



# VIDYA BHARATI SCHOOL

## Olympiad (2017-18) July

Grade X

Subject: Science

1. What happens when a solution of an acid is mixed with a solution of a base in a test tube?
  - (i) The temperature of the solution increases
  - (ii) The temperature of the solution decreases
  - (iii) The temperature of the solution remains the same
  - (iv) Salt formation takes place
  - (a) (i) only
  - (b) (i) and (iii)
  - (c) (ii) and (iii)
  - (d) (i) and (iv)
2. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?
  - (a) Baking powder
  - (b) Lime
  - (c) Ammonium hydroxide solution
  - (d) Hydrochloric acid
3. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to
  - (a) absorb the evolved gas
  - (b) moisten the gas
  - (c) absorb moisture from the gas
  - (d) absorb  $\text{Cl}^-$  ions from the evolved gas
4. Which of the following salts does not contain water of crystallisation?
  - (a) Blue vitriol
  - (b) Baking soda
  - (c) Washing soda
  - (d) Gypsum
5. Sodium carbonate is a basic salt because it is a salt of
  - (a) strong acid and strong base
  - (b) weak acid and weak base
  - (c) strong acid and weak base
  - (d) weak acid and strong base
6. Calcium phosphate is present in tooth enamel. Its nature is
  - (a) basic
  - (b) acidic
  - (c) neutral
  - (d) amphoteric
7. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?
  - (a) Lemon juice
  - (b) Vinegar
  - (c) Common salt
  - (d) An antacid
8. Which of the following gives the correct increasing order of acidic strength?
  - (a) Water < Acetic acid < Hydrochloric acid
  - (b) Water < Hydrochloric acid < Acetic acid

- (c) Acetic acid < Water < Hydrochloric acid
  - (d) Hydrochloric acid < Water < Acetic acid
- 9. If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done?
  - (a) Wash the hand with saline solution
  - (b) Wash the hand immediately with plenty of water and apply a paste of sodium hydrogencarbonate
  - (c) After washing with plenty of water apply solution of sodium hydroxide on the hand
  - (d) Neutralise the acid with a strong alkali
- 10. Sodium hydrogencarbonate 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
    - (a) (i) and (ii)
    - (b) (i), (ii) and (iii)
    - (c) (ii), (iii) and (iv)
    - (d) (i) and (iv)
- 11. Common salt besides being used in kitchen can also be used as the raw material for making
  - (i) washing soda
  - (ii) bleaching powder
  - (iii) baking soda
  - (iv) slaked lime
    - (a) (i) and (ii)
    - (b) (i), (ii) and (iv)
    - (c) (i) and (iii)
    - (d) (i), (iii) and (iv)
- 12. One of the constituents of baking powder is sodium hydrogencarbonate, the other constituent is
  - (a) hydrochloric acid
  - (b) tartaric acid
  - (c) acetic acid
  - (d) sulphuric acid
- 13. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is
  - (a) acidic
  - (b) neutral
  - (c) basic
  - (d) corrosive
- 14. 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
    - (a) (i) and (iii)
    - (b) (ii) and (iii)
    - (c) (i) and (iv)
    - (d) (ii) and (iv)
- 15. The pH of the gastric juices released during digestion is
  - (a) less than 7
  - (b) more than 7
  - (c) equal to 7
  - (d) equal to 0

16. Which of the following phenomena occur, when a small amount of acid is added to water?
- (i) Ionisation
  - (ii) Neutralisation
  - (iii) Dilution
  - (iv) Salt formation
- (a) (i) and (ii)
  - (b) (i) and (iii)
  - (c) (ii) and (iii)
  - (d) (ii) and (iv)
17. Which one of the following can be used as an acid–base indicator by a visually impaired student?
- (a) Litmus
  - (b) Turmeric
  - (c) Vanilla essence
  - (d) Petunia leaves
18. Which of the following substance will not give carbon dioxide on treatment with dilute acid?
- (a) Marble
  - (b) Limestone
  - (c) Baking soda
  - (d) Lime
19. Which of the following is acidic in nature?
- (a) Lime juice
  - (b) Human blood
  - (c) Lime water
  - (d) Antacid
20. Which of the following is(are) true when HCl (g) is passed through water?
- (i) It does not ionise in the solution as it is a covalent compound.
  - (ii) It ionises in the solution
  - (iii) It gives both hydrogen and hydroxyl ion in the solution
  - (iv) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule
- (a) (i) only
  - (c) (ii) and (iv)
  - (b) (iii) only
  - (d) (iii) and (iv)

**\*For more practice material please click: [www.brilliant.org](http://www.brilliant.org); [www.sofolympiadtrainer.com](http://www.sofolympiadtrainer.com);  
[www.olympiadhelper.com](http://www.olympiadhelper.com)**