# Chemistry Study Materials for Class 10

## (NCERT Based: MCQ of Chapter -02)

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# Acids, Bases and Salts

## Choose the correct option:

**1.** The colour of neutral litmus solution is

(a) red (b) blue **(c) purple** (d) yellow

**2.** Which of the following indicators is an olfactory indicator?

(a) litmus **(b) vanilla** (c) turmeric (d) phenolphthalein

**3.** Which one is suitable method to find the accurate pH value?

**(a) pH meter** (b) pH paper (c) Universal indicator (d) Litmus solution

**4.** Which one of the following statements is correct about universal indicator?

**(a)** It is a mixture of HCl and NaOH

**(b) It is a mixture of many indicators**

**(c)** It is a solution of phenolphthalein in alcohol

**(d)** It is a solution of phenolphthalein in water.

**5.** Which of the following properties are shown by dilute HCl?

**(1)**It turns blue litmus red

**(2)**It turns red litmus blue

**(3)**It reacts with zinc and a gas is evolved

**(4)**It reacts with solid sodium carbonate to give brisk effervescence

(a) 1 and 2 (b) 1 and 3 **(c) 1, 3 and 4** (d) 2, 3 and 4

**6.** A teacher gave two test tubes – one containing water and the other containing sodium hydroxide solution to two students. Then he asked them to identify the test tube containing sodium hydroxide solution. Which one of the following can be used for correctly identifying the test tube containing the solution of sodium hydroxide?

(a) Blue litmus **(b) Red litmus** (c) Sodium carbonate solution (d) Dilute HCl

**7.** Metallic oxides are____in nature, but non-metallic oxides are__in nature. The information in which alternative completes the given statement?

(a) neutral, acidic (b) acidic, basic (c) basic, neutral (**d) basic, acidic**

**8.** When a drop of unknown solution X is placed on a strip of pH paper, a deep red colour is produced. This sample is which one of these?

(a) NaOH **(b) HCl** (c) Water (d)$CH_3COOH$

**9.** A student tests a sample drinking water and reports its pH value as 6 at room temperature. Which one of the following might have been added in water?

(a) Calcium chloride (b) Sodium chloride

**(c) Sodium bicarbonate** (d) Bleaching powder

**10.** Solid sodium bicarbonate was placed on a strip of pH paper. The color of the strip

(a) turned red **(b) did not change**

(c) turned green and slightly yellow (d) turned pink

**11.** Four drops of red litmus solution were added to each of the following samples. Which one turns red litmus blue?

(a) Alcohol (b) Distilled water **(c) Sodium hydroxide sol$^n$** (d) HCl

**12.** The pH of which of the following samples cannot be found directly using pH paper?

(a) Lemon juice **(b) Solid sodium bicarbonate**

(c) Dilute HCl (d) Solution of a detergent.

**13.** The acid found in an ant sting is

(a) acetic acid (b) citric acid (c) tartaric acid **(d) methanoic acid**

**14.** To relieve pain caused due to acidity, we can take

(a) sour milk (b) lemon juice (c) orange juice **(d) milk of magnesia**

**15.** What are the products obtained when potassium sulphate reacts with barium iodide in an aqueous medium?

**(a) KI and $BaSO_4$** (b) KI, Ba and $SO_2$ (c) K, $I_2$ and $BaSO_4$ (d) K, Ba, $I_2$ and $SO_2$

**16.** Which of the following salts is basic in nature?

(a) $NH_4NO_3$ **(b) $Na_2CO_3$** (c) $Na_2SO_4$ (d) NaCl

**17.** Which of the following salts has the minimum pH value?

**(a) $(NH_4)_2SO_4$** (b) $NaHCO_3$ (c) $K_2SO_4$ (d) NaCl

**18.** You are given four unknown solutions I, II, III, and IV. The pH values of these solutions are found to be 3, 7, 8, and 10 respectively. Among the given solutions, which solution has the highest hydrogen ion concentration?

**(a) I** (b) II (c) III (d) IV

**19.** Which one of the following is required to identify the gas evolved when dilute hydrochloric acid reacts with zinc metal?

(a) blue litmus paper (b) red litmus paper **(c) a burning splinter** (d) lime water

**20.** Zinc reacts with an acid as well as with a base to liberate hydrogen. On the basis of this what should be the nature of the zinc metal?

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

**21.** When you test the solutions of sodium bicarbonate, sodium hydroxide, hydrochloric acid and acetic acid with universal indicator, in which case would you get a red colour?

(a) sodium bicarbonate **(b) hydrochloric acid**

(c) sodium hydroxide (d) acetic acid

**22.** The pH of a sample of pure water is 7 at room temperature. What is its pH when a pinch of solid sodium bicarbonate is dissolved in it?

(a) exactly 7 **(b) less than 7** (c) more than 7 (d) none of these

**23.** If an unknown solution turns blue litmus red, then the pH of the solution is more likely to be

(a) 12 (b) 10 (c) 7 **(d) 4**

**24.** The Arrhenius acid base theories that define an **acid** as any species that can

**(a) gives hydrogen ion** (b) accept hydrogen ion

(c) accept hydroxide ion (d) gives hydroxide ion

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