NAME:		INDEX NO:	
SCHOOL:		SIGNATURE:	

535/3
PHYSICS
PRACTICAL
Paper 3
2 ¼ hours

UNNASE MOCK EXAMINATIONS

Uganda Certificate of Education

PHYSICS PRACTICAL

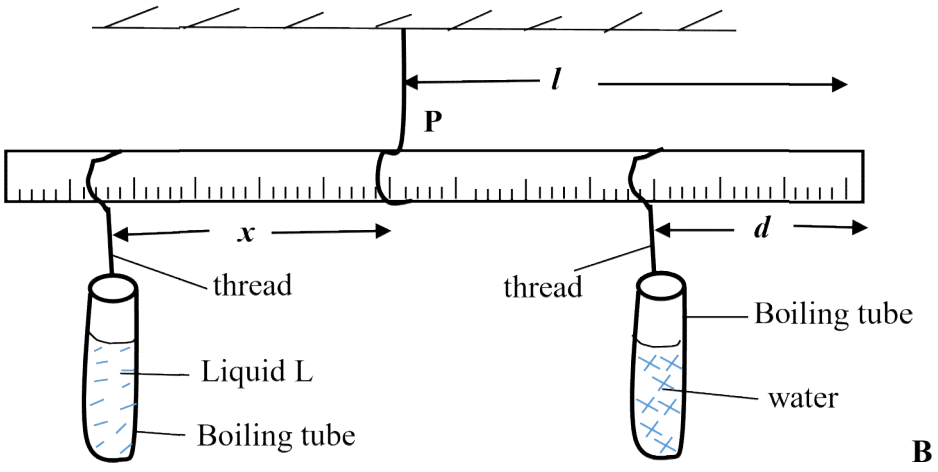
Paper 3

2 hours 15 minutes

Instructions to Candidates:

- *Answer question 1 and one other question.*
- *You will not be allowed to start working with the apparatus for the first quarter of an hour.*
- *Marks are given for clear record of the observations actually made for their suitability and accuracy and for the use made of them.*
- *Whenever possible, candidates should put their observation and calculations in a suitable table drawn in advance*
- *Graph papers are provided*

1) In this experiment you will determine the density of the liquid L.



(a) Suspend the metre rule from a retort stand using a piece of thread so that the rule balances horizontally.

(b) Note and record the balancing point **P** and its distance l from the end **B**.

(c) Measure 25cm^3 of water and pour it into a boiling tube and put it aside in a test tube rack.

(d) Measure 25cm^3 of the liquid mark **L** into another boiling tube. Place it in the test tube rack.

(e) Suspend the boiling tube containing water at a distance *d = 10.0cm* from end **B** using a piece of thread.

(f) Suspend the boiling tube containing the liquid marked **L** and adjust its position until the metre rule balances horizontally as shown in the figure.

(g) Measure and record the distance, ***x***, from **P**.

(h) Repeat procedures (c) to (g) for values of ***d*= 15.0, 20.0, 25.0, 30.0** and **35.0 cm**.

(i) Record your results in a suitable table including values of *(l - d)*

(j) Plot a graph of x against *(l - d)*

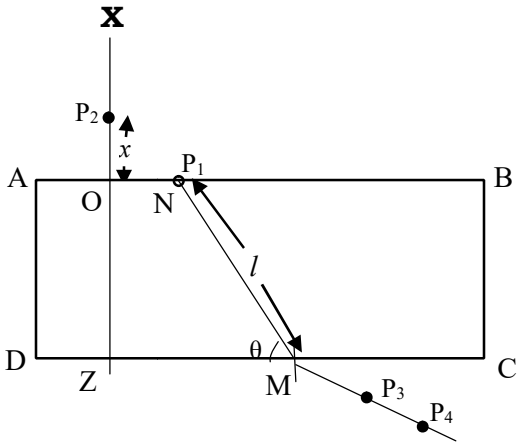
(k) Find the slope, **S**, of the graph.

(l) Calculate the density, of liquid L from the expression $nsity = \frac{1000}{s}$.

2. In this experiment, you will determine the constant, ***w***, of the glass block provided.

(a) Fix a plane sheet of paper on the soft board using the thumb pins.

(b) Place the glass block on the plane sheet of paper with its broad face upper most.



(c) Draw the outline ABCD of the glass block and then remove it.

(d) Mark points O and N on AB such that AC = 1.0cm and AN = 2.0cm

(e) Draw a perpendicular XZ cutting AB and DC at O and Z respectively, with OX about 6.0cm.

(f) Replace the glass block onto its outline, fix pin P_2 at a distance x = 1.0cm from 0 along the perpendicular XZ.

(g) Fix pin P_1 at N, looking through the glass block from side DC, fix pins P_3 and P_4 such that they are in a straight line with the images of P_1 and P_2.

(h) Remove the glass block, draw a line through points P_3 and P_4 to meet DC at M. join M to N.

(i) Measure the length MN = l and angle θ.

(j) Keeping pin P_1 at N, repeat the procedures (f) to (i) for values of *x = 1.5*, 2.0, 3.0, 4.0 and 5.0 cm.

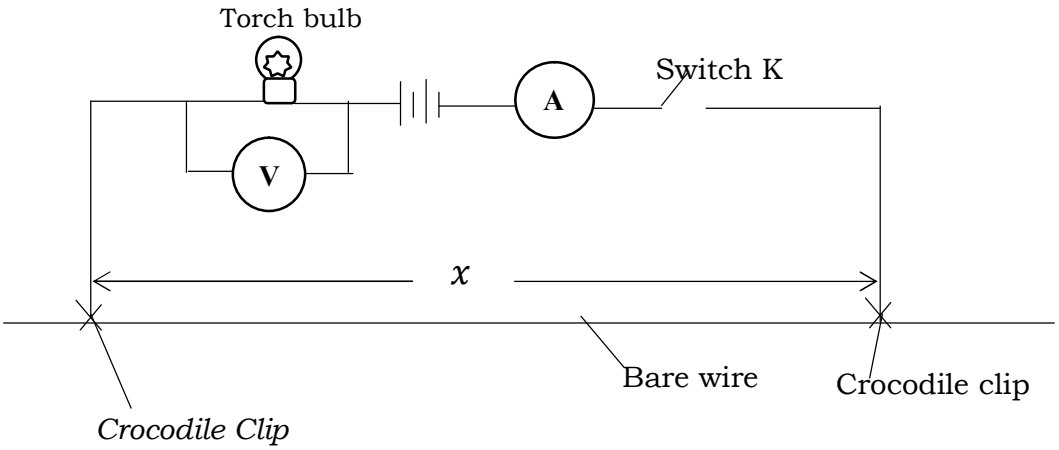
(k) Tabulate your results including values of $\frac{1}{\sin\theta}$.

(l) Plot a graph of l against $\frac{1}{\sin\theta}$.

*(m)*Find the slope, w, of the graph.

3. In this experiment you will determine the constant, R of a touch bulb.

(a) Connect the circuit as shown in the figure below.



(b) Starting with length $x = 0.100m$, close the switch K.

(c) Read and record voltmeter and ammeter readings V and I respectively and open the switch K.

(d) Repeat the procedures (b) and (c) for values of $x = 0.200, 0.300, 0.400, 0.600$ and $0.800m$

(e) Enter your results in a suitable table including values of $\frac{1}{I}$ and $\frac{1}{v}$.

(f) Plot a graph of $\frac{1}{I}$ against $\frac{1}{v}$.

(g) Find the slope, R of the graph.

****** END ******