



# CHEMISTRY

**BOOKS - MCGROW HILL EDUCATION**

**CHEMISTRY (HINGLISH)**

**ACIDS , BASES AND SALTS**

## Elementary Questions

1. Which of the following ions is furnished by acids in aqueous solution?

A.  $OH^-$  ions

B.  $H^+$  ions

C.  $H_3O^+$  ions

D. None of these

**Answer: C**



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2. Which of the following is acidic in nature?

A. apple juice

B. soap solution

C. slaked lime

D. lime

**Answer: A**



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**3. Which of the following is not a mineral acid?**

A. HCl

B.  $H_2SO_4$

C.  $HCOOH$

D.  $H_2CO_3$

**Answer: C**



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4. Which of the following is not a mineral acid?

A. glycolic acid

B. lactic acid

C. citrus acid

D. tartaric acid

**Answer: B**



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5. Which of the following acids is called the king of the acids?

A. acetic acid

B. phosphoric acid

C. oxalic acid

D. sulphuric acid

**Answer: D**



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**6. Which of the following is a strong acid?**

A. nitric acid

B. citrus acid

C. formic acid

D. lactic acid

**Answer: A**



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7. Which of the following is not an organic acid?

- A. tartaric acid
- B. oxalic acid
- C. ascorbic acid
- D. nitric acid

**Answer: D**



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**8.** The sharp pain caused by the sting of an ant is due to

- A. malic acid
- B. nitric acid
- C. formic acid
- D. lactic acid



**Answer: C**



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**9. Vitamin C is known as**

A. ascorbic acid

B. citrus acid

C. glycolic acid

D. acetic acid

**Answer: A**



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10. Which of the following acid is also known as battery acid that is used in car batteries ?

- A. nitric acid
- B. hydrochloric acid
- C. sulphuric acid
- D. carbonic acid

**Answer: C**



11. Acids are always stored in containers made of

A. plastic

B. glass

C. metals

D. clay

**Answer: A**



12. Acids turn blue litmus

A. green

B. red

C. yellow

D. orange

**Answer: B**



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13. Milk of magnesia is an

A. acid

B. ant acid

C. alkali

D. rock salt

**Answer: B**



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14. Soaps are sodium salts of

A. mineral acids

B. fatty acids

C. bases

D. carbonic acid

**Answer: B**



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**15.** Which type of salts are stored in air tight containers

A. Anhydrous

B. Hydrated

C. Dehydrated

D. Deliquescence

**Answer: D**



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**16. Acidity of aluminum hydroxide is**

A. 1

B. 2

C. 3

D. 4

**Answer: D**



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**17. Basicity of acetic acid is**

A. 4

B. 3



C. 2

D. 1

**Answer: C**



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**18.** Sodium bicarbonate is also known as

A. washing soda

B. baking soda

C. glauber's salt

D. lime soda

**Answer: B**



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**19.** When marble chips are treated with HCl ,  
which of the following gas is liberated?

A.  $CO_2$

B.  $O_2$

C.  $CO$

D.  $NO_2$

**Answer: A**



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**20.** pH of tomato juice is 4, that means it is

A. basic

B. acidic

C. neutral

D. none of these

**Answer: B**



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21. pH of water is 7 so it is

A. acidic

B. neutral

C. basic

D. none of these

**Answer: B**



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22. Which of the following is not a property of acids?

A. all acids have a sour taste

B. acids turn blue litmus red

C. acids turn red litmus blue

D. all acids form  $H^+$  ions in water

**Answer: C**



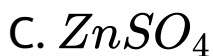
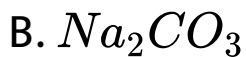
23. The basicity of an acid is defined as

- A. the number of replaceable OH-ions
- B. the number of  $H^+$  ions that can be formed from the acid
- C. the power of the acid to form salts
- D. none of the above

**Answer: B**



24. Which of the following is not an acidic salt?

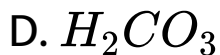
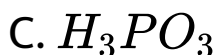
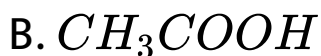
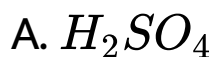


**Answer: B**



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25. Which of the following is a mono basic acid?



**Answer: B**



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**26.** The acidity and alkalinity of a compound is represented on a scale known as

- A. pH scale
- B. Hess scale
- C. Kelvin Scale
- D. none of these

**Answer: A**



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27.  $Fe_2(SO_4)_3$  solution will

- A. turn blue litmus red
- B. turn red litmus blue
- C. turn phenolphthalein solution pink
- D. both (b) and (c)

**Answer: A**



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28. Which of the following statements is not correct?

