# CHEMISTRY

## BOOKS - U-LIKE CHEMISTRY (HINGLISH)

## ACIDS, BASES AND SALTS

**Ncert Questions**

**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 solution, 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 $HCI$, $HNO_3$, 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 $\left(OH^-\right)$ 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 (calcium 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.

View Text Solution

**17.** Name the sodium compound which is used for softening hard water.

View Text Solution

**18.** What will happen if a solution of sodium hydrogencarbonate is heated ?

Give the equation of reaction involved

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**19.** Write an equation to show the reaction between plaster of Paris and water.

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## Ncert Exercises

**1.** 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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**2.** 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:**

View Text Solution

**3.** 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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**4.** Which one of the following types of medicines is used for treating indigestion ?

A. Antibiotic

B. Analgesic

C. Antacid

D. Antiseptic

**Answer:**

View Text Solution

**5.** Write word equations and then balanced equations for the reaction taking place when

dilute sulphuric acid reacts with zinc granules

View Text Solution

**6.** Write word equations and then balanced equations for the reaction taking place when

dilute hydrochloric acid reacts with magnesium ribbon

View Text Solution

**7.** Write word equations and then balanced equations for the reaction taking place when

dilute sulphuric acid reacts with aluminium powder

View Text Solution

**8.** Write word equations and then balanced equations for the reaction taking place when

dilute hydrochloric acid reacts with iron filings

View Text Solution

**9.** 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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**10.** Why does distilled water not conduct electricity, whereas rain water does ?

View Text Solution

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

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**12.** 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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**13.** 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. In which test tube will the fizzing occur more vigorously and why?

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**14.** 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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**15.** 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 ?

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**16.** A milkman adds a very small amount of baking soda to fresh milk.

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

View Text Solution

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

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**18.** What is a neutralisation reaction ? Give two examples.

View Text Solution

**19.** Give two important uses of washing soda and baking soda.

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Case Based Source Based Integrted Questions

**1.** Answer question numbers (a), (d) on the basis of your understanding of the following paragraph and related studied concepts.

Copper sulphate crystals which seem to be dry contain water of crystallisation. When we heat the crystals, this water is removed and the salt turns white. If you moisten the crystals again with water, you will find that blue colour of the crystals reappears. Water of crystallisation that is the fixed number of water molecules present in one formula unit of a salt. Five water molecules are present in one formula unit of copper sulphate. Chemical formula for hydrated copper sulphate is $CusO_4.5H_2O$ . Now you would be able to answer the question whether the molecule of $Na_2CO_3.10H_2O$ is wet. One other salt, which possesses water of crystallisation is gypsum. It has two water molecules as water of crystallisation. It has the chemical formula

$CaSO_4.2H_2O$

Is a molecule wet if its formula contains water molecules ?

View Text Solution

**2.** Answer question numbers (a), (d) on the basis of your understanding of the following paragraph and related studied concepts.

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molecule of $Na_2CO_3.10H_2O$ is wet. One other salt, which possesses water of crystallisation is gypsum. It has two water molecules as water of crystallisation. It has the chemical formula $CaSO_4.2H_2O$

Write the names and chemical formulae of two substances that contain water of crystallisation.

View Text Solution

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What will happen if gypsum is heated to 373 K and above ?

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**4.** Answer question numbers (a), (d) on the basis of your understanding of the following paragraph and related studied concepts.

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and the salt turns white. If you moisten the crystals again with water, you will find that blue colour of the crystals reappears. Water of crystallisation that is the fixed number of water molecules present in one formula unit of a salt. Five water molecules are present in one formula unit of copper sulphate. Chemical formula for hydrated copper sulphate is $CusO_4.5H_2O$ . Now you would be able to answer the question whether the molecule of $Na_2CO_3.10H_2O$ is wet. One other salt, which possesses water of crystallisation is gypsum. It has two water molecules as water of crystallisation. It has the chemical formula $CaSO_4.2H_2O$

Explain how plaster of Paris helps in keeping fractured bones in the right position

View Text Solution

**5.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts

Tooth decay starts when the pH of the mouth is lower than 5.5. Tooth enamel, made up of calcium hydroxyapatite (a crystalline form of calcium phosphate) is the hardest substance in the body. It does not dissolve in water, but is corroded when the pH of the mouth is below 5.5. Bacteria present in the mouth produce acids by degradation of sugar and food particles remaining in the mouth after eating. The best way to prevent this is to clean the mouth after eating food. Using toothpastes, which are generally basic, for cleaning the teeth can neutralise the excess acid and prevent tooth decay.

