**YEAR 11 ATAR CHEMISTRY**

**Units 1&2 TASK 13 MARKS: 30**

**Practical Report 2 Quiz ANSWERS**

**EXPERIMENT 21: TYPES OF CHEMICAL REACTIONS**

1. Complete the following general word equations: (2 marks)

a) Metal Carbonate + Acid 🡪 \_\_\_\_\_Salt\_\_\_\_\_ + \_\_\_\_CO2\_\_\_\_ + \_\_\_\_\_H2O\_\_\_

b) Metal + \_\_\_\_\_Oxygen\_\_\_\_\_\_\_\_\_ 🡪 Metal Oxide

2. What would you *observe* when each of the two reactions above are carried out?

(2 marks)

1. \_Solid dissolves ( ½ ) colourless gas evolved ( ½ ) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_solid changes colour ( ½ ) forms new solid or bright light produced ( ½ )

# Experiment 22: SolubilitY RULES.

1. Fill in the following table with the colour of the precipitate or write “NR” if there is no precipitate formed, when each combination of solutions is mixed together. (6 marks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Solutions | NaNO3 | NaCl | Na2SO4 | Na2CO3 |
| AgNO3 | NR | White | White | Yellow |
| Pb(NO3)2 | NR | White | White | White |
| BaCl2 | NR | NR | White | White |

(½ mark each)

4. Why is it important to wash out the plate or test tube with distilled water before carrying out another test in it? (2 marks)

To remove any traces of ions from previous test so as to not contaminate the next test.\_\_

**Experiments 31, 32 – ACID REACTIONS WITH SOME METAL COMPOUNDS**

1. Fill in the following table with the colour “blue” or “red”. (2 marks)

|  |  |  |
| --- | --- | --- |
| Substance added | Colour of red litmus | Colour of blue litmus |
| Hydrochloric acid | ***RED*** | ***RED*** |
| Sodium hydroxide | ***BLUE*** | ***BLUE*** |

1. Complete and balance the following molecular equations for the reactions *if* they occur. If they don’t occur, write “no reaction”. (4 marks)
   1. **2**HCl + Mg → **MgCl2 + H2**
   2. HCl + Cu → **no reaction**
   3. **2**HCl + CaCO3 → **CaCl2 + H2O + CO2**
   4. HCl + NaHCO3 → **NaCl + H2O + CO2**
2. a) Give two observations that you made during the part of the experiment that

involved adding sodium carbonate to hydrochloric acid.

1. **Bubbling, fizzing within the reaction t/tube**

ii) **Limewater turned milky in the other t/tube**

(1 mark)

b) During the part of the experiment that involved adding hydrochloric acid to copper(II) oxide:

i) What observation did you make that allowed you to identify the product of the reaction?

**The black powder dissolved, producing a green solution**

(1 mark)

ii) Write a balanced ionic equation, (showing all states) for this reaction.

**2H+(aq) +** **CuO(s) →** **Cu+2 (aq) + H2O(l)** (1 mark)

8. Fill in the following table for each reaction type to show all of the products formed-use any of the words/formulas: *salt, H2O, CO2, NH3* or *H2.*

Also give the test or method of identifying the product(s)-use the words: *pop test, limewater test, odour,* or *colour change.* (8 marks)

|  |  |  |
| --- | --- | --- |
| REACTION TYPE | PRODUCTS | TEST/METHOD |
| Acid + Reactive Metal | **Salt + H2** | **Pop test** |
| Strong Acid + Strong Base | **Salt + H2O** | **Colour change** |
| Acid + Metal Hydrogencarbonate | **Salt + H2O + CO2** | **Limewater test** |
| Acid + Metal Oxide | **Salt + H2O** | **Colour change** |

9. a) The reactivity of acids in aqueous solution relies on the action of which ion?

(½ mark)

**H+ or H3O+**

b) Using the *Arrhenius* theory, write an equation showing how hydrochloric acid produces this ion. (½ mark)

**HCl → H+ + Cl-**

END OF TEST