



# CHEMISTRY

## BOOKS - NAND LAL PUBLICATION

### ACIDS, BASES AND SALTS

#### Activity 2 1

1. Tabulate your observation in Table.



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## Activity 2 2

1. Test the change in the odour of clove oil, vanilla with dil. HCl and dilute NaOH.



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## Activity 2 3

1. What do you observe on the surface of zinc granules?



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2. When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas. What type of change is it? Explain.



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## Activity 2 6

1. Why does the colour of copper sulphate solution change, when an iron nail is dipped

in it?



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2. Is there any colour change for the reaction  
ture?



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3. Why did the colour of phenolphthalein  
change after the addition of an acid?



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4. Why do you think this happened ?



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## Activity 2 7

1. What has happened to the copper oxide ?



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## Activity 2 8

1. Repeat the experiment separately with glucose and alcohol solutions. What do you observe now?



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2. When does a bulb glow ?



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## Activity 2 9

1. What do you observe ? Is there a gas coming out of the delivery tube?



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2. In which case does the litmus paper change colour ?



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3. On the basis of the above activity, what you infer about the acidic character of :

dry HCl gas



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4. On the basis of the above activity, what you infer about the acidic character of :

HCl solution ?



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## Activity 2 10

1. Is this an exothermic or endothermic process



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2. Repeat the above Activity with sodium hydroxide pellets and record your observations.



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## Activity 2 11

1. What is the nature of each substance on the basis of your observations ?



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## Activity 2 12

1. What can you conclude about the ideal soil pH for the growth of plants in your region ?



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## Activity 2 13

1. Work out the formula of sodium carbonate.

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2. Identify the acids and bases from which of the above salts may be obtained.

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3. How many families can you identify among the salts given in this activity ?



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## Activity 2 14

1. What is the colour of the copper sulphate after heating?



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2. Do you notice water droplets in the boiling be ? Where have these come from?

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3. What do you observe? Is the blue colour of copper sulphate restored ?

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**Intext Questions**

1. You have been provided with three test tubes one of them contains distilled water and the other two contain an acidic solution and a basic solution respectively . If you are given only red litmus paper, how will you identify the contents of each test tube?



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2. Why should curd and sour substances not be kept in brass and copper vessels?



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3. Which gas is usually liberated when an acid reacts with a metal? Illustrate with an example. How will you test for the presence of this gas?



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4. Metal compound A reacts with dilute hydrochloric acid to produce effervescence the gas evolved extinguishes a burning candle

write a balanced chemical equation for the reaction if one the compounds formed is calcium chloride.



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5. Why do  $\text{HCl}$ ,  $\text{HNO}_3$  etc, show acidic characters in aqueous solutions while solutions of compounds like alcohol and glucose do not show acidic character?



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6. Why does an aqueous solution of an acid conduct electricity?



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7. Why does dry HCl gas not change the colour on the dry litmus paper?



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8. while diluting an acid, Why is it recommended that the acid should be added to water?



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9. How is the concentration of hydronium ions ( $H_3O^+$ ) affected when a solution of an acid is diluted ?



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10. How is the concentration of hydroxide ions(OH) affected when excess base is dissolved in a solution of sodium hydroxide?



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11. You have two solutions a and b the ph of solution a is 6 and ph of solution b is 8. which solution has more hydrogen ion concentration? Which of this is acidic and which one is basic?



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**12.** What effect does the concentration of  $H^+$  (aq) ions have on the nature of the solution?



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**13.** Do basic solution also have  $H^+$  (aq) ions? If yes, then why are these basic?



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14. Under what soil condition do you think farmer would treat the soil of his fields with quick lime (calcium oxide ) or slaked lime (calcium hydroxide) or chalk (calcium carbonate)?



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15. What is the common name of the compound  $\text{CaOCl}_2$ ?



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**16.** Name the substance which on treatment with chlorine yields bleaching powder.



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**17.** Name the sodium compound which is used for softening hard water.



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**18.** What will happen if a solution of sodium hydrogencarbonate is heated? Give the equation of the reaction involved



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**19.** Write an equation to show the reaction between plaster of paris and water.



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1. A solution turns red litmus blue, its pH is likely to be

A. 1

B. 4

C. 5

D. 10

**Answer: D**



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2. A solution reacts with crushed egg-shells to give a gas that turns lime water milky the solution contains:

A.  $NaCl$

B.  $HCl$

C.  $LiCl$

D.  $KCl$

**Answer: B**



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3. 10 ml of a solution of NaOH is found to be completely neutralised by 8 ml of HCl. If we take 20 ml of the same solution of NaOH, the amount of HCl solution ( the same solution as before) required to neutralise it will be:

A. 4 mL

B. 8 mL

C. 12 mL

D. 16 mL

**Answer: D**



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4. Which one of the following types of medicines is used for treating indigestion?

A. Antibiotic

B. Analgesic

C. Antacid

D. Antiseptic

**Answer: C**



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5. Write word equations and then balanced equations for the reactions taking place when -dilute sulphuric acid reacts with zinc granules.



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6. Write word equation and balance equation for the reactions taking place when : dilute hydrochloric acid reacts with magnesium ribbon



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7. Write word equations and then balanced equations for the reactions taking place when -dilute sulphuric acid reacts with aluminium powder.



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8. Write word equations and then balanced equations for the reaction taking place, when

dilute hydrochloric acid reacts with iron filings.



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9. Compounds such as alcohols and glucose also contain hydrogen but are not categorised as acids. Describe an activity to prove it,



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10. Why does distilled water not conduct electricity, whereas rain water does ?



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**11.** Why do acids not show acidic behaviour in the absence of water?



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**12.** Five solutions A, B, C, D and E when tested with universal indicator showed pH as 4, 1, 11, 7, and 9 respectively, which solution is neutral?

strongly alkaline?

strongly acidic?

weakly acidic?

weakly alkaline?: arrange the pH in increasing order of hydrogen-ion concentration



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**13.** 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 ( $CH_3COOH$ ) 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?



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**14.** Fresh milk has a pH of 6. How do you think the pH will change as it turns into curds? Explain your answer.



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**15.** A milkman adds a very small amount of baking soda to fresh milk.

why does he shift the ph of the fresh milk from 6 to slightly alkaline?



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**16.** A milkman adds a very small amount of baking soda to fresh milk.

why does he shift the ph of the fresh milk from 6 to slightly alkaline?





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**17.** Plaster of paris should be stored in a moisture-proof container explain why?



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**18.** What is a neutralisation reaction? Give two examples



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**19.** Give two important uses of washing soda and baking soda.



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## Additional Questions

**1.** Write word equation and balance equation for the reactions taking place when : dilute hydrochloric acid reacts with zinc granules



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2. What do you observe? Is there a gas coming out of the delivery tube?



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3. Write formulae of hydrochloric acid, sulphuric acid, nitric acid, acetic acid,



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4. What are strong and weak acids



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5. What is meant by water of crystallisation?



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6. What is plaster of Paris? How is it prepared?  
? Give its properties.



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7. Why is acid added to water for dilution and hot water to acid ?



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8. Write briefly about pH of different solution.



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