What is the composition of the material of teeth ?

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**6.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts

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What should be the pH of the mouth to prevent damage to the teeth ?

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**7.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts

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Which of the following should be avoided to prevent tooth decay ?

Bread, cucumber, cakes, sweets

View Text Solution

**8.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts

Tooth decay starts when the pH of the mouth is lower than 5.5. Tooth enamel, made up of calcium hydroxyapatite (a crystalline form of calcium phosphate) is the hardest substance in the body. It does not dissolve in water, but is corroded when the pH of the mouth is below 5.5. Bacteria present in the mouth produce acids by degradation of sugar and food particles remaining in the mouth after eating. The best way to prevent this is to clean the mouth after eating food. Using toothpastes, which are generally basic, for cleaning the teeth can neutralise the excess acid and prevent tooth decay.

Write the best way to prevent damage to the teeth.

View Text Solution

**9.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts.

The process of dissolving an acid or a base in water is a highly exothermic one. Care must be taken while mixing concentrated nitric acid or sulphuric acid with water. The acid must always be added slowly to water with constant stirring. If water is added to a concentrated acid, the heat generated may cause the mixture to splash out and cause burns. The glass container may also break due to excessive local heating. Look out for the warning sign on the can of concentrated sulphuric acid and on the bottle of sodium hydroxide pellets. Mixing an acid or base with water results in decrease in the concentration of ions $\left(H_3O^+ / OH^-\right)$ per unit volume. Such a process is called

dilution and the acid or the base is said to be diluted.

Tell whether heat is absorbed or evolved when an acid or base is dissolved in water

View Text Solution

**10.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts.

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of sodium hydroxide pellets. Mixing an acid or base with water results in decrease in the concentration of ions $\left(H_3O^+ / OH^-\right)$ per unit volume. Such a process is called dilution and the acid or the base is said to be diluted.

How should acids be diluted ?

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**11.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts.

The process of dissolving an acid or a base in water is a highly exothermic one. Care must be taken while mixing concentrated nitric acid or sulphuric acid with water. The acid must always be added slowly to water with constant stirring. If water is added to a concentrated acid, the heat generated may cause the mixture to splash out and cause burns. The glass container may also

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What will be the consequences if dilution of acid is not carried out slowly?

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**12.** Answer question numbers (a) – (d) on the basis of your understanding of the following paragraph and related studied concepts.

The process of dissolving an acid or a base in water is a highly exothermic one. Care must be taken while mixing concentrated nitric acid or sulphuric acid with water. The acid must always be

added slowly to water with constant stirring. If water is added to a concentrated acid, the heat generated may cause the mixture to splash out and cause burns. The glass container may also break due to excessive local heating. Look out for the warning sign on the can of concentrated sulphuric acid and on the bottle of sodium hydroxide pellets. Mixing an acid or base with water results in decrease in the concentration of ions $\left(H_3O^+ / OH^-\right)$ per unit volume. Such a process is called dilution and the acid or the base is said to be diluted.

What is meant by dilution of an acid or a base ?

