

Octahedral classes, kharadi
2nd floor, yashwant plaza, near bank of India,

Class 10 - Science
acid base and salt

Maximum Marks: 70

Time Allowed: 1 hour and 30 minutes

General Instructions:

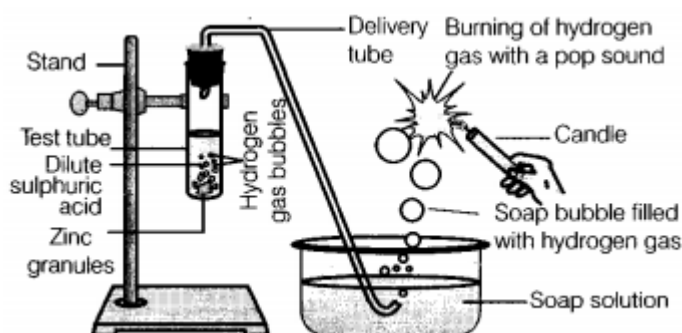
ANSWER ALL QUESTIONS

Section A

1. How is an acid or base diluted ? 1
2. Why should curd and sour substance not be kept in brass and copper vessels. 1
3. Why does distilled water not conduct electricity, whereas rain water does? 1
4. What is an acid ? 1
5. Write the chemical name and formula of bleaching powder. 1
6. Write the name and chemical formula of the products formed by heating gypsum at 373 K. 1
7. Why does an aqueous solution of an acid conduct electricity? 1
8. Which solution is more acidic, one with a pH of 4 or one with a pH of 1? 1
9. Name the sodium compound which is used for softening of hard water. 1
10. Give the name and formula of two: 1
 - (i) strong monobasic acids
 - (ii) two weak dibasic acids
11. What is the chemical formula of washing soda? What happens when this soda is exposed to air? 2
12. Complete the following equation: 2
$$\text{NaOH} + \text{Zn} \rightarrow \text{ ______ } + \text{ ______ }$$
13. Differentiate between a strong acid and weak acid. 2
14. What do you understand by basic oxide ? Give two examples 2
15. What is observed when sulphur dioxide is passed through (i) lime water (ii) water? Also write chemical equations for the reactions that takes place. 2
16. Compounds such as alcohols and glucose also contain hydrogen but are not categorized as acids. Describe an activity to prove it. 2
17. i. State the purpose of developing pH scale. 2
 - ii. Mention the pH range for acid and bases.

18. What is 'baking powder'? How does it make the cake soft and spongy? 2
19. Write a note on pH scale. 2
20. What happens when nitric acid is added to an egg shell? 2
21. How is plaster of Paris chemically different from gypsum? How may these be inter converted? Write one use of plaster of Paris? 2
22. Rahul was playing with his friends. Suddenly, Rahul was stung by a honeybee and was in great pain. Immediately, his friends call his mother. She applied a coating of toothpaste on the affected area and then took him to the doctor. Read the above passage and answer the following questions. 2
- What could be the reason for this burning pain?
 - Why did his mother applied toothpaste on the affected area?
 - What qualities are possessed by Rahul's friends?
23. Name the gas which is liberated when an acid reacts with a metal. Illustrate with an example. How will you test the presence of this gas? 2
24. Farmers are using a large number of pesticides and fertilisers in their fields to increase crop production and to enhance their profits. But by doing so, they are causing damage to the soil as well as to the environment. Do you agree with this statement? Why should we avoid eating fruits and vegetables without washing them properly? 2
25. State reason for the following: 2
- Dry HCl gas does not change the colour of the dry blue litmus paper.
 - Alcohol and glucose also contain hydrogen, but do not conduct electricity.
 - Concentration of H_3O^+ ions is affected when a solution of an acid is diluted.
26. The conditions preferred by some plants are shown in the table below: 2
- | Plant | Apple | Potato | Black currant | Mint | Onion | Strawberry | Lettuce |
|-------|-----------|-----------|---------------|-----------|-----------|------------|-----------|
| pH | 5.0 - 6.5 | 4.5 - 6.0 | 6.0 - 8.0 | 7.0 - 8.0 | 6.0 - 7.0 | 5.0 - 7.0 | 6.0 - 7.0 |
- Which plants grow well over the largest range of pH values?
 - Which plant can grow in the most acidic soil?
 - Which plant can grow in the basic soil?
27. Under what soil condition do you think a farmer would treat the soil of his field with quicklime (calcium oxide) or slaked lime (calcium hydroxide) or chalk (calcium carbonate). 2
28. Explain why for diluting an acid, concentrated acid is added to water and not water to concentrated acid ? 2

29. What are strong and weak acids? In the following list of acids, separate strong acids from weak acids: 2
 Hydrochloric acid, citric acid, acetic acid, nitric acid, formic acid, sulphuric acid
30. Anhydrous hydrogen chloride is not an acid but its aqueous solution is a strong acid. Explain 2
31. Discuss the role of pH in (a) digestive system (b) causes of tooth decay. 4
32. In the following schematic diagram for the preparation of hydrogen gas as shown in the figure, what would happen if the following changes are made? 4



- i. In place of zinc granules, same amount of zinc dust is taken in the test tube.
 - ii. Instead of dilute sulphuric acid, dilute hydrochloric acid is taken.
 - iii. In place of zinc, copper turnings are taken.
 - iv. Sodium hydroxide is taken in place of dilute sulphuric acid and the test tube is heated.
33. Acetic acid is a weak acid and ammonia is a weak base. Discuss the term weak. 4
34. Explain hydrolysis of various types of salts. 4
35. Name any ten hydrated salts. 4