CHEMISTRY

NCERT - NCERT CHEMISTRY(ENGLISH)

ACIDS, BASES AND SALTS

Exercise

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 of the compounds formed is calcium chloride.

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5. Why do HCl, 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 of 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 and not water to the acid?

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9. How is the concentration of hydronium ions $\left(H_3O^+\right)$ 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 solutions also have $H^+(aq)$ ions? If yes, then why are these basic?

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14. 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 (calclum carbonate)?

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15. What is the common name of the compound $CaOCl_2$?

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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 hydrocarbonate 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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20. A solution turns red litmus blue, its pH is likely to be

A. 1

B. 4

C. 5

D. 10

Answer:

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21. 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:

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22. 10 mL of a solution of NaOH is found to be completely neutralised by 8 mL of a given solution of HCl. If we take 20 mL of the same solution of NaOH, the amount 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:

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

A. Antibiotic

B. Analgesic

C. Antacid

D. Antiseptic

Answer:

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24. Write word equations and then balanced equations for the reaction taking place when :

(a) dilute sulphuric acid reacts with zinc granules.

(b) dilute hydrochloric acid reacts with magnesium ribbon.

(c) dilute sulphuric acid reacts with aluminium powder.

(d) dilute hydrochloric acid reacts with iron filings.

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

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

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28. 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

(a) neutral?

(b) strongly alkaline?

(c) strongly acidic?

(d) weakly acidic?

(e) weakly alkaline?

Arrange the pH in increasing order of hydrogen-ion concentration.

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29. 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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30. Fresh milk has a pH of 6. How do you think the pH will change as it turns into curd? Explain your answer.

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31. 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) Why does this milk take a long time to set as curd?

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32. Plaster of Paris should be stored in a moisture-proof container. Explain why?

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

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34. Give two important uses of washing soda and baking soda.

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