



**Sree Sainath Nagar, Tirupati – 517102**

**HOLIDAY HOMEWORK 2018-19**

**CLASS : X**

**SUBJECT : CHEMISTRY**

**1.Name the acid present in the following:**

**(i) Tomato (ii) Vinegar (iii) Tamarind**

**2.15 mL of water and 10 mL of sulphuric acid are to be mixed in a beaker**

**(i) State the method that should be followed with reason.**

**(ii)What is this process called?**

**3. Explain how antacid works.**

**4.(a) Define olfactory indicators. Name two substances which can be used as olfactory indicator.**

**(b) Choose strong acids from the following:**

**CH<sub>3</sub>COOH, H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>CO<sub>3</sub>, HNO<sub>3</sub>.**

**5.Explain the action of dilute hydrochloric acid on the following with chemical equation:**

**(i) Magnesium ribbon (ii) Sodium hydroxide (iii) Crushed egg shells**

**6.State reason for the following statements:**

**(i) Tap water conducts electricity whereas distilled water does not.**

**(ii) Dry hydrogen chloride gas does not turn blue litmus red whereas dilute hydrochloric acid does.**

**(iii) During summer season, a milk man usually adds a very small amount of baking soda to fresh milk.**

**(iv) For a dilution of acid, acid is added into water and not water into acid.**

**(v) Ammonia is a base but does not contain hydroxyl group.**

**7.Name the natural source of each of the following acid**

**(i) Citric acid. (ii)Oxalic acid.**

**(iii)Lactic acid. (iv)Tartaric acid.**

**8.Equal length of magnesium ribbon are taken in two test tubes 'A' and 'B.**

**H<sub>2</sub>SO<sub>4</sub> is added to test tube 'A' and H<sub>2</sub>CO<sub>3</sub> in the test tube 'B' in equal amounts:**

**(a) Identify the test tube showing vigorous reaction.**

- (b) Give reason to support your answer.
- (c) Name the gas liberated in both the tubes. How will you prove its liberation?
- (d) Write chemical equations for both reactions.
- (e) Out of the two acids taken above
  - (i) which one will have lower pH value.
  - (ii) lower  $H^+$  concentration respectively.

9. How will you test for the gas which is liberated when hydrochloric acid reacts with an active metal?

10.(a) Write the name given to bases that are highly soluble in water. Give an example.

(b) How is tooth decay related to pH? How can it be prevented?

(c) Why does bee sting cause pain and irritation? Rubbing of baking soda on the sting area gives relief. How?

11. Describe an activity with diagram to illustrate that the reaction of metal carbonates and metal bicarbonates with acids produces carbon dioxide. Write the relevant equations of all the reactions that take place. Name any two forms in which calcium carbonate is found in nature.

12.(i) Explain why is hydrochloric acid a strong acid and acetic acid, a weak acid. How can it be verified?

(ii) Explain why aqueous solution of an acid conducts electricity.

(iii) You have four solutions A, B, C and D. The pH of solution A is 6, B is 9, C is 12 and D is 7,

(a) Identify the most acidic and most basic solutions.

(b) Arrange the above four solutions in the increasing order of  $H^+$  ion concentration.

(c) State the change in colour of pH paper on dipping in solution C and D.

13. While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?

14. A student dropped few pieces of marble in dilute hydrochloric acid, contained in a test-tube. The evolved gas was then passed through lime water. What change would be observed in lime water? What will happen if excess of gas is passed through lime water? With the help of balanced chemical equations for all the changes explain the observations.

15. (a) Mention the pH range within which our body works. Explain how antacids

give relief from acidity. Write the name of one such antacid.

(b) Fresh milk has a pH of 6. How does the pH will change as it turns to curd? Explain your answer.

(c) A milkman adds a very small amount of baking soda to fresh milk. Why does this milk take a longer time to set as curd?

(d) Mention the nature of toothpastes. How do they prevent tooth decay?