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## Multiple Choice Questions One Mark Each

**1.** 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

**Answer:**

View Text Solution

**2.** 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

**Answer:**

View Text Solution

**3.** 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

**Answer:**

View Text Solution

**4.** Which of the following statements are true for acids ?

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

**Answer:**

View Text Solution

**5.** Which of the following are present in a dilute aqueous solution of hydrochloric acid ?

A. $H_3O^+ + Cl^-$

B. $H_3O^+ + OH^-$

C. $Cl^- + OH^-$

D. Unionised HCl

**Answer:**

View Text Solution

**6.** 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

**Answer:**

View Text Solution

**7.** Calcium phosphate is present in tooth enamel. Its nature is

A. basic

B. acidic

C. neutral

D. amphoteric

**Answer:**

View Text Solution

**8.** Which one of the following can be used as an acid-base indicator by a visually impared student ?

A. Litmus

B. Turmeric

C. Vanilla essence

D. Petunia leaves

**Answer:**

View Text Solution

**9.** 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)

**Answer:**

View Text Solution

**10.** 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

**Answer:**

View Text Solution

**11.** 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)

**Answer:**

View Text Solution

**12.** Which of the following salts does not contain water of crystallisation ?

A. Blue vitriol

B. Baking soda

C. Washing soda

D. Gypsum

**Answer:**

View Text Solution

**13.** 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 Clions from the evolved gas

**Answer:**

View Text Solution

**14.** Identify the correct representation of reaction occurring during chloralkali process

A. $2NaCl(l) + 2H_2O(l) \rightarrow 2NaOH(l) + Cl_2(g) + H_2(g)$

B.

$2NaCl(aq) + 2H_2O(aq) \rightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$

C.

$2NaCl(aq) + 2H_2O(l) \rightarrow 2NaOH(aq) + Cl_2(aq) + H_2(aq)$

D.

$2NaCl(aq) + 2H_2O(l) \rightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$

**Answer:**

View Text Solution

**15.** 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)

**Answer:**

View Text Solution

**16.** 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

B. (iii) only

C. (ii) and (iv)

D. (iii) and (iv)

**Answer:**

View Text Solution

**17.** Which of the following is used for dissolution of gold ?

A. Hydrochloric acid

B. Sulphuric acid

C. Nitric acid

D. Aqua regia

**Answer:**

View Text Solution

**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 Acids, Bases and Salts

**Answer:**

View Text Solution

**19.** 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 hydrogen carbonate

C. After washing with plenty of water apply solution of sodium hydroxide on the hand.

D. Neutralise the acid with a strong alkali

**Answer:**

View Text Solution

**20.** 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

**Answer:**

View Text Solution

**21.** Which of the following natural materials act as acid-base indicators ?

A. Red cabbage leaves

B. Geranium

C. Hydrangea

D. All the above

**Answer:**

View Text Solution

**22.** What happens when hydrogen gas is passed through soap solution and the bubbles escaping water are ignited with a flame ?

A. The gas burns silently.

B. The gas burns with a pop sound.

C. The gas gives a smell of burning sulphur.

D. The gas being heavier does not escape the soap solution.

**Answer:**

View Text Solution

**23.** A small amount of copper oxide is taken in a test tube and dilute acid is added to it with stirring. Which colour will be

obtained in the test tube ?

A. Blue-green

B. Pink

C. Black

D. Colourless

**Answer:**

View Text Solution

**24.** Sodium chloride was taken in a test tube and conc. $H_2SO_4$ acid added to it and the gas was tested with a moist litmus paper. Give your observation.

A. The paper got bleached.

B. The paper caught fireq

C. Nothing happened to the paper.

D. The paper turned red.

**Answer:**

View Text Solution

## Ture Of False One Mark Each

**1.** Sodium carbonate is commonly used in the kitchen for making tasty crispy pakoras.

View Text Solution

**2.** Tomato contains tartaric acid.

View Text Solution

**3.** Acid solution in water conducts electricity.

View Text Solution

**4.** Curd and sour substances should not be kept in glass and plastic containers.

View Text Solution

**5.** Sodium carbonate can be obtained by heating baking soda.

View Text Solution

**6.** To protect our teeth from decay, we should use toothpastes which are acidic.

View Text Solution

**7.** Stinging hair of nettle leaves inject ethanoic acid and cause pain.

View Text Solution

## Fill In The Blanks One Mark Each

**1.** The strength of an acid or an alkali can be tested by using a scale called the which gives the _____measure of hydrogen ion concentration in a solution.

