

- Name the gas produced when Sodium carbonate reacts with hydrochloric acid.
(ii) Magnesium metal reacts with hydrochloric acid. Write their chemical reactions.
- Name an indicator which is red in acid solution but turns blue in basic solution.
- Name two olfactory indicators.
- Name one strong and one weak acid.
- Why is cold milk helps a person in neutralising acidity in the stomach ?
- Name the acids present in
(i) Vinegar (ii) Orange
(iii) Lemon (iv) Tomatoes.
- The pH of fresh milk is 6. Will its pH value increase or decrease when it changes into curd (yoghurt) ? Why ?
- (i) An acidic solution contains ions.
(ii) A basic solution contains ions.
- Name two acid-base indicators ?
- The pH values of some substances are given below:
(i) Apples : 5.0 - 6.5
(ii) Onion : 6.0 - 7.0
(iii) Mint : 7.0 - 8.0

Which of these are most (i) acidic (ii) basic ?

- What is the pH of an acid having $[H^+] = 10^{-3} M$
- Will the OH^- ions concentration increase or decrease if a 1M NaOH solution is diluted with water ?
- Two solutions A and B have pH of 5 and 8 respectively. Which solution will be basic in nature?
- Four test tubes A, B, C and D contain solutions of pH 3.0, 5.0, 6.0 and 6.5. Arrange these in decreasing order of (i) H_3O^+ ions (ii) acidic character.
- Which of the following have large pH values.
(i) 1M CH_3COOH or 1M HCl
(ii) 1M HCl or 1M NaOH
(iii) 1M HCl or 0.01 M HCl
- Which of the following will have pH more than 7 and which have pH less than 7?
(i) Saliva produced in the mouth by salivary glands.
(ii) pH of human blood
(iii) Bee sting
(iv) Acid rain
(v) Digestive system

17. Complete the following table

Substance	Colour in			pH value <math>< 7</math> or >7
	Blue litmus solution	Methyl orange	Phenolphthalein	
1. Acetic acid				
2. Magnesium hydroxide				
3. Lemon juice				
4. Hydrochloric acid				
5. Baking soda				

18. Write the approximate colour of the universal indicator with the solutions having the given pH values

pH	Colour	pH	Colour
1	9
5	10
7	13

19. The following data about the pH of different solutions are given:

Substance	pH	Substance	pH
A. Vinegar	2.4-3.4	D. 0.1 M NH_3 (household ammonia)	11.6
B. Coffee	4.5-5.5	E. Milk of magnesia	10
C. Tomato juice	4.0-4.4	F. Battery acid	0.5

Answer the following questions based on the above data :

- Which solution is most acidic ?
- Which solution is most basic ?
- Which substance in the above list is used as an antacid ?
- Which solution can be used to treat wasp stings?
- Will pH of solution A increase or decrease on adding water to it ?
- Select the substances from the following list which turn blue litmus solution red.
(i) Tomato juice (ii) Tooth paste
(iii) Milk of magnesia (iv) Coffee
(v) Wine (vi) Household ammonia
(vii) Vinegar (viii) Battery acid

- (iii) Chlorine gas is evolved from the reaction of acid with sodium carbonate solution.
- (iv) The gas evolved is collected in a bottle so that acid from the delivery tube mixes with the sodium carbonate solution.

Fig. 10 Soda-acid fire extinguisher. The acid solution can be used with pressure from the pump to direct the fire.

Carbon dioxide will come out of the wash bottle with pressure from the pump to direct the fire by directing it towards burning substance.

Conclusion : Carbon dioxide is evolved when sodium hydrogen carbonate reacts with dil. H_2SO_4 as follows:
 $2NaHCO_3 + H_2SO_4(dil) \rightarrow Na_2SO_4 + 2H_2O + 2CO_2$
 Carbon dioxide is non-supporter of combustion and heavier than air, therefore, it covers the burning substance and cuts the supply of air. Thus, it extinguishes fire.

