$\qquad$ YP/MR

Question One- Complete the following tables

| Concentration <br> of standard <br> $\left(\mathrm{molL}^{-1}\right)$ | Average titre <br> $(\mathrm{mL})$ | Amount of <br> standard <br> $(\mathrm{mol})$ | Ratio <br> Std $:$ Unkn | Amount of <br> unknown <br> $(\mathbf{m o l})$ | Volume of <br> unknown <br> $(\mathrm{mL})$ | Concentration <br> of unknown <br> $\left(\mathrm{molL}^{-1}\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.102 | 13.7 |  | $1: 2$ |  | 20 |  |
| 0.113 | 20.3 |  | $1: 1$ |  | 20 |  |
| 0.0987 | 16.5 |  | $2: 1$ |  | 10 |  |
| 0.128 | 14.3 |  | $1: 1$ |  | 15 |  |

## Question Two

The main chemical in LPG is propane $\left(\mathrm{C}_{3} \mathrm{H}_{8}\right)$, it is a fossil fuel. The burning of propane can be described by the equation below:

$$
\mathrm{C}_{3} \mathrm{H}_{8}+5 \mathrm{O}_{2} \rightarrow 3 \mathrm{CO}_{2}+4 \mathrm{H}_{2} \mathrm{O}
$$

Calculate the maximum mass of carbon dioxide forms when 50 g of propane is burnt under excess oxygen.

Calculate the minimum mass of oxygen gas is required to burnt 23 g of propane

Calculate the mass of propane required to produce 530 g of water

