Science

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(Chapter - 2) (Acid Bases and Salts) (Practice Test 4) (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. All metal carbonates and hydrogen carbonates reacts with acids to give
 - (A) Salt, Carbon Dioxide, Water
 - (B) Salt, water, acid
 - (C) Salt water, base
 - (D) Salt water, hydrogen gas
- 2. Copper (II) chloride color
 - (A) Green yellow
 - (B) Green purple
 - (C) Blue green
 - (D) Reddish pink
- 3. Metallic oxides are
 - (A) Salt
 - (B) In powder formed
 - (C) Liquid in nature
 - (D) Basic oxides
- 4. Non-metallic oxides are in nature
 - (A) Basic
 - (B) Acidic
 - (C) Salty
 - (D) Solid

Section - B

- 5. Write a balanced chemical equation for the reaction between sodium carbonate and hydrochloric acid indicating the physical state of reactants and the products.
- 6. Oxides of metals are basic while those of non-metals are acidic. Explain.
- 7. What is the difference between slaked lime and lime water?
- 8. Write a balanced chemical equation for the neutralization reaction, mentioning the physical state of reactants and products.
- 9. Give suitable reasons to justify the following statement:

An aqueous solution of sodium chloride is neutral but an aqueous solution of sodium metal is basic.

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Section - C

- 10. Explain the action of dilute hydrochloric acid on the following with suitable chemical equations:
- (A) Magnesium ribbon,
- (B) Sodium hydroxide,
- (C) Crushed egg shells.
- 11. You are provided with magnesium ribbon and sulfur powder. Explain with the help of activity that metal oxides are basic and oxides of non-metals are acidic in nature.

Section - D

- 12. Write chemical equations when zinc granules react with
- (A) Sulphuric acid,
- (B) Hydrochloric acid,
- (C) Aluminum chloride,
- (D) Sodium hydroxide,
- (E) Nitric acid



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Hints and Answers

Section - A

- 1. (a) Salt, Carbon Dioxide, water.
- 2. (c) Blue green.
- 3. (d) Basic oxides.
- 4. (b) Acidic.

Section - B

$$5. Na_2CO_3(s) + 2HCl(dill) \rightarrow 2NaCl(aq) + CO_2(g) + H_2O(l)$$

- 6. Metal oxides dissolve in water to form base basic in nature. On the other hand non-metals dissolve in water to form acids, acidic in nature.
- 7. The solid $Ca(OH)_2$ is slaked lime whereas clear solution of $Ca(OH)_2$ in water is lime water.
- 8. $NaOH(aq) + HCl(aq) \rightarrow NaCl(aq) + H_2O(l)$
- 9. Sodium chloride is made up of a strong base, NaOH and a strong acid, HCl. Therefore, its aqueous solution is neutral in nature. Sodium metal reacts with water to form NaOH (Base) and H_2 gas:

$$2Na(s) + 2H_2O(l) \rightarrow 2NaOH(aq) + H_2(g)$$

10.

(A)
$$Mg(s) + 2HCl(dil) \rightarrow MgCl_2(aq) + H_2(g)$$

(B)
$$NaOH(aq) + HCl(dil) \rightarrow NaCl(aq) + H_2O(l)$$

(C)
$$CaCO_3(s) + 2HCl(dil) \rightarrow CaCl_2(g) + CO_2(g) + H_2O(l)$$

11. Bum magnesium ribbon with the help of tongs to form white ash. Dissolve the ash in hot water. Add red litmus which turns blue, showing that MgO is a basic oxide.

$$Mg(s) + O_2(g) \rightarrow 2MgO(s)$$

$$MgO(s) + H_2O(hot) \rightarrow Mg(OH)_2(aq)$$

Heat sulfur taken in an iron spatula and pass the gas through water. Add blue litmus into it. It will turn red showing SO_2 is an acidic oxide.

$$S + O_2 \rightarrow O_2$$

 $SO_2 + H_2O \rightarrow H_2SO_3$ (Sulfurous acid)

12.

(A)
$$Zn(s) + H_2SO_4(dil) \rightarrow ZnSO_4(aq) + H_2(g)$$

(B)
$$Zn(s) + 2HCl(dil) \rightarrow ZnC(aq) + H_2(g)$$

(C)
$$Zn(s) + AlCl_3(aq) \rightarrow No \ reaction$$

(D)
$$Zn(s) + 2NaOH(aq) \rightarrow Na_2ZnO_2(aq) + H_2(g)$$

(E)
$$3Zn(s) + 8HNO(dil) \rightarrow 3Zn(NO_3)_2(aq) + 2NO(g) + 4H_2O(l)$$

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