View Text Solution

**2.** Salts have various uses in everyday life and in _____.

View Text Solution

**3.** Mixing concentrated acids or bases in water is highly _____process.

View Text Solution

**4.** _____are the medicines that are used to treat indigestion.

View Text Solution

**5.** Plaster of Paris should be stored in _____ containers.

View Text Solution

**6.** _____is produced by the action of chlorine on dry slaked lime.

View Text Solution

**7.** We can judge how strong an acid or base is by making use of _____

View Text Solution

**8.** Our body works within the pH range of _____

View Text Solution

**9.** Tooth enamel is made up of _____

View Text Solution

## Assertion Reason Questions One Mark Each

**1.** Assertion (A): Antacids are used to get rid of pain caused by indigestion.

Reason (R) : Antacids neutralise the excess acid produced in the stomach.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**2.** Assertion (A): Tooth decay starts when the pH of the mouth is lower than 5.5.

Reason (R) : Bee-sting leaves an acid which causes pain and irritation.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**3.** Assertion (A): The strength of acids and bases depends on the number of $H^+$ ions and $OH^-$ ions produced.

Reason (R) : The process of dissolving an acid or base in water is highly endothermic.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**4.** Assertion (A): When pH of rain water is more than 7, it is called acid rain.

Reason (R) : When electricity is passed through an aqueous solutions of sodium chloride, it decomposes to form $H_2$ and $Cl_2$ gases.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**5.** Assertion (A): The important products from chloro-alkali process are hydrogen, chlorine and sodium hydroxide.

Reason (R) : Baking powder is a mixture of baking soda and citric acid.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**6.** Assertion (A): Washing soda is sodium carbonate hexahydrate.

Reason : Chlorine gas is used for the preparation of bleaching powder.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**7.** Assertion (A): Copper sulphate crystals which seem to be dry contain water of crystallisation.

Reason (R) : Plaster of Paris is $CaSO_4.\frac{3}{2}H_2O$.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**8.** Assertion (A): Plaster of Paris is used in toys, material for decoration and for making surfaces smooth.

Reason (R) : Bleaching powder is used for making drinking water free from germs.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**9.** Assertion (A): Salt of a strong acid and strong base have a pH less than 7.

Reason (R) : Seawater contains many salts dissolved in it.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

**10.** Assertion (A): Hydrochloric acid helps in the digestion of food in the stomach.

Reason (R) : The strength of a acid depends upon the number of $H^+$ ions.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

**Answer:**

View Text Solution

## Very Short Answer Questions One Mark Each

**1.** What are indicators ?

View Text Solution

**2.** What will happen to blue litmus when it is added to soda water ?

View Text Solution

**3.** What is the colour of methyl orange in baking soda ?

View Text Solution

**4.** How will you test a gas which is liberated when hydrochloric acid reacts with an active metal ?

View Text Solution

**5.** Why does the flow of acid rain water into a river make the survival of aquatic life in the river difficult ?

View Text Solution

**6.** At what pH in the mouth is tooth decay faster and why?

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

View Text Solution

**8.** Write balanced chemical equations for the reactions taking place when dry blue crystals of copper sulphate are dropped into concentrated sulphuric acid.

View Text Solution

**9.** When conc. acid is added to water, whether the process is exothermic or endothermic ?

View Text Solution

**10.** Which by-product of chlor-alkali process is used for manufacture of bleaching powder ?

View Text Solution

**11.** What are weak acids ? Give two examples

View Text Solution

**12.** Is toothpaste acidic or alkaline ?

View Text Solution

**13.** What is litmus solution ?

View Text Solution

**14.** There are two jars A and B containing food materials. Food in jar A is pickled with acetic acid while B is not. Food of which jar will stale first ? Explain.

