

Name:.....Admission No.....

232/3

Candidate's Signature:.....

**PHYSICS PRACTICAL**

Paper 3

Date:.....

**TERM TWO**

2 ½ hours

**FORM THREE**

**INSTRUCTIONS TO CANDIDATES**

- (a) Write your name and admission number in the spaces provided above.
- (b) Sign and write the date of examination in the spaces provided above.
- (c) Answer **ALL** the questions in the spaces provided in the question paper.
- (d) You are supposed to spend the first **15 minutes** of the 2½ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (e) Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.
- (f) Candidates are advised to record their observations as soon as they are made.
- (g) Non-programmable silent electronic calculators may be used.
- (h) **This paper consists of 5 printed pages.**
- (i) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- (j) **Candidates should answer the questions in English.**

**For Examiner's Use Only**

**Question 1**

	b	d	e	f	g(i)	(ii)		
<b>Maximum Score</b>	1	7	5	3	2	2		20
<b>Candidate's Score</b>								

**Total**

**Question 2**

	b	c(i)	(ii)						
<b>Maximum Score</b>	12	5	3						20
<b>Candidate's Score</b>									

**Total**

**GRAND**

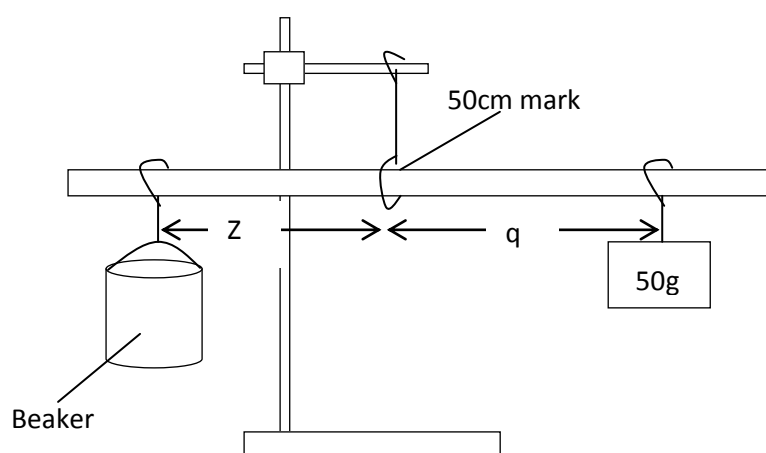
*This paper consists of 5- printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing. The Teacher to comment directly to the below content.*

## QUESTION ONE

1. You are provided with the following apparatus;

- Metre rule
- Small piece of plasticine
- 250ml beaker
- 3 pieces of cotton thread each 30cm long
- A piece of cellotape 5cm
- A measuring cylinder 100ml
- A stand and clamp
- 50g mass

- a) Using 30cm thread, suspend the metre rule at the 50cm marks. You may use some plasticine to ensure that the balance is exactly at 50cm.
- b) Suspend the empty beaker at 40cm mark and hang the 50g mass to the other side



Move the 50g mass until the metre rule balances horizontally. Record the distance

$q = \dots\dots\dots$ cm (1mrk)

Use the cello tape provided to fix the position of the 50g mass. Note the point of suspension must remain the same throughout the experiment.

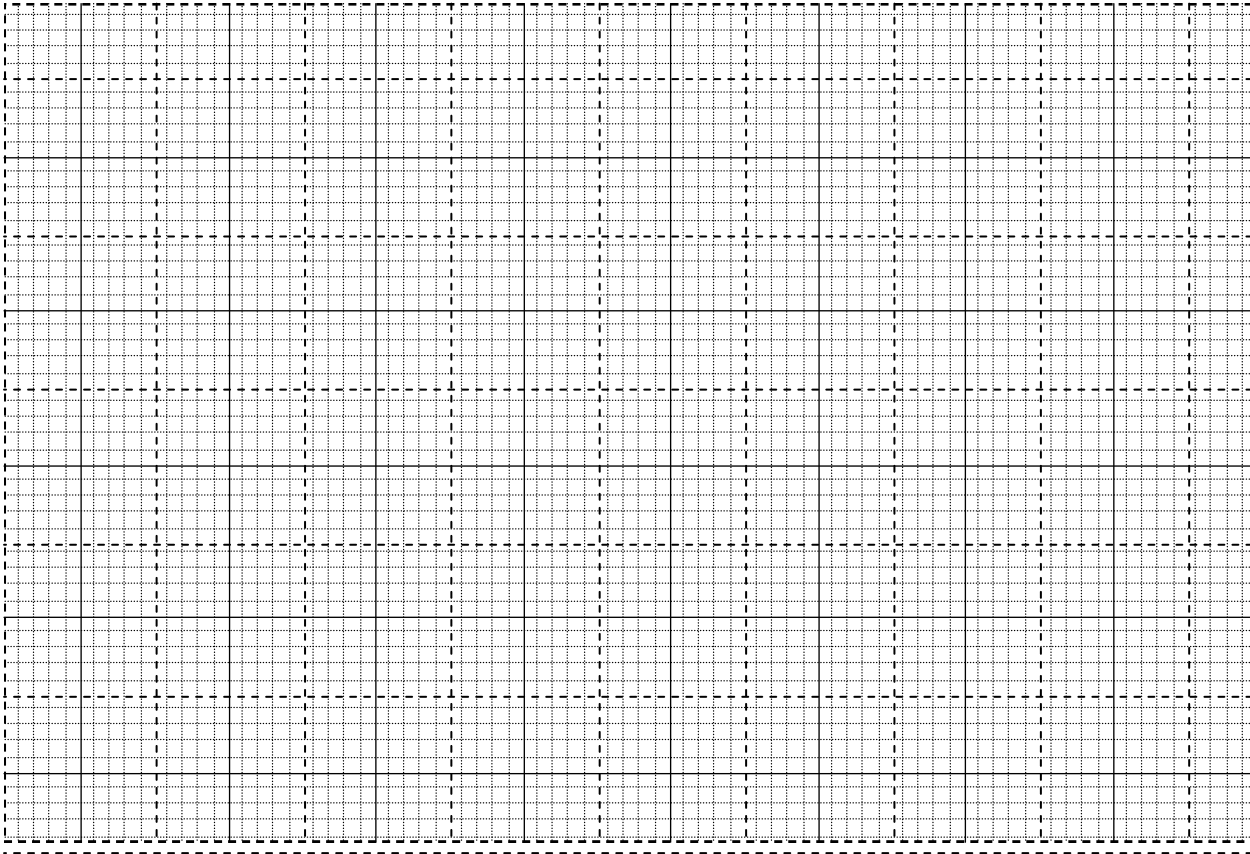
- c) Using the measuring cylinder measure  $20\text{cm}^3$  of water and add it to the beaker. By varying the length  $Z$  obtain the new point and record it in the table below.
- d) Repeat the procedure above for other values of volumes as shown in the table, hence complete it

Volume $V \text{ cm}^3$	0	20	40	60	80	100	120
Length $Z \text{ cm}$							
$\frac{1}{z} \text{ cm}^{-1}$							

(7mrks)

e) Plot a graph of volume  $V$  against  $\frac{1}{z}$

(5mrks)



f) Determine the slope  $S$  of the graph

(3mrks)

g) From the equation  $V = 1000 \frac{50q}{dz} - \frac{1000m}{d}$

Determine the values of

i)  $D$  (2mrks)

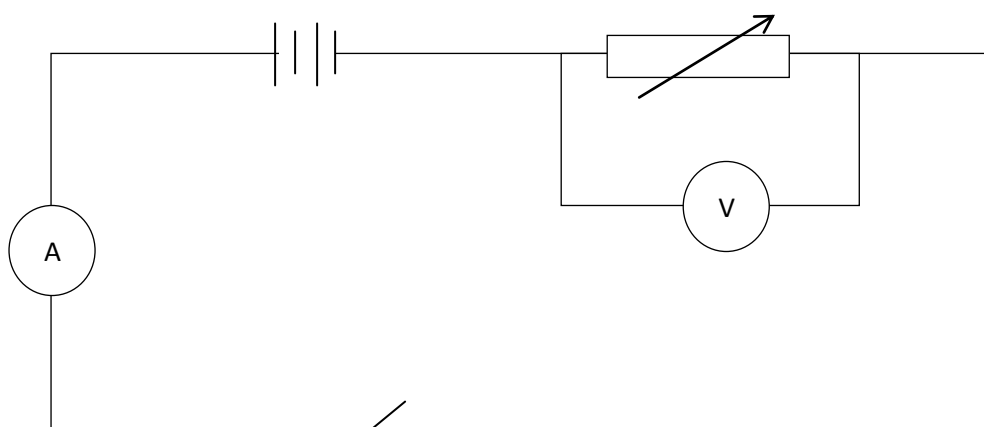
ii)  $m$  (2mrks)

## QUESTION 2

2. You are provided with the following apparatus

- an ammeter
- a voltmeter
- Two dry cells
- a cell holder
- potentiometer/variable resistor
- connecting wires

a) Connect the apparatus as shown below



b) Adjust the potentiometer until you are able to obtain minimum reading on the voltmeter and maximum on the ammeter. Record these readings in the table below.

