**Revision For Final Test Yr 9 Chemistry**

Q1. List 3 properties of acids.

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

Q2 Write the formulae and names for three common acids.

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

Q3. List 3 properties of bases

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

Q4 Write the formulae and names for three common bases.

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

Q5. Which solution will be more acidic?

1M HCl or 0.1 M HCl ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q6. Which solution will have the lower pH

1M HCl or 0.1 M HCl ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q5. Which solution will be more acidic?

1M HCl or 1 M citric acid solution \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q6. Write the down the colour of universal indicator if it is placed in a beaker of solution where the

pH = 7 Colour of universal indicator =\_\_\_\_\_\_\_\_\_\_\_\_\_

pH = < 7 Colour of universal indicator =\_\_\_\_\_\_\_\_\_\_\_\_\_

pH = > 7 Colour of universal indicator =\_\_\_\_\_\_\_\_\_\_\_\_\_

Q7. List some common household chemicals or foods that are acidic.

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

Q8. List some common household chemicals that are basic.

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

Q9. Write the correct symbol and valency for the following ions

sodium \_\_\_\_\_\_\_, silver \_\_\_\_\_\_\_\_\_, hydroxide \_\_\_\_\_\_\_\_\_\_,

nitrate \_\_\_\_\_\_\_\_, oxide \_\_\_\_\_\_\_\_\_\_, Calcium \_\_\_\_\_\_\_\_\_\_\_\_\_,

Q 10.

Write the ionic formulas for the following compounds in the spaces provided.

potassium bromide \_\_\_\_\_\_\_\_\_\_\_\_\_\_ calcium hydroxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

sodium hydroxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_aluminium nitrate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hydrogen gas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Oxygen gas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q 11.

**Complete** the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Particle | Number of Protons | Number of Neutrons | Number of Electrons | Atomic No. |
| 14 N  7 |  |  |  |  |
| 23  11  Na+ |  |  |  |  |
| Cl-  35  17 |  |  |  |  |
|  | 14 | 15 | 10 |  |

Q 12. Write the electron configuration for the above atoms and ions.

14 N =  \_\_\_\_, \_\_\_\_ Na+ =\_\_\_\_\_,\_\_\_\_\_. Cl- =  \_\_\_\_,\_\_\_\_\_,\_\_\_\_

7

**IS IT AN ACID OR A BASE ?**

**Acids, Bases and Salts**

**Acids** ( will release H+ ions into solution) eg HCl

**Bases** ( Metal hydroxides or oxides)—neutralise acids eg, NaOH,Na2O,

**Salts** ( ionic compounds which contain any positive ion (apart from H+) and any negative ion (other than OH- or O2-) eg NaCl, KNO3

**Classify the following compounds** ***as either acids ,bases or salts***

KOH, NaCl, Mg(NO3)2,HNO3,PbSO4,NaOH, K2CO3,H2SO4, CaS, MgSO4,CuCO3

CH3COOH, Ca(OH)2,MgO, AgCl, HF.

|  |  |  |
| --- | --- | --- |
| **Acids** | **Bases** | Salts |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. **Acid - Metal Reactions**

Atoms from the metal replace the hydrogen atom(s) contained in the acid. The resulting substance is called a salt. Hydrogen gas, formula H2, is also produced. Use this idea to write formulas for the products formed when the following acids and metals react.

# REACTANTS PRODUCTS

1. Zn + HCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Zn + H2SO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Zn + HNO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Mg + H2SO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Fe + HCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Acid-Base or Acid- Carbonate reactions**

(b). Determine the products formed when each of the following pairs of compounds react together. Do this by ***swapping*** the pair of ions in each compound to work out the products that form. Use ***valencies*** to write correct formula for the products.

Complete the table by writing formula for the reactants or products in the space provided.

|  |  |
| --- | --- |
| **REACTANTS** | **PRODUCTS** |
| 1. NaOH + HCl |  |
| 2. KOH + HNO3 |  |
| 3. HCl + Na2CO3 |  |
| 4. NaOH + H2SO4 |  |
| 5. MgCO3 + HCl |  |
| 6. Zn(OH)2 + HCl |  |
| 7. Ca(OH)2 + HNO3 |  |
| 8. H2SO4 + CaCO3 |  |

##### GENERAL REACTIONS WORKSHEET ( *Extension)*

**For each of the following reactions predict the products or reactants as required. Write the correct formula for each species and then balance the complete equation.**

1. HC1 + MgO **→** \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_
2. Zn + HCl **→** \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_
3. HC1 + KOH **→** \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_
4. HNO3 + (NH4)2CO3 **→** \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_
5. \_\_\_\_Al + \_\_\_HCl **→ \_\_\_\_**A1C13 + \_\_\_\_\_\_H2
6. CaCO3 + H2SO4 **→** \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_
7. CH4 + O2  **→** \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_ (excess oxygen)

8. C2H6 + O2  **→** \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_ (limited oxygen)

**GENERAL REACTIONS SUMMARY**

Complete the following list of common chemical reactions.

**Copy and complete** the general equations listed here.

(a) ACID + METAL → \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) ACID + BASE → \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) ACID + CARBONATE → \_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_

(d) METAL + OXYGEN → \_\_\_\_\_\_\_\_\_\_\_

1. Complete the table by putting in the **formulas**. The first one has been done for you.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Negative Ions** | | | | | |
| **Positive Ions** | Chloride | Sulfide | Hydroxide | Nitrate | Sulfate | Phosphate |
| Potassium | ***KCl*** |  |  |  |  |  |
| Calcium |  |  |  |  |  |  |
| Tin (II) |  |  |  |  |  |  |
| Lead |  |  |  |  |  |  |
| Iron (III) |  |  |  |  |  |  |
| Ammonium |  |  |  |  |  |  |

(18)

1. **Correct** the following formulae **if necessary**

Iron II carbonate Fe2(CO3)3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sodium chloride NaCl2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Copper II oxide Cu2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Barium hydroxide BaOH2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Iron II sulfate FeSO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sodium hydrogencarbonate NaHCO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Iron III chloride FeCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Silver carbonate AgCO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(8)

1. Give the **chemical names** for the following formulae.

**FORMULA NAME**

ZnSO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NH4Br \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cu(HCO3)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CaCO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the correct formulae for compounds formed from the following hypothetical ions.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **V-** | **W2-** | **X3-** |
| **A+** |  |  |  |
| **B2+** |  |  |  |