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**15.** A compound which is prepared from gypsum has the property of hardening when mixed with proper quantity of water. Identify the compound and write its chemical formula.

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**16.** What is milk of magnesia ? Is it a strong or mild base ?

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**17.** A bud of petunias becomes reddish purple after first shower of rain. What does it indicate ?

View Text Solution

**18.** What is the role of tartaric acid in baking powder ?

View Text Solution

**19.** Which chemicals are used in soda-acid fire extinguishers ?

View Text Solution

**20.** Name an indicator which tells various levels of $H^+$ ion concentration.

View Text Solution

**21.** Name a salt which does not contain water of crystallisation

View Text Solution

**22.** Name the acids present in (i) nettle sting (ii) curd.

View Text Solution

**23.** If soil is acidic, which compound would you spread to treat the soil ?

View Text Solution

**24.** Write the names of two salts belonging to sodium family.

View Text Solution

**25.** How will you distinguish between baking powder and washing soda by heating?

View Text Solution

**26.** What happens when nitric acid is added to egg shell ?

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## Short Answer Questions Three Mark Each

**1.** While constructing a house, a builder selects marble flooring and marble table top for the kitchen where vinegar and juices of lemon tamarind etc., are more often used for cooking. Will you agree to this selection and why?

View Text Solution

**2.** How are bases different from alkalis ? Are all bases alkalis ?

View Text Solution

**3.** Five solutions A, B, C, D and E showed pH as 4, 7, 1, 11 and 9 respectively when tested with universal indicator. Which solution is

(i) Neutral

(ii) Strongly alkaline (iii) Strongly acidic

(iv) Weakly acidic and

(v) Weakly alkaline ?

Arrange the pH in increasing order of hydrogen ion concentration.

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**4.** Which of the following substances in water will not show acidic properties ?

Sugar, alcohol, acetic acid, urea, nitric acid and carbon dioxide

View Text Solution

**5.** 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 ?

View Text Solution

**6.** A student dropped a few pieces of marble in dilute hydrochloric acid, contained in a test tube, the evolved gas was then passed for a long time through lime water. What changes would be observed in lime water ? Write balanced equations for both the changes observed.

View Text Solution

**7.** Write the formula and chemical name of bleaching powder.

View Text Solution

**8.** Write the chemical equation to represent the action of atmospheric $CO_2$ gas on bleaching powder when exposed in open.

View Text Solution

**9.** Why is bleaching powder used in water-treatment plants ?

View Text Solution

**10.** Give chemical name and formula of bleaching powder. What happens when it is exposed to air ? Mention two uses of bleaching powder.

View Text Solution

**11.** Three acidic solutions A, B and C have pH=0,3 and 5 respectively

(i) Which solution has highest concentration of $H^+$ ions ?

(ii) Which solution has the lowest concentratoin of $H^+$ ions ?

View Text Solution

**12.** How concentrated sulphuric acid can be diluted ? Describe the process.

View Text Solution

**13.** Define water of crystallisation with two examples. How will you prove their existence in the examples given by you ?

View Text Solution

**14.** When zinc metal is treated with a dilute solution of a strong acid, a gas is evolved, which is used in the hydrogenation of oils.

Name the gas evolved. Write the chemical equation of the reaction involved and also write a test to detect the gas formed.

View Text Solution

**15.** Fill in the missing data in the following table.

| Name of the salt | Formula | Salt obtained from | |
|---|---|---|---|
| | | Base | Acid |
| (i) Ammonium chloride | $NH_4Cl$ | $NH_4OH$ | — |
| (ii) Copper sulphate | — | — | $H_2SO_4$ |
| (iii) Sodium chloride | NaCl | NaOH | — |
| (iv) Magnesium nitrate | $Mg(NO_3)_2$ | — | $HNO_3$ |
| (v) Potassium sulphate | $K_2SO_4$ | — | — |
| (vi) Calcium nitrate | $Ca(NO_3)_2$ | $Ca(OH)_2$ | — |