A. a base is a compound which contains either oxide or hydroxide ions

B.  $NH_3$  when dissolved in water, forms an alkaline solution

C. a base is an electron acceptor

D. an aqueous solution of a base feels soapy to touch

**Answer: C**



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**29.** Which of the following method is not used in preparing a base?

- A. burning of metal in air
- B. adding water to a metal oxide
- C. reaction between an acid and base
- D. heating metal carbonates

**Answer: C**



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**30.** Which of the following oxides when dissolved in water gives a solution which turns blue litmus red?

A.  $MgO$

B.  $CaO$

C.  $CO_2$

D.  $CuO$

**Answer: C**



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**31.** Which of the following methods is not used for preparing a salt?

- A. reaction between an acid and a base
- B. action of acid on metals
- C. action of acid on metal oxides
- D. dissolution of acids in water

**Answer: D**



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**32.** The loss of water of crystallization to the atmosphere by a compound is termed

A. deliquescence

B. dehydration

C. efflorescence

D. hydrolysis

**Answer: C**



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**33.** Which of the following acids is present in vinegar?

A. lactic acid

B. malic acid

C. acetic acid

D. tartaric acid



**Answer: C**



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**34.** Which of the following acid is used in fire extinguishers?

A. hydrochloric acid

B. sulphuric acid

C. nitric acid

D. oxalic acid

**Answer: B**



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**35.** When  $SO_2$  dissolves in water the acid formed

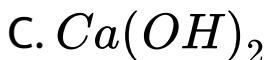
- A. sulphuric acid
- B. sulphurous acid
- C. sulphonic acid
- D. oleum

**Answer: B**



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**36.**  $CO_2$  turns lime water milky, due to the formation of



**Answer: B**



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**37.** Which of the following salt gets hydrolyzed in aqueous solution? A salt of

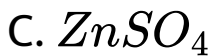
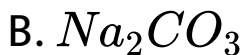
- A. weak acid and weak base
- B. strong acid and weak base
- C. weak acid and strong base
- D. all of these

**Answer: D**



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**38.** Which of the following is not an acidic salt?



**Answer: B**



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**39.** Ammonium chloride is a salt of

- A. weak acid and a weak base
- B. weak acid and a strong base
- C. strong acid and a strong base
- D. strong acid and a weak base

**Answer: D**



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40. Soda water has a pH value

A.  $> 7$

B.  $< 7$

C. 7

D.  $> 14$

**Answer: B**



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**41.** Many salts absorb water from the atmosphere. This property is called

- A. hydration
- B. dehydration
- C. deliquescence
- D. efflorescence

**Answer: C**



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42. Which of the following acid is used by goldsmiths for cleaning gold and silver ornaments?

A. HCl

B.  $H_2SO_4$

C.  $HNO_3$

D.  $H_3PO_4$

**Answer: C**



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**43.** The reaction of metal with acid results in the formation of

A. only Hydrogen gas

B. only salt

C. both salt and hydrogen gas

D. none of these

**Answer: C**



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44. Which of the following is an organic acid?

A. sulphurous acid

B. nitric acid

C. hydrochloric acid

D. formic acid

**Answer: D**



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**45.** Which of the following acid does not react with metals?

A. sulphuric acid

B. phosphoric acid

C. carbonic acid

D. nitric acid

**Answer: C**



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**46.** Acid + Base  $\rightarrow$  Salt + Water. This reaction is known as

- A. neutralisation reaction
- B. decomposition reaction
- C. precipitation reactions
- D. displacement reaction

**Answer: A**



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47. Sodium hydroxide is

A. a base

B. an acid

C. an alkali

D. both base as well as alkali

**Answer: D**



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**48.** Calcium hydroxide is also known as

A. limestone

B. slaked lime

C. quick lime

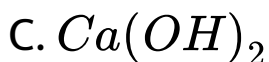
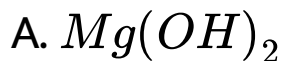
D. washing soda

**Answer: B**



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49. Which of the following base is used as antacid to neutralize stomach acidity?



