



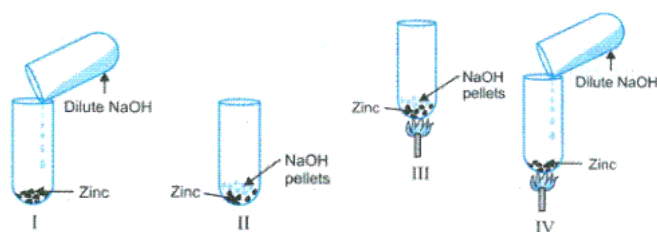
COMPETENCY BASED QUESTIONS

CHAPTER: ACIDS, BASES AND SALTS (Till art. 2.2.1)

COMPETENCY BASED QUESTIONS:

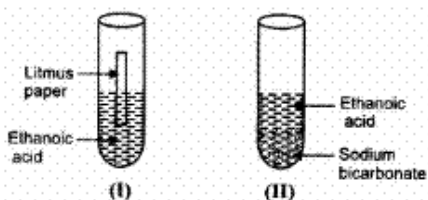
MCQ:

1. The figures below show set-ups for studying the reaction of zinc with sodium hydroxide.



The correct set-up is

- a) I
b) III
c) IV
d) II
2. What happens when a solution of an acid is mixed with a solution of a base in a test tube
- The temperature of the solution increases
 - The temperature of the solution decreases
 - The temperature of the solution remains the same
 - Salt formation takes place
- a) (ii) and (iii)
b) (i) and (iii)
c) (i) only
d) (i) and (iv)
3. 5 ml of ethanoic acid was taken in two test tubes I and II each. Blue and red litmus papers were dipped into test tube I and solid sodium bicarbonate was added to test tube II.

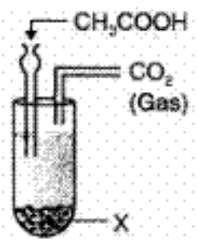


The following observations were reported

- A. Red litmus turned blue in I and no change was observed in II.
B. Blue litmus turned red in I and brisk effervescence was observed in II.
C. Red litmus turned blue in I and a gas of odour like vinegar evolved in II.
D. Blue litmus turned red in I and a gas which supports combustion evolved in II.

Which observation correctly represents the characteristics of ethanoic acid?

- a) B
b) C
c) A
d) D



4. X is :

- a) Na₂CO₃
b) NaOH
c) either Na₂CO₃ or NaHCO₃
d) NaHCO₃

5. Which of the following is(are) true when HCl (g) is passed through water?

- i. It does not ionise in the solution as it is a covalent compound.
 - ii. It ionises in the solution
 - iii. It gives both hydrogen and hydroxyl ion in the solution
 - iv. It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule
- a) (iii) and (iv)
b) (iii) only
c) (i) only
d) (ii) and (iv)

ASSERTION-REASON TYPE QUESTIONS:

1. **Assertion (A):** Gas bubbles are observed when sodium carbonate is added to dilute hydrochloride acid.

Reason (R): Carbon dioxide is given off in the reaction.

- a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

2. **Assertion (A):** To dilute concentrated sulphuric acid water is added to the acid slowly.

Reason: A lot of heat energy will be given out in the dilution of concentrated sulphuric acid.

- a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

3. **Assertion (A):** HCl gas does not change the color of dry blue litmus paper.

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

- a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.

d) A is false but R is true.

4. Assertion(A): Ammonia solution is an alkali.

Reason (R): Ammonia solution turns blue litmus paper red.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

5. Assertion (A): On adding H_2SO_4 to water the resulting aqueous solution gets corrosive.

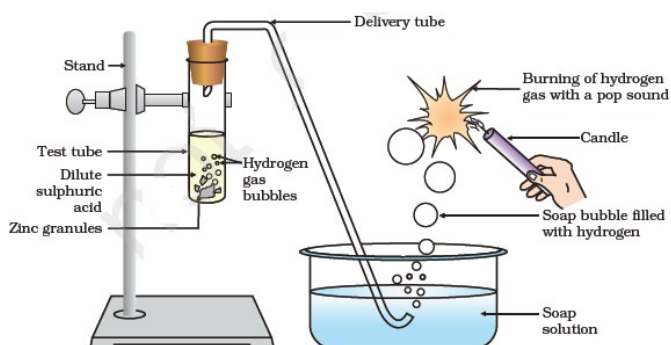
Reason (R): Hydronium ions are responsible for corrosive action.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true

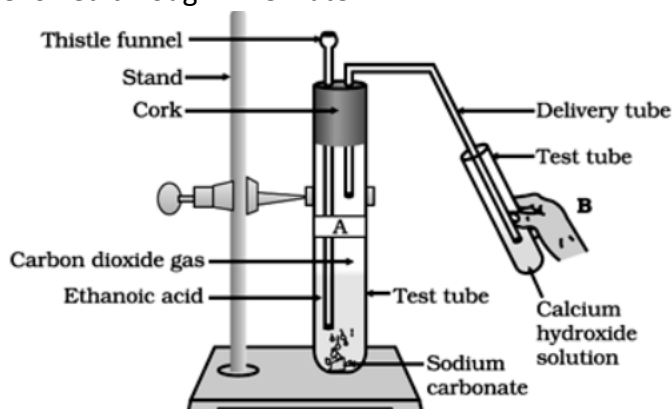
CASE BASED QUESTION:

Read the following and answer the following questions:

Experiment-1 to show the reaction of dilute sulphuric acid with zinc a few pieces of zinc granules in the boiling tube is taken and 5ml of dil. H_2SO_4 added to it and the gas bubble is formed.



Experiment-2 of passing CO_2 gas through calcium hydroxide solution. On passing the carbon dioxide gas evolved through lime water.



i. In **experiment 1** which gas evolved which produce the pop sound:

- a. Oxygen
- b. Hydrogen
- c. Nitrogen
- d. CO₂

ii. The reaction that takes place in experiment 2 is:

- a. $2\text{NaOH} + \text{Zn} \rightarrow \text{Na}_2\text{ZnO}_2 + \text{H}_2$
- b. $2\text{NaOH} + \text{Fe} \rightarrow \text{Na}_2\text{FeO}_2 + \text{H}_2$
- c. $2\text{KOH} + \text{Zn} \rightarrow \text{K}_2\text{ZnO}_2 + \text{H}_2$
- d. $2\text{NaOH} + \text{Sn} \rightarrow \text{Na}_2\text{SnO}_2 + \text{H}_2$

iii. In experiment-2 neutralization reaction can be written as:

- a. Base + Acid \rightarrow salt + water
- b. Base + Base \rightarrow Strong base
- c. Acid + Acid \rightarrow Strong acid
- d. None of the above

iv. The chemical formula of sodium zincate:

- a. Na₂ZnO₂
- b. Na₃ZnO₃
- c. Na₆ZnO₃
- d. Na₄ZnO₃

v. In experiment - 2 the product which is formed on passing excess of CO₂ in CaCO₃:

- a. Ca(CO₃)
- b. Ca₂ (HCO₃)
- c. Ca₂CO₃
- d. Ca(HCO₃)₂