View Text Solution

**16.** Define olfactory indicators. Name two substance which can be used as olfactory indicators.

(b) Choose strong acids from the following

$CH_3COOH, H_2SO_4, H_2CO_3, HNO_3$

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**17.** Name of type of chemical reaction represented by the following equation :

$(i) CaO + H_2O \rightarrow Ca(OH)_2$

View Text Solution

**18.** Name of type of chemical reaction represented by the following equation :

(ii) $3BaCl_2 + Al_2(SO_4)_3 \rightarrow 2AlCl_3 + 3BaSO_4$

View Text Solution

**19.** Name of type of chemical reaction represented by the following equation :

$(iii) 2FeSO_4 \xrightarrow{\text{Heat}} Fe_2O_3 + SO_2 + SO_3$

View Text Solution

**20.** What is the chemical formula for Plaster of Paris ? How is it prepared ? State the common and chemical names of the compound formed when Plaster of Paris is mixed with water.

View Text Solution

**21.** How is bleaching powder prepared ? Why does bleaching powder

(i) Smell strongly of chlorine ?

(ii) not dissolve completely in water ?

View Text Solution

**22.** Name the acids present in the following foodstuffs which attribute a sour taste to them : Lemon juice, vinegar, vitamin C tablet, tamarind, sour milk, orange

View Text Solution

**23.** What is meant by water of crystallisation ? How would you show that copper sulphate crystals contain water of crystallisation ?

View Text Solution

**24.** How are bases different from alkalis ? Are all bases alkalis ?

View Text Solution

**25.** 2 mL of sodium hydroxide solution is added to a few pieces of granulated zinc metal taken in a test tube. When the contents are warmed, a gas evolves which is bubbled through a soap solution before testing. Write the equation of the chemical reaction involved and the test to detect the gas. Name the gas which will be evolved when the same metal reacts with dilute solution of a strong acid.

View Text Solution

**26.** The pH of a salt used to make tasty and crispy pakoras is 14. Identify the salt and write a chemical equation for itsformation. List its two uses.

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## Long Answer Questions

**1.** State reason for the following statements :

Tap water conducts electricity whereas distilled water does not

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**2.** State reason for the following statements :

Dry hydrogen chloride gas does not turn blue litmus red whereas hydrochloric acid does.

View Text Solution

**3.** State reason for the following statements :

During summer season, a milkman usually adds a very small amount of baking soda to fresh milk.

View Text Solution

**4.** State reason for the following statements :

For dilution of an acid, acid is added to water and not water to acid.

View Text Solution

**5.** State reason for the following statements :

Ammonia is a base but does not contain a hydroxyl group.

View Text Solution

**6.** What is water of crystallisation ? Write the common name and chemical formula of a commercially important compound which

has ten water molecules as water crystallisation. How is this compound obtained ? Write the chemical equation also. List any two uses of this compound.

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**7.** Define a universal indicator. Mention its one use.

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**8.** Solution A gives pink colour when a drop of phenolphthalein indicator is added to it. Solution B gives red colour when a drop of methyl orange is added to it. What type of solutions are A and B and which one of the solutions A and B will have a higher pH value ?

View Text Solution

**9.** Name one salt whose solution has pH more than 7 and one salt whose solution has pH less than 7.

View Text Solution

**10.** Three acidic solutions A, B and C have pH = 0, 3 and 5 respectively.

(i) Which solution has highest concentration of $H^+$ ions ?

(ii) Which solution has the lowest concentration of $H^+$ ions ?

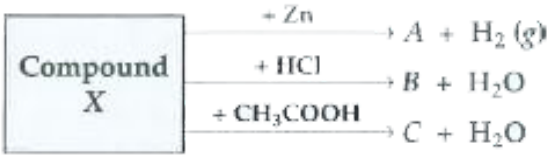
View Text Solution

**11.** How concentrated sulphuri acid can be diluted ? Describe the process.

View Text Solution

View Text Solution

**12.** Identify the compound X on the basis of the reactions given below. Also write the name and chemical formulae of A, B and C.

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