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CLASS 10 (2018-19)

ASSIGNMENT

ACIDS, BASES, SALTS

Very short answer type question (1 mark)

Q1. Define the following terms:

a) Olfactory indicator: Indicators which give different odours in acidic and basic medium are known as olfactory indicators. Eg. Onion and vanilla.

b) Alkalis: Water soluble bases are called alkalis. Eg. Sodium hydroxide (NaOH)

c) Antacids: Those compounds which neutralise excess of acids in stomach. Eg.- NaHCO_3

Q2. What is Litmus solution?

Ans- Litmus solution is a purple dye which is extracted from lichen, a plant belonging to division thallophyta and commonly used as indicator.

Q3. How will you test for the gas which is liberated when hydrochloric acid reacts with active metal?

Ans- Bring a burning matchstick near the gas. It burns with 'pop' sound showing that it is hydrogen.

Q4. What is aqua regia?

Ans- It is a mixture of conc. HCl and conc. HNO_3 in the ratio 3:1.

Q5. Write a balanced chemical equation for the reaction between sodium carbonate and hydrochloric acid indicating the physical states of reactants and products.

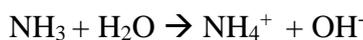
Ans- $\text{Na}_2\text{CO}_3 (\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow 2\text{NaCl} (\text{aq}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O} (\text{l})$

Q6. Which gas is evolved when sodium hydrogencarbonate reacts with dilute hydrochloric acid?

Ans- Carbon dioxide gas is evolved when sodium hydrogencarbonate reacts with dilute hydrochloric acid.

Q7. Dry ammonia gas has no action on litmus paper but solution of ammonia in water turns red litmus paper blue. Why is it so?

Ans- Ammonia dissolves in water to form ammonium hydroxide which is a base and turns red litmus blue.



Dry ammonia gas does not change into OH^- ions.

Q8. Why does HCl (g) not conduct electricity when dissolved in toluene?

Ans- It is because HCl cannot ionise in organic solvent like toluene.

Q9. Name an indicator which indicates various levels of hydrogen ion concentration.

Ans- Universal indicator indicates various levels of hydrogen ion concentration.

Q10. What effect does the concentration of H^+ have on the acidic nature of the solution?

Ans- Acidic nature increases with the increase in conc. of H_3O^+ ions.

Q11. The pH of a sample of vegetable soup was found to be 6.5. How is this soup likely to taste?

Ans- The taste will be slightly sour as it is weakly acidic.

Q12. Which acid and base are used in the formation of the following salts (a) CuSO_4 (b) NaNO_3 ?

Ans- (a) $\text{Cu}(\text{OH})_2$ and H_2SO_4 (b) NaOH and HNO_3

short answer type question (2 or 3 mark)

Q13. 15mL of water and 10mL of sulphuric acid are to be mixed in a beaker

- State the method that should be followed with the reason.
- What is this process called?

Ans- a) The acid is to be added slowly in water to prevent the mixture to be splashed . the reaction is highly exothermic ,therefore , constant cooling should be done.

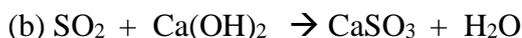
b) The process is called dilution.

Q14. Explain how antacid works?

Ans-Hyperacidity is caused by excess of hydrochloric acid in stomach. Antacid is basic in nature. It neutralises excess of acids and gases giving relief from the pain caused by hyperacidity.

Q15. What is observed when sulphur dioxide is passed through (a) water and (b) limewater. Also write chemical equations for the reactions that take place.

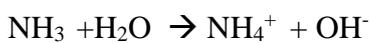
Ans- (a) sulphurous acid is formed.



Lime water turned milky due to formation of calcium sulphite.

Q16.A gas produced in the laboratory is highly soluble in water. Its colourless solution turns pink when few drops of phenolphthalein is added to it. What is the nature of this gas?

Ans- The nature of gas is basic because it turns phenolphthalein pink. The following reaction takes place in aqueous solution. Eg



Q17. The soil in a field is highly acidic. List any two materials which can be added to this soil to reduce its acidity. Give reason for your choice.

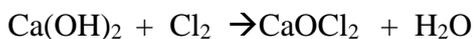
Ans- (i)Lime,(CaO) can be added to neutralize acidity.

(ii) Chalk (CaCO₃) can also be added to neutralize acidity.

It is because CaO and CaCO₃ are basic in nature which neutralize acid present in soil.

Q18. What happens when chlorine is passed over slaked lime at 313K ?Write chemical equation of the reaction involved and state two uses of the product obtained.

Ans-Bleaching powder is formed .



Uses: (i) It is used as bleaching agent in paper and textile industries.

(ii) It is used as disinfectant in purification of drinking water.

Q19. Tooth enamel is one of the hardest substance in our body. How does it undergoes damage due to eating chocolates and sweets? How do toothpastes prevent this damage?

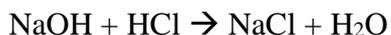
Ans- Tooth enamel is made up of calcium phosphate. Chocolates and sweets produce acid in our mouth which react with enamel and leads to cavities. We should brush our teeth after every meal as well as after eating sweets.

Q20. Explain the action of dilute hydrochloric acid on the following with chemical equation:

a)magnesium :- Hydrogen gas will be formed



b)Sodium Hydroxide:- Sodium Chloride and water will be formed



c)Crushed egg shells:- crushed egg shells are made up of CaCO_3 which reacts with dil. HCl to give brisk effervescence due to CO_2 .



Q21. What is baking soda chemically called? Give reaction involved in this preparation. Write one of its uses?

Ans: Baking soda is chemically called sodium hydrogencarbonate.



It is used as antacid.

Q22. Name the acid present in following:

Ans: (i) Lemon- citric acid

(ii) Milk or curd – lactic acid

(iii) Butter – butyric acid

(iv) tamarind – tartaric acid

(v) Tomato or guava – oxalic acid

