| Name: | Student Code: |
|---|---|

# Laboratory Task I

## RESULTS SHEET

A. Standardisation of Iodine Solution

Concentration of standard $Na_2S_2O_3$ in bottle : ..... ……..... M

| | Volume | | |
|---|---|---|---|
| **Titration Number** | **1** | **2** | **3** |
| aliquot of $I_2$ (mL) | 5.00 | 5.00 | 5.00 |
| initial buret reading (mL) | | | |
| final buret reading (mL) | | | |
| standard $Na_2S_2O_3$ (mL) | | | |

The volume of titre used in calculation = [ ] mL

Calculation for iodine concentration:

mol ratio of $I_2$ : $S_2O_3^{2-}$ = [ : ]

Concentration of $I_2$ [ ] M

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# Laboratory Task I

B. A kinetic study of the acid catalyzed reaction between acetone and iodine in aqueous solution

B-1. Calculation for initial concentrations (M) in the solution mixtures

| | **Concentration** | | | |
|---|---|---|---|---|
| **Flask No.** | **I** | **II** | **III** | **IV** |
| $[I_2]$, M | | | | |
| [acetone], M | | | | |
| [HCl], M | | | | |

B-2. Calculation for the concentration (M) of iodine remaining in Flasks I to IV at 7 minutes.

| | **Volume** | | | |
|---|---|---|---|---|
| | **I** | **II** | **III** | **IV** |
| initial buret reading (mL) | | | | |
| final buret reading (mL) | | | | |
| standard $Na_2S_2O_3$ (mL) | | | | |
| $[I_2]$ remaining at 7 minutes (M) | | | | |
| | | | | |

B-3. Calculation for initial rate of disappearance of $I_2$ at 7 minutes for Flasks I to IV (in M $s^{-1}$)

$$\text{Initial rate of disappearance of iodine (M s}^{-1}) = -\frac{d[I_2]}{dt}$$

| **Flask No.** | **I** | **II** | **III** | **IV** |
|---|---|---|---|---|
| **Calculation for rate** | | | | |
| **Initial Rate =** | | | | |

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B-4. Calculation for the kinetic orders x, y and z

| **Calculation for x** | **Calculation for y** | **Calculation for z** |
|---|---|---|
| | | |
| x = (integer) | y = (integer) | z = (integer) |

Write rate equation or rate law

Rate =

B-5. Calculation for the rate constant, k, for Flasks I to IV with proper unit.

| **Flask No.** | **I** | **II** | **III** | **IV** |
|---|---|---|---|---|
| **Calculation** | | | | |
| **Rate Constant k =** | | | | |
| **Unit** | | | | |

B-6. Mean value of rate constant =

**Chemicals and/or laboratory ware can be requested if used up or broken. The penalty of each request will be loss of 1 point.**

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# Laboratory Task I

| No. | Loss Point | Remark | Student's signature |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |