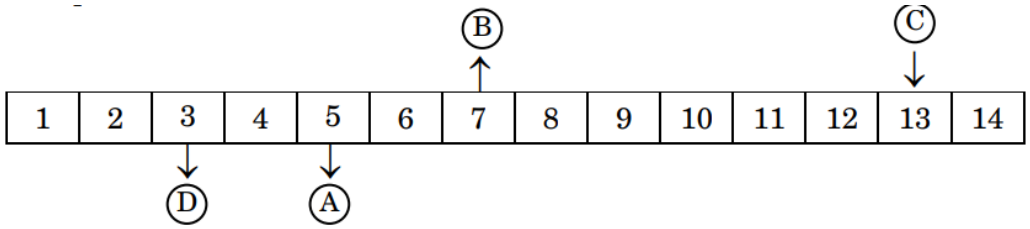
ST. VIVEKANAND MILLENNIUM SCHOOL
HMT Township, Pinjore
Term I Examination, September 2025

Subject: Science (Chemistry) **Set-I** **Class: X C**
Time allowed: 03 hours **MM: 35**

Section – A
(Multiple Choice Questions)

1x5=5

1. The following table shows the pH values of four solutions A, B, C and D on a pH scale: 1



The solutions A, B, C and D respectively are of a:
(A) Strong acid, weak acid, neutral, strong base
(B) Weak acid, neutral, weak base, strong base
(C) Weak acid, neutral, strong base, weak base
(D) Weak acid, neutral, strong base, strong acid

2. The acid present in nettle sting is: 1
(A) Acetic acid
(B) Methanoic acid
(C) Tartaric acid
(D) Citric acid

3. Consider the following chemical equation: 1

$$p\ Al + q\ H_2O \longrightarrow r\ Al_2O_3 + s\ H_2$$

To balance this chemical equation, the values of 'p', 'q', 'r' and 's' must be respectively:

(A) 3, 2, 2, 1 (B) 2, 3, 3, 1

(C) 2, 3, 1, 3 (D) 3, 1, 2, 2

Choose the correct option:

(a) Both A and R are correct, and R is the correct explanation of A.

(b) Both A and R are correct, but R is not the correct explanation of A.
(c) A is correct, but R is false.
(d) A is false, but R is correct.

4. **Assertion (A) :** HCl gas does not change the colour of dry blue litmus paper. 1

Reason (R) : HCl gas dissolves in the water present in wet litmus paper to form H+ ions.

5 **Assertion (A) :** The acid must always be added to water with constant stirring. 1

Reason (R) : Mixing of an acid with water decreases the concentration of H+ ions per unit volume.

SECTION-B
(2- Mark questions) 2x3=6

10. Translate the following statements into balanced chemical equations : 2

(a) Zinc sulphate decompose to give zinc oxide, sulphur dioxide and sulphur trioxide.

(b) Lead nitrate decompose to give lead oxide , Nitrogen dioxide and Oxygen

11 a) Define corrosion. 2

b) What is corrosion of iron called?

12 A crystalline substance of green colour ‘X’ emits gases of characteristic odour when heated over a flame. It first loses water and changes colour. On further heating, it decomposes and produces a solid compound Y. 2

(a) Identify 'X' and 'Y'

(b) State the change in colour observed when ‘X’ is heated.

OR

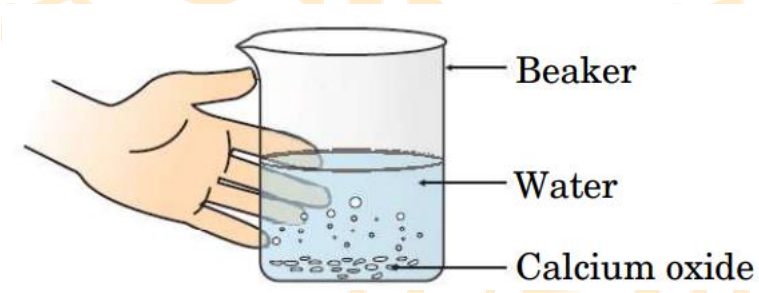
Write chemical equations to show what happens when an acid reacts with a

(i) Metal (ii) Base (iii) Carbonate

SECTION-C 3x5=15

(3- Mark questions)

11. Observe the given diagram and answer the following questions : 3



(a) Write a balanced chemical equation for the reaction taking place in the beaker.

(b) Name the two types of reactions in which the above reaction can be placed, giving justification for each.

(c) Write chemical reaction when carbon dioxide is passed through above solution.

12. A substance ‘X’ is used to make the cake soft and spongy. On heating this substance ‘X’, it produces a gas ‘Y’, which extinguishes a burning splinter. This gas ‘Y’ on reaction with limewater turns it milky. 3

(a) Identify ‘X’ and ‘Y’.
(b) Write the balanced chemical equations for the reactions involved.

OR

A chemical compound ‘X’ is used in the soap and glass industry. It is prepared from brine.
(a) Write the chemical name, common name and chemical formula of ‘X’.
(b) Write the equation involved in its preparation.
(c) What happens when it is treated with water containing and salts?

13 Answer the following : 3

(a) Write a balanced chemical equation for the process of photosynthesis and the conditions of the reaction giving physical state of all he substances.

(b) Classify the following reactions as exothermic or endothermic.

(i) Electrolysis of water.

(ii) Burning of natural gas.

(iii) Decomposition of Calcium Carbonate

(iv) Burning of magnesium ribbon in air.

14 Balance the following chemical equations. 3

a) $Al_2(SO_4)_3 + NaOH \rightarrow Al(OH)_3 + Na_2SO_4$

b) $Mg(OH)_2 + HCl \rightarrow MgCl_2 + H_2O$

c) $Al(OH)_3 \rightarrow Al_2O_3 + H_2O$

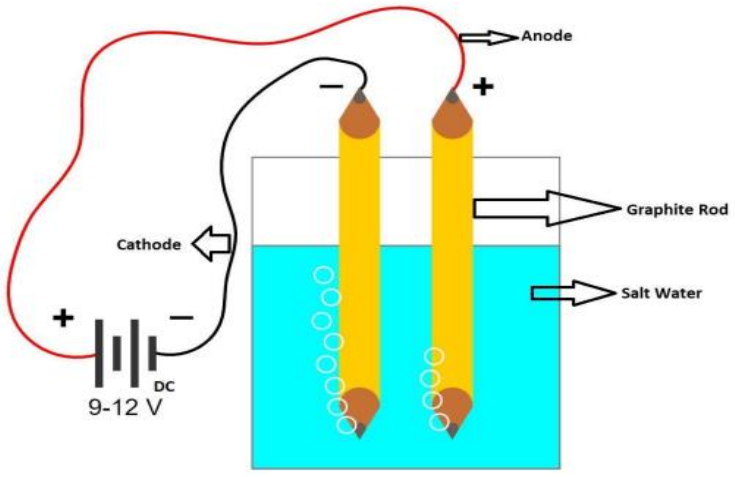
15 What is the difference between displacement and double displacement reactions? Write equations for their reactions. 3

SECTION-D
(4- Mark questions)

4x1=4

14 Read the following and answer any four questions: 4

Electrolysis is a process of decomposition of an electrolyte by the passage of electricity through the aqueous solution or molten (fused) state. During the electrolysis of water as shown in the diagram given below:-



(a) Identify the gases evolved at anode and cathode.

(b) Why are the amounts of gases collected in the two test tubes

are of not the same volume?

(c) What type of reaction is this?

(d) Write the reaction involved.

SECTION-E 5x1=5

(5- Mark questions)

15. Answer the following : 2

I. a. What is observed when hydrated ferrous sulphate crystals are heated in a dry boiling tube ?

b. Give balanced chemical equation(s) of the reactions(s) that occur(s).

II. Write one chemical equation each for the reactions in which the following changes occur, specifying the change observed : 3

(a) Change in colour
(b) Change in temperature
(c) Formation of precipitate