metal M is used to make ornaments where as gas  $\text{X}_2$  is used in making bleaching powder ( $\text{CaOCl}_2$ ). The salt MX is used in black and white photography.  
 (a) Name the metal M and gas  $\text{X}_2$ .  
 (b) Identify MX  
 (c) Write down the chemical equation and identify the type of reaction.
2. Compound X decomposes to form compound Y and  $\text{CO}_2$  gas. Compound Y is used for white washing.  
 (a) Name X and Y  
 (b) Write the balanced chemical equation and identify the type of reaction.
3. (a) What is a redox reaction?  
 (b) In the given redox reaction,  $\text{PbO} + \text{H}_2 \rightarrow \text{Pb} + \text{H}_2\text{O}$ , Identify  
 (i) Substance oxidized (ii) Substance reduce  
 (iii) Oxidising agent (iv) Reducing agent
4. An alloy of 'M' is used for soldering. When a nitrate of 'M' is heated, it gives a yellowish brown coloured metal oxide together with a brown gas, 'G<sub>1</sub>' and a colourless gas 'G<sub>2</sub>'. Name the metal M and identify G<sub>1</sub> and G<sub>2</sub> and write the balanced chemical equation.

#### V. Long answer type question (5 Marks)

1. (a) "The types of reactions in which (I) calcium oxide is formed, and (II) calcium hydroxide is formed are opposite reactions to each other." Justify this statement with the help of chemical equations.  
 (b) How can we say that (1) electrolysis of water, and (II) blackening of silver bromide when exposed to sunlight, are decomposition reactions? Mention the type of energy involved in each case.
2. What is a chemical reaction? Describe one activity each to show that a chemical change has occurred in which  
 (I) Change of colour, and (II) Change in temperature has taken place.

#### VI. CBQ (4Marks)

White wash was being done at Mukesh's house. Mukesh saw that the painter added quick lime to drum having water. Mukesh touched outer surface of drum, it is unbelievably hot.

- (a) The above mentioned process comes under two types of chemical reactions. Name and define the types of reactions.  
 (b) What are the chemical names of quick lime and slaked lime. Write the chemical equation for the reaction when quick lime is added to water.

OR

- (b) What happens when the solution of quick lime is applied on the wall?. Write the chemical equations to justify your answer.

**DAYANAND ANGLO VEDIC PUBLIC SCHOOL, AIROLI**  
**CHEMISTRY REVISION WORKSHEET- STD : X (2024-25)**  
**TOPIC : ACIDS BASES AND SALTS**

**Q I. Multiple Choice Questions**

- The discomfort caused by indigestion due to overeating can be cured by  
(a) Vinegar                      (b) Lemon juice                      (c) Baking soda                      (d) Caustic soda
- When  $\text{HCl(aq)}$  is exactly neutralised by  $\text{NaOH(aq)}$ , the hydrogen ion concentration in the resulting mixture is  
(a) always less than the concentration of the hydroxide ions  
(b) always greater than the concentration of the hydroxide ions  
(c) always equal to the concentration of the hydroxide ions  
(d) sometimes greater and sometimes less than the concentration of the hydroxide ions
- An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?  
(a) Baking powder                      (b) Lime                      (c) Ammonium hydroxide                      (d) Hydrochloric acid
- Which of the following statements is correct about an aqueous solution of acid and of a base?  
(i) Higher the pH, stronger the acid                      (ii) Higher the pH, weaker the acid  
(iii) Lower the pH, stronger the base                      (iv) Lower the pH, weaker the base  
(a) (i) & (ii)                      (b) (ii) & (iii)                      (c) (i) & (iv)                      (d) (ii) & (iv)

**Q 2. Short Answer Questions**

- Explain why  $\text{Fe(OH)}_2$  solution can not be kept in Aluminium container. Write chemical equation for the reaction that may take place for the same.
- State the chemical property in each case on which the following uses of baking soda are based:  
(i) as an antacid                      (ii) as a constituent of baking powder
- Why does a stain of curry on a white cloth become reddish brown when soap is scrubbed on it and turns yellow again when the cloth is washed with plenty of water?
- Write the chemical name of the compounds which is used for the following purposes:  
(a) used as disinfectant for drinking water                      (b) used for removal of hardness of water
- What is the pH value ( $< 7$ ,  $> 7$  or  $= 7$ ) do you expect for the following salt solutions and give reason for your choice.  
(i)  $\text{CuSO}_4$                       (ii)  $\text{Na}_2\text{CO}_3$
- How would you distinguish between baking soda and washing soda by heating? Explain with suitable chemical equations.

