

# Science

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(Chapter - 2) (Acid Bases and Salts) (Practice Test 1)

(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. Acids are ..... in taste.  
(A) Spicy  
(B) Bitter  
(C) Sour  
(D) Sweet
2. .... are changes the color of blue litmus to red.  
(A) Bases  
(B) Acid  
(C) Salt  
(D) Indicator
3. .... is a natural indicator.  
(A) Turmeric  
(B)  $HCl$   
(C) Salt  
(D) Bases
4. .... are not indicator.  
(A) Methyl orange  
(B) Phenolphthalein  
(C) Turmeric  
(D) Hydrochloric acid

### Section - B

5. Three acidic solutions  $A$ ,  $B$  and  $C$  have  $pH = 0, 3$  and  $5$  respectively.  
(A) Which solution has the highest concentration of  $H^+$  ions?  
(B) Which solution has the lowest concentration of  $H^+$  ions?
6. What is meant by  $p$  and  $H$  in  $pH$ ?
7. Name a gas evolved when dilute  $HCl$  reacts with sodium hydrogen carbonate. How is it recognised?
8. Two solutions 'A' and 'B' have  $pH$  value  $3.0$  and  $10.5$  respectively. Which of these will turn  
(A) Blue litmus solution to red,  
(B) Phenolphthalein from colorless to pink? Justify your answer in each case.
9. The  $pH$  of soil 'A' is  $7.5$ , while that of soil 'B' is  $4.5$ . Which of the two soils A or B should be treated with powdered chalk to adjust the  $pH$  and why?

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## Section - C

10. The  $pH$  of a salt which is used to make tasty and crispy pakoras is 14. Identify the salt and write a chemical equation for its formation. List its two uses.

11.

- (A) Why does aqueous solution of an acid conduct electricity?
- (B) How does the concentration of  $H_3O^+$  ions change when a solution of an acid is diluted?
- (C) Which one has a higher  $pH$ , a concentrated or a dilute solution of hydrochloric acid?
- (D) What would be the gas evolved on adding dilute to hydrochloric acid to
  - (i) Solid sodium carbonate placed in a test tube?
  - (ii) Zinc metal in a test tube?

## Section - D

Q12.

- (A) Define indicator. Name two indicators obtained from plants.
- (B) Write a balanced chemical equation for the reaction taking place when sodium oxide reacts with water. How will this solution behave towards phenolphthalein and red litmus paper?
- (C) State what happens when sodium hydroxide solution reacts with hydrochloric acid.



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## Hints and Answers

### Section - A

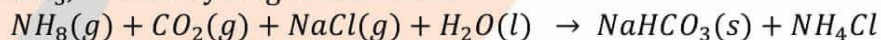
1. (c) Sour.
2. (b) Acid.
3. (a) Turmeric.
4. (d) Hydrochloric acid.

### Section - B

5.  
(A) The solution with  $pH = 0$  has highest concentration of  $H^+$  ions.  
(B) The solution with  $pH = 5$  has lowest concentration of  $H^+$  ions.
6.  $p$  stands for 'potenz' in German meaning power,  $H$  stands for hydrogen.
7. Carbon dioxide, it turns lime water milky. In this way,  $CO_2$  gas is recognised.
8.  
(A) 'A' with  $pH = 3$ , will turn blue litmus red because it is acidic in nature.  
(B) 'B' with  $pH = 10.5$ , will turn phenolphthalein colorless to pink because 'B' is basic in nature.
9. Soil 'B' is acidic, therefore it needs to be treated with powdered chalk to adjust its  $pH$  because chalk is basic, which will make soil neutral.

### Section - C

10. The salt is  $NaHCO_3$ , sodium hydrogen carbonate.



#### Uses:

It is used as an antacid.

It is used in soda-acid fire extinguishers.

No salt has  $pH = 14$ .  $NaHCO_3$  has  $pH = 8.4$

#### 11.

- (A) It contains ions which carry current.
- (B)  $H_3O^+$  ions will decrease when
- (C) Dilute solution has higher  $pH$  than concentrated.
- (D) (i)  $CO_2$  gas will be formed:

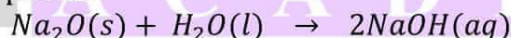


- (ii) Hydrogen gas will be formed:



### Section - D

12.  
(A) Indicator is a substance which give different color or odor in acid and base e.g., litmus and turmeric are indicators obtained from plants.



- (B) Solution will turn phenolphthalein pink and red litmus paper blue.
- (C) Sodium chloride and water are formed:



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