Worksheet

- What do you call the property of losing water of crystallisation?
- Fill in the blanks:
 - The chemical formula of soda ash is
 - The common name of $Na_2CO_3 \cdot 10H_2O$ is
 - Brine is a saturated solution of
- Write the chemical name and formula of baking soda.
- State whether the aqueous solution of washing soda is acidic or alkaline.
- Name a sodium compound which is used for softening hard water.
- Give one example each of (i) normal salt (ii) acidic salt (iii) basic salt.
- Name the acid and the base which form the salts:
 - Ammonium chloride
 - Sodium carbonate.
- Name the most acidic and most basic salt from the following:
 - Sodium formate
 - Ammonium carbonate
 - Copper sulphate
- Which of the following salts has highest pH value (assuming same concentration)
 - ammonium chloride
 - sodium nitrate
 - potassium carbonate
- Complete the following sentences:

Zinc sulphate is a salt of acid and base. Its solution is in nature. Its solution changes

..... litmus solution and give colour with methyl orange. Its pH is than 7.

- Name the two main constituents of baking powder.
- What is efflorescence? Name one compound which shows efflorescence.
- Give chemical formula of:
 - Caustic soda
 - Washing soda.
 - Baking soda.
- What happens when sodium hydrogen carbonate is strongly heated?
- Which compound is used as an antacid : Na_2CO_3 or $NaHCO_3$?
- Name the three main products of chlor-alkali process.
- What is the chemical name of common salt?
- What is the chemical formula of Plaster of Paris? How is it prepared?
- What is the common name of the compound $CaOCl_2$?
- Name the compound of calcium used for disinfecting drinking water. Give its chemical formula.
- Fill in the blanks:
 - Plaster of Paris is obtained by heating
 - The chemical formula of Plaster of Paris is
 - The chemical formula of bleaching power is



Home Assignment

Worksheet Complete Chapter

3

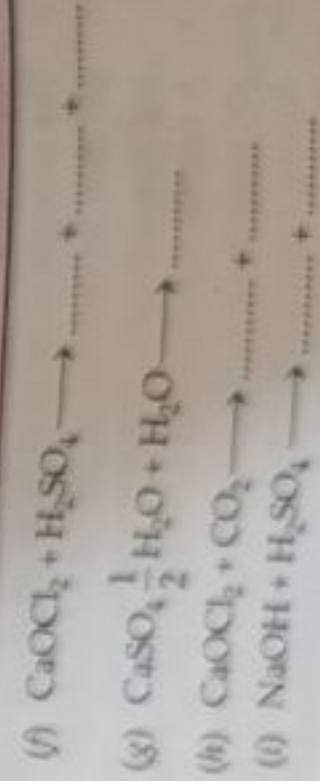
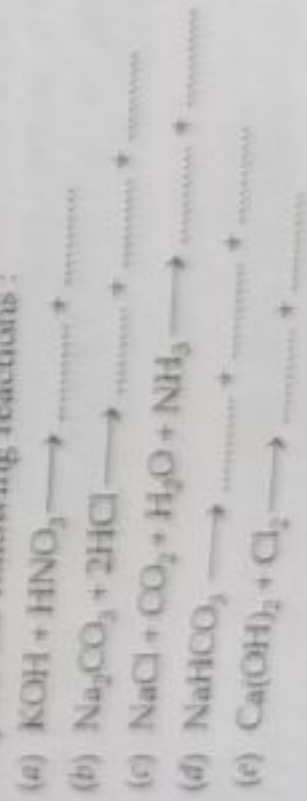
- A piece of zinc metal is dropped in dilute solution of hydrochloric acid. Answer the following :
 - Which gas is liberated when the metal reacts with the acid?
 - How will you test the presence of this gas ?
 - Is it lighter or heavier than air ?
 - Can we use dil. sulphuric acid in place of dil. HCl ?
- You are given three solutions A, B and C. The pH values of the solutions are 4.5, 7.0 and 10.0 respectively.
 - Which of these is acidic ?
 - Which of these is basic ?
 - Which of these has
 - maximum concentration of H_3O^+ ion?
- Complete the following table :

Substance	Chemical formula	Chemical name
(i) Bleaching power
(ii) Washing soda
(iii)
(iv)	NaCl	Sodium hydroxide
(v) Slaked lime
(vi) Plaster of Paris

- Give an example each of :
 - basic salt
 - acidic salt
 - mixed salt
 - normal salt

Salt	Formula	Salt of		Nature
		acid	base	
(i) Zinc sulphate	(acidic, basic or neutral)
(ii) Potassium nitrate
(iii) Sodium acetate
(iv) Sodium carbonate
(v) Copper sulphate

- Complete the following reactions :



Answers and Hints on Page 132

Class Assignments

A. Oral Questions

- Will the pH of CH_3COOH be ...
- Name two strong acids.