**Q 3. Long Answer Questions**

- You have four solutions A, B, C and D having pH 4,9,12 and 7 respectively.  
(i) Identify the most acidic and most basic solutions.  
(ii) Arrange the above four solutions in the increasing order of  $\text{H}^+$  ion concentrations.  
(iii) State the change in colour of pH paper on dipping in solution C and D.

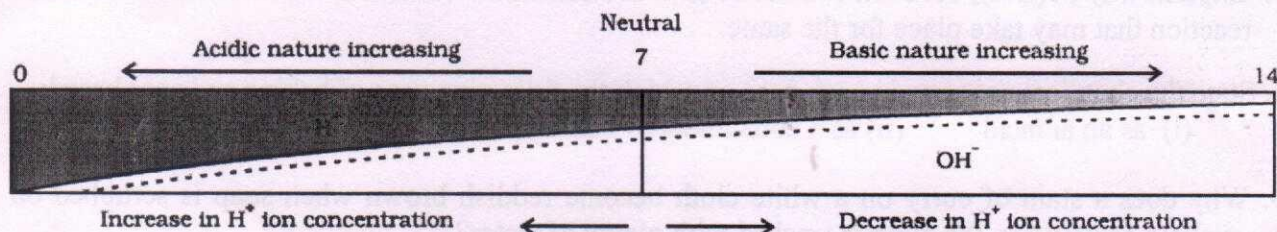
2. (i) Write the chemical name and chemical formula of the compound which is used for making bread and cakes to make them fluffy.  
 (ii) Write the chemical equation for its preparation.  
 (iii) Give any other two uses of this compound other than the one mentioned above.
3. When a piece of limestone reacts with dilute HCl, a gas 'X' is produced. When this gas 'X' is passed through lime water, then a white precipitate 'Y' is formed. On passing the excess of gas 'X', the white precipitate dissolves, forming a soluble compound 'Z'.
  - (a) Identify X, Y and Z
  - (b) What is the chemical name of lime water?
  - (c) Write balanced equations for the reaction which takes place:
    - (i) When limestone reacts with dilute HCl
    - (ii) When gas X reacts with lime water to form white precipitate Y
    - (iii) When excess of gas X dissolves the white precipitate Y to form a soluble compound Z.

#### Q4. CBQ

Read the following and answer questions

#### pH Scale

A scale for measuring hydrogen ion concentration in a solution, called pH scale has been developed. The pH stands for 'potenz' in German meaning power. On the pH we can measure pH from 0 (very acidic) to 14 (very alkaline). pH should be thought of simply as a number which indicates the acidic or basic nature of a solution.



- a. A solution turns red litmus to blue. What will its pH? Predict the nature of this substance
- b. You have two solutions, X and Y. The pH value of X is 8, while that of Y is 13. Which solution has more hydroxide ion concentration? Justify your answer

OR

- b. A solution has pH value equal to 7. How can we
  - (i) increase the pH
  - (ii) decrease the pH

#### Q5. Assertion/ Reason

1. Assertion : Weak acids have low electrical conductivity.  
 Reason : Weak acids undergo complete ionization hence produce less H<sup>+</sup> ions.
2. Assertion : Water must be added slowly to acid with constant stirring.  
 Reason : The process of dissolving acid or base in water is highly exothermic.
3. Assertion : pH of ammonium chloride is in acidic range.  
 Reason : Solution of a salt of weak base and strong acid is acidic.