**Ch. 5 REVIEW BOOKLET**

1. Acids taste \_\_\_\_\_\_\_\_\_\_\_\_\_\_, will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ your skin, turn litmus \_\_\_\_\_\_\_\_\_\_ and bromothymol blue \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Acids also \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with metals and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electricity. They have a pH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions when dissolved in solution.
2. Bases taste \_\_\_\_\_\_\_\_\_\_\_\_\_\_, feel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and will \_\_\_\_\_\_\_\_\_ your skin. They turn litmus \_\_\_\_\_\_\_\_\_\_ and turn phenolphthalein \_\_\_\_\_\_\_\_\_\_\_ in strong bases. Bases \_\_\_\_\_\_\_\_\_\_\_ react with metals, they do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electricity. They have a pH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions when dissolved in solution.
3. As the concentration of H+ increases, pH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the concentration of OH- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. What colour would the following indicators be in lemon juice?

|  |  |
| --- | --- |
| Indicator | Colour |
| methyl orange |  |
| bromothymol blue |  |
| litmus |  |
| phenolphthalein |  |
| indigo carmine |  |

1. What colour would the following indicators be in substance with a pH 9?

|  |  |
| --- | --- |
| Indicator | Colour |
| methyl orange |  |
| bromothymol blue |  |
| litmus |  |
| phenolphthalein |  |
| indigo carmine |  |

1. What colour would the following indicators be water?

|  |  |
| --- | --- |
| Indicator | Colour |
| methyl orange |  |
| bromothymol blue |  |
| litmus |  |
| phenolphthalein |  |
| indigo carmine |  |

1. Which of the following is the most acidic?

A. HCl (aq) B. H2O (l) C. NaOH (aq)

Does it have a high or low pH?\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following is the most basic?

A. HCl (aq) B. H2O (l) C. NaOH (aq)

Does it have a high or low pH?\_\_\_\_\_\_\_\_\_\_\_\_

1. A student records the pH values of two different solutions and finds solution A to measure pH \_\_\_\_\_ and solution B to measure pH \_\_\_\_\_\_, indicating that solution A is more acidic than solution B and that they are four pH units apart.

How many times higher is the H+ concentration in solution A than B?

1. If the pH of solution X is 7 and it is found to have a concentration of H+ ions one thousand times lower than that of unknown solution Y, what is the pH of solution X?
2. Write the name or formula of the following compounds and indicate whether it is an acid, base or salt.

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|  |  |  |
| --- | --- | --- |
| **Compound** | **Name** | **Acid or Base** |
| HBr(aq) |  |  |
|  | calcium hydroxide |  |
| MgCl2 |  |  |
|  | sulfurous acid |  |
| H2CO3 |  |  |
| NH4OH |  |  |
|  | perchloric acid |  |

**Use the following chemical equation for question 12 and 13.**

HCl(aq) + NaOH(aq) → NaCl(s) + H2O(l)

1. Which compounds above represent the reactants in a neutralization reaction?
2. Which compounds above represent the products of a neutralization reaction?
3. Three reactions in which salts are produced include:
4. Acids and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Acids and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Acids and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. The reaction between and certain acid and a certain base produces sodium acetate, what is the acid and what is the base?
8. Predict the products and balance the following equations
9. HBr + Mg →
10. HNO3 + Al(OH)3 →
11. HNO3 + CaCO3 →
12. Metal oxides produce a \_\_\_\_\_\_\_\_\_\_\_\_\_ solution when added to water.

An example of a metal oxide is \_\_\_\_\_\_\_\_.

1. Non-metal oxides produce a \_\_\_\_\_\_\_\_\_\_\_\_\_ solution when added to water.

An example of a non-metal oxide is \_\_\_\_\_\_\_\_.

1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ oxide will produce acid precipitation.
2. When magnesium is burned in air, a white powder is produced. If this powder is dissolved in a sample of water, containing litmus, litmus will turn \_\_\_\_\_\_\_\_\_ indicating a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solution.
3. An elements that is more reactive than cesium is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. An organic compound must contain the element \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. What two elements are present in all hydrocarbons?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Are hydrocarbons organic or inorganic?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. What three elements are present in all alcohols?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Are hydrocarbons organic or inorganic?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify whether the following compound is organic or inorganic.
   1. CH3OH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. C4H­10 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. CaC2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. FeCO­3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. CH­3COOH\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. CsOH­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Draw structural diagrams for these organic compounds. They can only be represented in one way.
   1. CH4
   2. CH­4O
   3. C2H5Cl
3. Draw structural diagrams for each of these organic compounds in two different ways.
   1. C3H6
   2. C2H4Cl
   3. C2H6O