**Introduction Booklet for A-Level Chemistry Students**

**Course starts: September 2019**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**





**Task 1**

Naming and drawing compounds – counting to 10 in chemistry

1. Give the name of a 2 carbon alkane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How many carbon atoms does butanol contain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Give the name of a 10 carbon alkane. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Draw the structure of propane.
5. Name the molecule below. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Task 2**

Rounding, significant figures and standard form

1. Put the following numbers into standard form;

826137920 0.000052848

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

1. Convert the following numbers from standard form.

6.82x10-4 4.29x105

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

1. Express the following numbers to 3 significant figures

32574893 0.63473965

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

1. Round these numbers up or down where appropriate to give 2 decimal places.

93.994344 374.28773

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

1. Express these numbers to 4 significant figures

56783 0.00758493

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

**Task 3**

1. Write an equation for the production of ammonia from nitrogen and hydrogen.
2. If 1000kg of nitrogen and 500kg of hydrogen were reacted, what would be the maximum theoretical yield of ammonia?

Calculating percentage yield

For the questions below find the theoretical mass and from the information given calculate the percentage yield. Use this balanced equation for your answers.

 C2H6 + 31/2O2 🡪 2CO2 + 3H2O

1. What mass of carbon dioxide could be produced from 30g of ethane? (3)
2. What would be the percentage yield if this experiment were carried out and only 62g of CO2 were produced? (2)

**Task 4**

Rearranging formulae

1. Rearrange the following formula to give ‘mass’ **moles = mass**

 **Mr**

1. Rearrange the following formula to give ‘volume’ **moles = concentration x volume**
2. Rearrange the following formula to give ‘volume of gas’ **moles of gas = volume of gas x 24**
3. Rearrange the following formula to give ‘Mr’ **moles = mass**

 **Mr**

Task 5 Converting between units

1. Convert the following into kg:

 1g \_\_

 100g \_\_\_

 0.1g\_\_\_

 1 x 106 mg \_\_\_

1. Convert the following into J:
2. 1 MJ\_\_\_
3. 25kJ\_\_\_
4. 0.56 kJ\_\_\_
5. 2.5 x 10-2 MJ\_\_\_