QB365

Important Questions - Acids, Bases and Salts

10th Standard CBSE

Science Reg.No. : | | | | | | |

Time : 01:00:00 Hrs

Total Marks : 50

Section - A

1) Which one of the following type of medicines is used for treating indigestion? **1**

(a) Antibiotic (b) Analgesic (c) Antacid (d) Antiseptic

2) An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change? **1**

(a) Baking powder (b) Lime (c) Ammonium hydroxide solution (d) Hydrochloric acid

3) Calcium phosphate is present in tooth enamel. Its nature is **1**

(a) basic (b) acidic (c) neutral (d) amphoteric

4) Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements are true about the gas evolved? (i) It turns lime water milky (ii) It extinguishes a burning splinter (iii) It dissolves in a solution of sodium hydroxide (iv) It has a pungent odour **1**

(a) (i) and (ii) (b) (i), (ii) and (iii) (c) (ii), (iii) and (iv) (d) (i) and (iv)

5) Which of the following statements is correct about an aqueous solution of an acid and of a base? (i) Higher the pH, stronger the acid (ii) Higher the pH, weaker the acid (iii) Lower the pH, stronger the base (iv) Lower the pH, weaker the base **1**

(a) (i) and (iii) (b) (ii) and (iii) (c) (i) and (iv) (d) (ii) and (iv)

6) Which of the following is acidic in nature? **1**

(a) Lime juice (b) Human blood (c) Lime water (d) Antacid

7) Which of the following is not a mineral acid? **1**

(a) Hydrochloric acid (b) Citric acid (c) Sulphuric acid (d) Nitric acid

8) Equal volumes of hydrochloric acid and sodium hydroxide solutions of same concentration are mixed and the pH of the resulting solution is checked with a pH paper. What would be the colour obtained? **1**

(a) Red (b) Yellow (c) Yellowish green (d) Blue

9) Which of the following statement is true for acids? **1**

(a) Bitter and change red litmus to blue (b) Sour and change red litmus to blue

(c) Sour and change blue litmus to red (d) Bitter and change blue litmus to red

10) Which of the following are present in a dilute aqueous solution of hydrochloric acid? **1**

(a) $H_3O^+ + CH^-$ (b) $H_3O^+ + OH^-$ (c) $Cl^- + OH^-$ (d) unionised HCl

Section - B

11) What effect does the concentration of hydrogen ions have on the nature of the solution? **2**

12) 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. **2**

13) What happens when nitric acid is added to egg shell? **2**

14) What is alkali? Give an example. **2**

15) What is 'Plaster of Paris' chemically? How is it obtained from gypsum? Write the condition and chemical equation involved in its manufacture. **2**

16) (a) What is the action on litmus of: (i) Dry ammonia gas (ii) Solution of ammonia gas in water (b) State the observations you would make on adding ammonium hydroxide to aqueous solutions of: **2**

17) What are the uses of washing soda? **2**

18) Differentiate between strong and weak acids. Identify the strong and weak acids from the following list of acids: hydrochloric acid, acetic acid, formic acid, nitric acid. **2**

19) Five solutions A. B, C, 0 and E showed pH as 4, 7, 1, 11 and 9 respectively when tested with universal indicator. Which solution is : **2**

(i) Neutral (ii) Strongly alkaline (iii) Strongly acidic (iv) Weakly acidic and (v) Weakly alkaline

20) Explain the action of dilute hydrochloric acid on the following with chemical equation: **2**

(i) magnesium ribbon

(ii) sodium hydroxide

(iii) crushed egg shells

Section - C

21) A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y; it gives a compound Z, used for disinfecting drinking water. Identity X, Y, G and Z. **5**

22) (a) Why is sulphuric acid called 'King of Chemicals'? (b) Describe the three chemical reactions that take place during the conversion of sulphur dioxide to sulphuric aicd in the 'Contact Process'. (c) Why should water be never added dropwise to concentrated sulphuric acid? **5**

23) (i) Define pH scale. Draw a figure showing a variation of pH with the change in concentration of H^+(aq) and OH^- (aq) ions. **5**

(ii) Mention the range of pH of the acidic solution, basic solution, and neutral solution respectively.

24) Account for the following: **5**

(i) State the relation between hydrogen ion concentration of an aqueous solution and its pH.

(ii) An aqueous solution has a pH value of 7.0. Is this solution acidic, basic or neutral?

(iii) Which has a higher pH value, 1MHCl or 1MNaOH solution?

(iv) Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets? What should we do to

prevent it?

(v)How do $[H^+]$ ions exist in water?

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