**Answer: A**



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50. Alkalies turn methyl orange

A. pink

B. yellow

C. red

D. colourless

**Answer: C**



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51. The product formed when the white substance obtained by burning magnesium is dissolved in water is

A. magnesium oxide

B. magnesium carbonate

C. magnesium hydroxide

D. magnesium sulphate

**Answer: C**



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52. Basic salts are formed by neutralization of

A. strong acid and strong base

B. strong acid and weak base

C. weak acid and weak base

D. strong base and weak acid

**Answer: D**



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53. The acidity of soil, which is due to excessive use of fertilizer ammonium sulphate can be neutralized by adding

A. lime

B. caustic soda

C. washing soda

D. none of these

**Answer: A**



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54. The reaction of acetic acid and sodium hydroxide results in the formation of

A. acidic salt

B. basic salt

C. neutral salt

D. none of these

**Answer: B**



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55. A solution of sodium chloride will turn

A. red litmus blue

B. blue litmus red

C. red litmus orange

D. not change the colour of either red or  
blue litmus

**Answer: D**



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56. The reaction of ammonium hydroxide and carbonic acid results in the formation of

- A. ammonium chloride and water
- B. ammonium carbonate and water
- C. only ammonium carbonate
- D. only water

**Answer: B**



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57. Hydrochloric acid, nitric acid and sulphuric acid are known as mineral acids because they

- A. attack minerals
- B. are obtained from minerals
- C. are obtained from crude oil
- D. both (a) and (b)

**Answer: B**



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58. When bitten by ant, the sting causes irritation due to the presence of

- A. a base in the sting
- B. formic acid in the sting
- C. poisonous chemicals
- D. both (a) and (b)

**Answer: B**



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59. When a little sulphur in a spoon is heated, it burns with a blue flame which slowly disappears after some time and we can feel a pungent odour. This pungent odour is due to

- A. carbon dioxide
- B. sulphur dioxide
- C. sulphur gas
- D. sulphuric acid

**Answer: B**



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60. When an oxide of a non-metal reacts with water which of the following is formed?

A. acid

B. base

C. salt

D. none of these

**Answer: A**



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61. Which of the following statement is not correct?

A. all alkalies are bases

B. all bases are not alkalies

C. all bases are alkalies

D. all water soluble hydroxides are alkalies

**Answer: C**



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62. The chemical name of Baking soda is

- A. sodium carbonate
- B. sodium bicarbonate
- C. calcium carbonate
- D. sodium hydroxide

**Answer: B**



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63. Which of the following is a weak base?

A. NaOH

B. KOH

C.  $NH_4OH$

D. None of these

**Answer: C**



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**64.** A basic salt that is used in daily life is

A. sodium acetate

B. sodium chloride

C. ammonium sulphate

D. sodium carbonate

**Answer: D**



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**65.** Which of the following is spread on icy roads to melt ice in cold countries?

A. Sodium bicarbonate

B. Rock salt

C. Sodium hydroxide

D. None of these

**Answer: B**



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**66.** Which of the following is a hydrate salt ?

A.  $Cu(OH)_2$

B.  $MgCO_3$





**Answer: C**



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**67.** Calcium phosphate can be obtained by reacting calcium hydroxide with

A. phosphoric acid

B. phosphorus acid

C. nitric acid

D. both (a) and (b)

**Answer: A**



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**68.** Epsom salt is

A.  $CuSO_4 \cdot 5H_2O$

B.  $CaSO_4 \cdot 2H_2O$

C.  $MgSO_4 \cdot 7H_2O$



**Answer: C**



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**69.** What happens when hydrate copper sulphate is heated ?

- A. it becomes colourless
- B. it turns into anhydrous salt
- C. it loses water of crystallization

D. all of the above

**Answer: D**



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**70.** Soft drinks contains

A. acetic acid

B. tartaric acid

C. carbonic acid

D. nitric acid

**Answer: C**



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**71.** Which of the following statement is correct ?

A. only organic acids conduct electricity

B. only mineral acids conduct electricity

C. all acid solutions , whether organic acids  
or mineral acids, conduct electricity

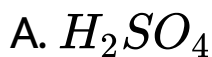
D. none of these

**Answer: C**



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72. Which of the following acid is also known as battery acid that is used in car batteries ?



D.  $H_3PO_4$

**Answer: A**



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**73.** Fats + NaOH  $\rightarrow$  \_\_\_\_\_ + Glycerol . One of the product formed in this reaction is

A. soap

B. cloth

C. paper

D. wood

**Answer: A**



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**74.** What happens to the colour of litmus paper when a drop of acid falls on it ?

A. colour fades

B. from blue it turns red

C. from red it turns blue



D. remains unchanged

**Answer: B**



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**75.** The term 'pH' comes from

A. hydrogen purity

B. pure Hydrogen

C. hydrogen power

D. purity of Hydrogen

**Answer: C**



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**76.** Calculate the pH of  $10^{-8}$  M HCl solution .

A. 8

B. 7

C. 6

D. none of the above

**Answer: D**



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77. While mixing  $H_2SO_4$  with water which of the following precautions should be taken?

- A. never add acid to water
- B. never add water to acid
- C. add the lighter heavier liquid
- D. avoid sunlight

**Answer: B**



78. A is an aqueous solution of Acid and B is an aqueous solution of base. These are diluted separately. Then

A. pH of A increases while that of B decreases till neutral

B. pH of B decreases while that of A increases till neutral

C. pH of A and B decreases

D. pH of A and B increases

**Answer: A**



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**79.** An aqueous solution with pH value zero is

A. acidic

B. basic

C. neutral

D. either acidic/Basic

**Answer: A**



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**80.** Which of the following may be regarded as weak electrolytes?

A. NaCl

B.  $CH_3COONa$

C. HCl

D.  $CH_3COOH$

**Answer: D**



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**81.** The pH of three solutions A, B, C is 6, 4, 8 respectively which of the following is the correct option?

A.  $A > B > C$  decreasing acidic strength

B.  $C > B > A$  increasing acidic strength

C.  $B > A > C$  is decreasing acidic strength

D.  $C > B > A$  decreasing acidic strength

**Answer: C**



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**82.** An aqueous solution of NaCl is

A. acidic

B. basic

C. neutral

D. either acidic/basic



**Answer: C**



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**83.** 'Alum' is an example of

A. single salt

B. double salt

C. acids

D. none of above

**Answer: B**



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**84.** All salts are

- A. strong electrolytes
- B. weak electrolytes
- C. non electrolytes
- D. either weak or strong

**Answer: D**



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85. An aqueous solution of  $CH_3COONa$  is

A. acidic

B. basic

C. amphoteric

D. either Acidic/Basic

**Answer: B**



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**86.** A pH-2 solution is more acidic than one with pH 6 by a factor of

A. 4000

B. 2

C. 10000

D. 8000

**Answer: C**



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87. Electro refining which is based on phenomenon of Electrolysis where

A. impure metal is made anode and pure metal is cathode

B. impure metal is cathode and pure metal is anode

C. pure metal makes both anode and cathode

D. none of the above

**Answer: A**



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88. Which of the following is an example of strong electrolyte?

A.  $NH_4OH$  solution

B. NaOH

C.  $CH_3COOH$

D. HCN

**Answer: B**



## Higher Order Thinking Questions

1. If  $Na_2CO_3$  is added to the solution of  $H_2CO_3$  the pH of  $H_2CO_3$  solution

- A. decreases
- B. increases
- C. remains constant
- D. cannot be predicted

**Answer: D**



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2. The solution of a salt is basic. The salt must be





**Answer: B**



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3. The pH of  $10^{-8}$  m HCl is

A. 8

B. 7

C. less than 7

D. greater than 7

**Answer: C**



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4. If pH of a solution is 4, its  $[H^+]$  is

A.  $10^{-2} \text{ M}$

B.  $10^4 \text{ M}$

C.  $\frac{1}{10^4} \text{ M}$

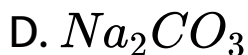
D.  $10^{-6} \text{ M}$

**Answer: C**



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5. Which of the following salt solution will turn the blue litmus red?



**Answer: B**



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6. The  $OH^-$  concentration of a solution is  $1.0 \times 10^{-10}$  M. The solution is

A. acidic

B. basic

C. neutral

D. amphoteric

**Answer: C**



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7. The dissociation of  $H_2O$  into  $H^+$  and  $OH^-$  ions is endothermic. The  $H^+$  ion concentration on increasing temperature

- A. increases
- B. decreases
- C. becomes half
- D. remains same

**Answer: A**



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8. Which of the following acid is present in guava?

A. Acetic acid

B. Tartaric acid

C. Oxalic acid

D. Lactic acid

**Answer: C**



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9. Soda ash is a salt of

A. strong acid and strong base

B. strong acid and weak base

C. weak acid and weak base

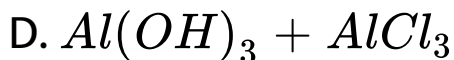
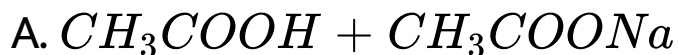
D. weak acid and strong base

**Answer: D**



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10. The buffer solution present in blood is



**Answer: B**



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