Chemical Properties of Acids and Bases

1. **While constructing a house a builder select marble floor and marble tabletop for cooking wear vinegar and juices of lemon turmeric etc are more often used for cooking .will you agree to this selection and why ?**
2. **You are provided with three test tubes C, A and B which contain distilled water, acidic solution and basic solution. If you are given blue litmus paper only, how will Identify the content of each test tube?**
3. **When soap is scrubbed on a stain of curry on a white cloth, why does it become reddish brown, and turns yellow again when the cloth is washed with plenty of water?**
4. **Blue litmus solution is added to two test tubes A and B containing dilute HCI and NaOH solution respectively. In which test tube a colour change will be observed? State the colour change and give its reason.**
5. **How are basis different from alkalis? Are all bases alkali?**
6. **Define olfactory indicator. Substance which can be used as olfactory indicators**
7. **2 ml of sodium hydroxide solution is added to a few pieces of granulated zinc metal taken in a test tube. When the contents are warmed, a gas evolves which is bubbled through a soap solution before testing. Write the equation of the chemical reaction involved and the test to detect the gas. Name the gas which will be evolved when the same metal reacts with dilute solution of a strong acid**
8. **What is observed when 2 mL of dilute hydrochloric acid is added to 1 g of sodium carbonate taken in a clean and dry test tube? Write chemical equation for the reaction involved.**
9. **Solution a gives Pink colour when a drop of phenolphthalein indicator is added to it . Solution B gives red colour when a drop of methyl orange is added to it. What type of solution are A and B and which one of solution A and B will have a higher ph value**
10. **A cloth strip dipped in onion juice is used for testing a liquid X. The liquid exchanges its odour. Which type of an indicator is onion juice? The liquid turns blue litmus red. List the observation the liquid X will show on reaction with following**
    (a) Zinc granual (b) Solid sodium carbonate
11. **What happens when nitric acid is added to egg shell.**
12. **Equal lengths of magnesium ribbons are taken in test tubes A and B. Hydrochloric acid (HCl) is added to test tube A, while acetic acid (CH_3 COOH) is added to test tube B. Amount and concentration taken for both the acids are same. In which test tube will the fizzing occur more vigorously and why?**
13. **Name the gas which is usually produced when dilute sulfuric acid react with a metal. illustrate it with an example. how will you test the evolution of this case?**
14. **What do you observe when dilute HCl is added on zinc pcs taken in a test tube? How would you identify the gas evolved write one use of this gas?**
15. **What will happen:**
    a) **If a lightened candle is brought near the mouth of gas jar containing hydrogen gas**
    b) **If carbon dioxide gas pass through the lime water**
    c) **On passing excess carbon dioxide pass through the lime water**
16. **A student dropped a few pieces of marble in dilute hydrochloric acid contained in a test tube. The evolved gas was passed through lime water. What change would be observed in lime water? Write balanced chemical equations for both the changes observed.**

17. Write an activity to show the reaction of with metal carbonates and metal hydro carbonate salts.
18. What happens when acetic acid is added in a solution of Na_2CO_3 in a test tube? Write the equation for detecting the gas evolved.#
19. What is a neutralisation reaction. give to example.
20. A student took a small amount of copper oxide in a conical flask and added dilute hydrochloric acid to it with constant stirring. He observed a change in colour of the solution.

(i) Write the name of the compound formed and its colour.
(ii) Write a balanced chemical equation for the reaction involved.

21. Write the main difference between an acid and a base. With the help of suitable examples explain the term neutralization and the formation of- (1) acidic, (il) basic and (iii) neutral salts

What do all acid and all bases have in common

1. What property do acid and bases have in common. explain it with example.
2. Write the name given to basis that are highly soluble in water. give an example .
3. Why do HCL and nitric acid etc shows acidic character in aqueous solution while solution of compound like glucose and alcohol do not show acid character.
4. State reason for the following
   a) Dry HCL gas does not change the colour of the dry litmus paper
   b) Alcohol and glucose also contain hydrogen but does not conduct electricity
   c) Concentrated nitric acid ion is affected when a solution of an acid is diluted
   d) Care must be taken while diluting concentrated nitric acid with water?
   e) Distilled water not conduct electricity, whereas rain water does
5. Show the ionic product form on dissolving potassium hydroxide in water.

How strong are acid or base solution?

1. 5 solution A,B,C,D and E showed PH 4,7,11 and 9 respectively went tested with universal indicator .which solution a. Neutral b. Strongly alkaline c. Strongly acid d. Weekly acid
2. Three acidic solution A,B,C have ph 0,3 and 5 respectively
   I. This solution has highest concentration of H+ ion
   II. Which solution has the lowest concentration of H + ions
3. Fresh milk has a pH of 6. How do you think the pH will change as it turns into curd? Explain your answer.
4. A milkman adds a very small amount of baking soda to fresh milk.
   (a) Why does he shift the pH of the fresh milk from 6 to slightly alkaline?
   (b) What do you expect to observe when this milk comes to a boil?
   (c) Why does this milk take a long time to set as curd?
5. Define universal indicator. Mention it one use
6. How concentrated sulphuric acid can be diluted? describe the process
7. A solution 'X' gives orange colour when a drop of universal indicator is added to it. On the other hand, another solution "Y" gives bluish-green colour when a drop of universal indicator is added to it. What are the types of solution 'X' and 'Y' and what type of pH would they have
8. (i) Write the chemical name and molecular formula of tooth enamel.
   (ii) How does it get corroded? What is the preventive measure for this

9. **Five solutions P, Q, R, S and T when tested with universal indicator showed pH of 13, 8, 1, 7 and 5 respectively.**

(a) Which solution is (1) strongly alkaline (ii) weakly acidic?

(b) Arrange the pH in the increasing order of hydrogen ion concentration

10. **You are given two solutions A and B. The pH of solution A is 6 and pH of solution B is 8.**

(i) Identify the acidic and basic solution.

(ii) Which solution has more H ion concentration? Give reason for your answer.

(b) Why is HCI a stronger acid than acetic acid? Explain.

11. **Under what soil condition do you think a farmer would treat the soil of his fields with quick lime (calcium oxide) or slaked lime (calcium hydroxide) or chalk (calcium carbonate)?**
12. **Why does bee sting cause pain and irritation? Rubbing of baking soda on the sting area gives relief. How**

More about salts

1. **Write the names of two salt belonging to Sodium family**
2. **Identify the acid and the base from which sodium chloride is obtained. Which type of salt is it? When is it called rock salt? How is rock salt formed?**
3. **Which three chemical substances are obtained when electricity is passed through an aqueous solution of brine? Write one industrial use of each**
4. **Write chemical name and formula of bleaching powder what happens when it is exposed to air?**
5. **Write chemical equation to represent the action of atmospheric carbon dioxide gas on bleaching powder when it exposes in air?**
6. **(a) Identify the compound of calcium which is yellowish white powder and is used for disinfecting drinking water. Write its chemical name and formula. How is it manufactured? Write the chemical equation for the reaction involved. Also list two other uses of the compound.**

   (b) Write the balanced chemical equation of chlor-alkali process
7. **How is bleaching powder prepared how does bleaching powder (1) Smell strongly of chlorine (2) Not dissolved completely in water?**
8. **The Ph scale of salt used to make tasty and crispy pakora is 9. Identity the salt and chemical equation for this information. list it two uses.**
9. **With the help of a chemical reaction explain how a soda-acid fire-extinguisher helps in putting out a fire?**
10. **Salt 'P', commonly used in bakery products, on heating gets converted into another Salt 'Q' which itself is used for the removal of hardness of water and a gas 'R' is evolved. The gas 'R' when passed through freshly prepared lime water turns milky. Identify 'P', 'Q' and 'R', giving chemical equation for the justification of your answer**
11. **How will you distinguish between baking powder and washing soda by heating?**
12. **Write the chemical name and chemical formulla of washing soda.**

    (b) How is it obtained from sodium chloride? Give equations of the reactions.

    Or, How is washing soda prepared from sodium carbonate? Give its chemical equation. State the type of this salt. Name the type of hardness of water which can be removed by it?

    (c) Why it is called a basic salt? Give its any one use.
13. **How can it be proof that the water of crystallization makes a difference the state of and colour of a compound?**

14. What is meant by water of crystallization? How would you show that copper sulphate crystal contains water of crystallization? Give the Chemical formula of 4 compounds as example

15. What is the chemical formula of plaster of Paris? How is it prepared? state the common and chemical name of the compound formed when plaster of Paris is mixed with water.

16. A white powder is used by doctor to support fractured bones. Write the chemical name of it. Write the chemical equation of its preparation. Why should it be stored in a dry place? Give one more use of the white powder.

17. Give reason for the following

- **a) Only half of water molecule is shown in the formula of plaster of Paris**
- **b) Sodium hydrogen carbonate is used as an antacid**
- **c) On strong heating blue coloured copper sulphate crystal turn white**

18. During electrolysis of brine, a gas G is liberated at anode. When this gas G is passed through slake Lime , A compound C is formed which is used for disinfecting drinking water.

- **a) Write formula of G and C**
- **b) State the chemical equation involved**
- **c) What is the common name of compound C. Give its chemical name**

19.Consider the following salts:

(1) YCI (ii) NH_4X (i) ZCO_3

(a) What would be the pH of the salt solution if in YCI, Y is sodium? Give reason for your answer.

(b) If in salt NH4X, X is nitrate, then its solution will what colour with universal indicator? Why?

(c) What would be the change in colour in blue litmus solution if ZCO_3, is added to it

and Z is potassium