

# Science

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(Chapter - 2) (Acid Bases and Salts) (Practice Test 2)

(Class X)

Time: 60 minutes

M M: 25

## General Instructions:

- This question paper contains four sections – A, B, C, and D. Each part is compulsory.
- Section – A has 4 MCQ of one mark each.
- Section – B has 5 questions of two mark each.
- Section – C has 2 questions of three mark each.
- Section – D has 1 question of five mark.
- There is no negative marking.

### Section - A

1. Litmus solution is a ..... dye.  
(A) Orange  
(B) Yellow  
(C) Purple  
(D) White
2. Some substances whose odor changes in acidic or basic media. These are called ..... Indicators.  
(A) Natural  
(B) Olfactory  
(C) Acidic  
(D) Synthetic
3. Choose the wrong option.  
(A)  $HCl$  is acid  
(B)  $NaOH$  is a base  
(C)  $NaCl$  is Sal  
(D) Turmeric is a synthetic indicator
4.  $NaOH$  means .....  
(A) Sodium hydroxide which is base  
(B) Sodium oxide which is acid  
(C) Sodium hydroxide which is acid  
(D) Sodium hydroxide which is salt

### Section - B

5. Which gas is evolved when dilute hydrochloric acid reacts with zinc metal? Write the molecular formula of this gas.
6. Dry  $HCl$  gas does not change the color of dry blue litmus. Give reason to justify it.
7. A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. Identify the compound and write its chemical formula.
8. What is chlor-alkali process? Write a balanced chemical equation for the reaction involved in this process, to justify your answer.
9. Mention the  $pH$  of aqueous solution of the following salts as  $> 7$ , more than 7, less than 7.  
 $KCl, Na_2CO_3, NH_4Cl, NaNO_3$  (Sodium nitrate)

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## Section - C

10. *pH* has a great importance in our daily life. Explain by giving three examples.

11. Answer the following questions:

(A) State the color of phenolphthalein in soap solution.

(B) Name the by-product of Chlor-alkali process which is used for the manufacture of bleaching powder.

(C) Name one indicator which specifies the various levels of  $H^+$  ion concentration.

## Section - D

12. State the reason for the following statements:

(A) Tap water conducts electricity whereas distilled water does not.

(B) Dry hydrogen chloride gas does not turn blue litmus red whereas dilute hydrochloric acid does.

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

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

(E) Ammonia is a base but it does not contain hydroxyl group.



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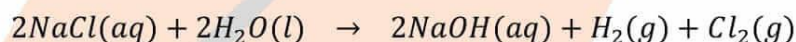
Hints and Answers

## Section - A

1. (C) Purple.
2. (B) Olfactory.
3. (D) Turmeric is synthetic indicator.
4. (A) Sodium hydroxide which is base.

## Section - B

5. Dihydrogen gas,  $H_2$ .
6. Dry  $HCl(g)$  does not form ions, therefore it does not affect dry blue litmus.
7.  $CaSO_4 \cdot \frac{1}{2}H_2O$  (Plaster of Paris), Calcium sulfate hemihydrate.
8. When brine solution is electrolysed we get alkali ( $NaOH$ ) and chlorine ( $Cl_2$ ) gas, this process is called chlor-alkali process.



9.  $KCl$  and  $NaNO_3$  has  $pH = 7$   
 $Na_2CO_3$  has  $pH > 7$   
 $NH_4Cl$  has  $pH < 7$

## Section - C

10.
  - $pH$  of our stomach is 2.0 and it is needed for the digestion of proteins in our body.
  - Blood has  $pH = 7.36$  to  $7.42$  which must be maintained for proper health.
  - $pH$  of soil is determined and suitable chemicals are added so as to make it suitable for growth of crops.
11.
  - (A) Phenolphthalein will turn pink in soap solution.
  - (B) Chlorine is the by-product of chlor-alkali process which is used in the manufacture of bleaching powder.
  - (C) Universal indicator specifies the various levels of  $H^+$  ion concentration.
12.
  - (A) Tap water contains ions which makes it a good conductor whereas distilled water does not contain any ions.
  - (B) Dry  $HCl$  gas does not dissociate into ions, so it has no effect on the litmus. Hydrochloric acid form ions, so it turns blue litmus red.
  - (C) Baking soda prevents the formation of lactic acid when milk turns sour.
  - (D) Acid is added to water slowly because the reaction is highly exothermic. If water is added to acid, then glass container may break due to lot of heat evolved.
  - (E)  $NH_3$  dissolves in  $H_2O$  forming  $NH_4OH$ , therefore it acts as base:

