**Task 5: Chemistry Year 11: INVESTIGATION: Chemical Bonding 2019**

**Prelab to be handed in on the Thursday 28thth March 2019**

**Experiment 13 to be carried out on 28th March 2019 (Prelab+Expt write up= 50% of total )**

**Write up and validation test on Thursday 4th April 2019 (Validation test =50% of total)**

**PRELAB: (Mark out of 25)**

1. Create a table similar to the following summarising the properties of materials with the different types of bonding. **(6 marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Properties | Metallic | Covalent Network | Covalent Molecular | Ionic |
| Conductivity |  |  |  |  |
| Hardness |  |  |  |  |
| etc |  |  |  |  |
|  |  |  |  |  |

1. Considering the properties of the materials think about what kind of experiments you could conduct to distinguish whether a material is ionic, covalent network, covalent molecular or metallic.

**Produce a detailed dichotomous key to show how would distinguish between the different types of substances. (8 marks)**

You will need at least 3 experiments to distinguish between all 4

The materials that you need to be able to distinguish are:

Sodium hydroxide, copper, silver nitrate, candle wax, sulphur, naphthalene, water, kerosene, ethanol, sucrose, sodium chloride, hydrochloric acid.

1. For each experiment write a short procedure and include an equipment summary. (**9 marks)**
2. What safety precautions will you need to take (**2 marks**)

**Laboratory (Mark out of 25)**

**Conduct Experiment 13**

In your write up you must include:

**Aim:**

**Method:** As per STAWA 11 Experiment 13

**Table of results** , it must be neatly ruled, include the substance, it’s state (ie solid, liquid, aqueous solution) and detailed observations, and any measurements which must include the correct units (**10 marks)**

**Discussion of results:** Which includes all of the discussion questions on Expt 13 **(10 marks, )**

**Errors:** Discussion of any uncertainties or errors that arise in your measurements and ways to improve the experiment. **(3 marks) PTO**

**Conclusion:** Summarises your findings **(2 marks)**

**VALIDATION TEST (MARK OUT OF 50) :** This will test your ability to distinguish between the different bonding types and interpret your experimental results.