Student's Name: _____

Signature: _____

545/2
CHEMISTRY
(PRACTICAL)
Paper 2
2 hours.

ABDUL-RAHMAN BUN AUF ISLAMIC INSTITUTE NAMAGOMA

CHEMISTRY DEPARTMENT EXAMINATIONS BOARD

CHEMISTRY PRACTICAL

2 Hours

INSTRUCTONS:

Attempt **all** *the questions. Your answers* **must** *be written in the answer sheet*(*s*) *and graph paper*(*s*) *provided.*

All working **must** *be clearly shown in* **blue** *or* **black** *ink.*

Mathematical tables and silent non-programmable scientific calculators may be used.

For Examiners' Use Only									
Question 1	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**Total**
Max marks	**1**	**3**	**1**	**1**	**7**	**5**	**10**	**2**	**30**
Actual marks									

Turn Over➡

QUESTION 1.

In this experiment you will investigate the **rate of reaction between sodium thiosulphate and dilute hydrochloric acid at different temperatures**.

You are provided with the following;

- **BA1** which is 0.07M sodium thiosulphate ($155cm^3$)
- **BA2** which is 2M hydrochloric acid ($30cm^3$)
- All other apparatus required for the investigation

Carryout your own investigation at room temperature, 35^0C, 45^0C, 55^0C, and 65^0C of hydrochloric acid and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of apparatus and materials used.
e. Procedure of the experiment.
f. Tabulation of data.
g. (i) A graph of time against temperature of hydrochloric acid.
   (ii) A graph of $\frac{1}{t}$ against temperature of hydrochloric acid.
h. Conclusion from the investigation.

QUESTION 2.

In this experiment you will investigate the **rate of reaction between dilute hydrochloric acid and magnesium ribbon at different temperatures.**

You are provided with the following;

- **FA1** which is 2M hydrochloric acid ($160cm^3$)
- Substance **G** which is magnesium ribbon (9cm long)
- All other apparatus required for the investigation.

Carryout your own investigation at room temperature, 35^0C, 45^0C, 55^0C, 65^0C and 75^0C of hydrochloric acid and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of apparatus and materials used.

e. Procedure of the experiment.
f. Tabulation of data.
g. A graph of $\frac{1}{t}$ against temperature of hydrochloric acid.
h. Gradient / slope of your graph plotted in (g) above and indicate its units.

QUESTION 3.

In this experiment you will investigate the effect of concentration of sodium thiosulphate on **rate of reaction between dilute hydrochloric acid and sodium thiosulphate.**

You are provided with the following;

- **BA1** which is 0.25M sodium thiosulphate solution ($160cm^3$).
- **BA2** which is 2M hydrochloric acid ($55cm^3$).
- Distilled water ($110cm^3$).
- All other apparatus required for the investigation.

Carryout your own investigation varying concentration of **BA1** and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of apparatus and materials used.
e. Procedure of the experiment.
f. Tabulation of data.
g. A graph of volume of sodium thiosulphate against time.
h. Conclusion from your investigation.

QUESTION 4.

In this experiment you will investigate the effect of concentration of hydrogen peroxide on **rate of reaction between hydrogen peroxide and acidified potassium iodide.**

You are provided with the following;

- **BA1** which is 0.1M hydrogen peroxide solution ($110cm^3$)
- **BA2** which is 0.08M sodium thiosulphate solution ($80cm^3$)
- **BA3** which is 0.1M acidified potassium iodide solution ($130cm^3$)
- Starch solution ($10cm^3$) and distilled water ($80cm^3$).
- All other apparatus required for the investigation.

Carryout your own investigation varying concentration of **BA1** and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of apparatus and materials used.
e. Procedure of the experiment.
f. Tabulation of data.
g. (i) A graph of volume of **BA1** against time.
   (ii) A graph of $\frac{1}{t}$ against volume of **BA1.**
h. Conclusion from your investigation.

QUESTION 5.

In this experiment you will investigate the effect of concentration of hydrochloric acid on the **rate of reaction of between hydrochloric acid and magnesium ribbon.**

You are provided with the following;

- **BA1** which is 2M hydrochloric acid ($105cm^3$).
- Substance **H** which is magnesium ribbon (8cm long).
- Distilled water ($30cm^3$).
- All other apparatus required for the investigation.

Carryout your own investigation varying concentration of **BA1** and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of the apparatus and materials used.
e. Procedure of the experiment.
f. Tabulation of data.
g. A graph of $\frac{1}{t}$ against volume of hydrochloric acid.
h. Conclusion from your investigation.

QUESTION 6.

In this experiment you will investigate effect of concentration of sodium thiosulphate on **rate of reaction between hydrogen peroxide and acidified potassium iodide solution.**

You are provided with the following;

- **BA1** which is 0.1M hydrogen peroxide (130cm^3).
- **BA2** which is 0.1M sodium thiosulphate solution (35cm^3).
- **BA3** which is acidified potassium iodide solution (130cm^3).
- Starch solution (10cm^3) and distilled water (35cm^3).
- All other apparatus required for the investigation.

Carryout your own investigation varying concentration of **BA2** and write a brief report about your findings. Your report should include the following:

a. Aim of the experiment.
b. Variables of the experiment.
c. Hypothesis.
d. List of the apparatus and materials used.
e. Procedure of the experiment.
f. Tabulation of data.
g. A graph of $\frac{\mathbf{1}}{\mathbf{t}}$ against volume of **BA2**.
h. Comment on the shape of your graph plotted in (g) above.

END.