16. (a) Explain the following chemical properties of acids with the help of balanced chemical equations only.

(i) When an acid reacts with a metal carbonate.

(ii) When an acid reacts with a metal bicarbonate.

(iii) When an acid reacts with a metal oxide.

(b) You are given three solutions A, B and C with pH values 2, 10 and 13 respectively. Write which solution has more hydrogen ion concentration among the three and state the nature 'acidic or basic' of each solution.

17.(a) A metal compound 'X' reacts with dil.  $\text{H}_2\text{SO}_4$  to produce effervescence, The gas evolved extinguishes a burning candle. If one of the compound formed is calcium sulphate, then what is 'X' and the gas evolved? Also, write a balanced chemical equation for the reaction which occurred.

(b) (i) Name one antacid. How does it help to relieve indigestion in stomach?

(ii) A farmer treats the soil with quicklime or calcium carbonate. What is the nature of soil? Why does the farmer treat the soil with quicklime?

18. What are strong and weak acids? In the following list of acids, separate strong acids from weak acids.

Hydrochloric acid, citric acid, acetic acid, nitric acid, formic acid, sulphuric acid.

19. A student dropped few pieces of marble in dilute  $\text{HCl}$  contained in a test tube. The evolved gas was passed through lime water.

(i) What change would be observed in lime water?

(ii) Write balanced chemical equation for the above change.

20. What is universal indicator?.

21. What is a neutralisation reaction? Give two examples.

22. What is tooth enamel chemically? State the condition when it starts corroding. What happens when food particles left in the mouth after eating degrade? Why do doctors suggest use of tooth powder/toothpaste to prevent

**tooth decay?**

**23.(a) What is an alkali? Give an example.**

**(b) Why do HCl, HNO<sub>3</sub>, etc. show acidic characters in aqueous solutions while solutions of compounds like alcohol and glucose do not show acidic character?**

**24. Compounds like alcohols and glucose also contain hydrogen but are not categorized as acids. Discuss an activity to prove it.**

**25. The pH of a sample of vegetable soup was found to be 6.5. How is this soup likely to taste?**

**26. Which bases are called alkalies? Give an example of alkalies.**

**27. Write a balanced chemical equation for the reaction between sodium carbonate and hydrochloric acid indicating the physical state of the reactants and the products.**

**28. Write a balanced chemical equation for a neutralisation reaction, mentioning the physical state of the reactants and the products.**

**29. What would be the colour of red litmus in a solution of sodium carbonate?**

**30. Which gas is evolved when sodium hydrogencarbonate reacts with dilute hydrochloric acid?**

**31. Curd is not kept in copper and brass utensils. Why?**

**32. Name the gas usually liberated when a dilute acid reacts with a metal. What happens when a burning candle is brought near this gas?**

**33. What effect does an increase in concentration of H<sup>+</sup>(aq.) in a solution have on the pH of solution?**

**34. Which one of these has a higher concentration of H<sup>+</sup> ions ? 1 M HCl or 1 M CH<sub>3</sub>COOH**

**35. Which gas is generally liberated when a dilute solution of hydrochloric acid reacts with an active metal?**

**36. What is the colour of litmus in a solution of ammonium hydroxide?**

**37. Name the products formed in each case when**

**(a) hydrochloric acid reacts with caustic soda.**

**(b) granulated zinc reacts with caustic soda.**

**(c) carbon dioxide is passed into lime water.**

**38.(a) What would be the colour of the solution when copperoxide and dilute hydrochloric acid are mixed?**

**(b) Write the chemical equation which represents that the effect of base is neutralized by the acid and viceversa.**

**39. A knife, which is used to cut a fruit, was immediately dipped into water containing a few drops of blue litmus solution. If the colour of the solution is changed to red what inference can be drawn about the nature of the fruit and why?**

**40. A person is suffering from indigestion due to the intake of hot spicy food. What you will prescribe to the patient? Give the name of a chemical that can give relief to him.**