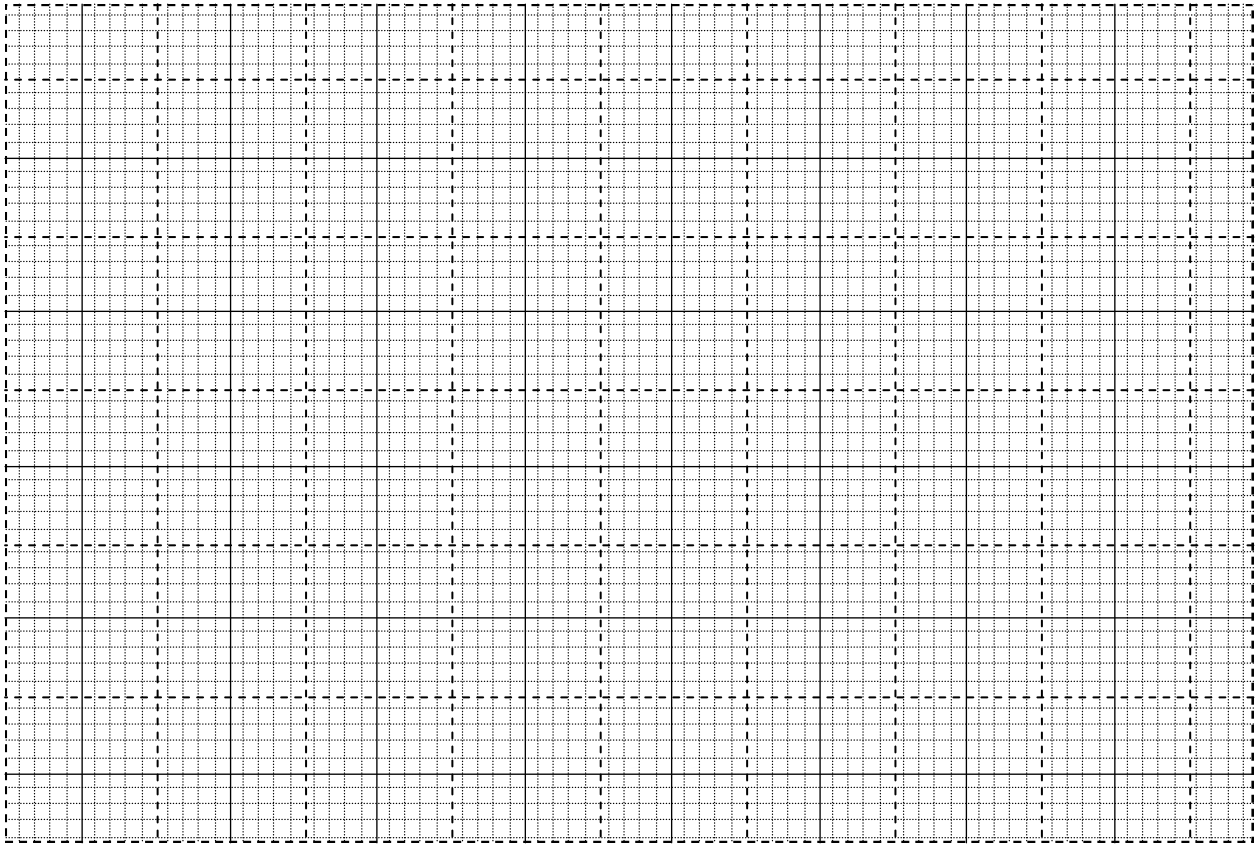
V (V)						
I (A)						
$\frac{V}{I}$						
$\frac{1}{I}$						

(12mrks)

c) By adjusting the potentiometer, obtain five more readings at an interval of 0.5V and complete the table

i) Plot a graph of  $\frac{V}{I}$  against  $\frac{1}{I}$

(5mrks)



ii) The equation for the graph is given by  $\frac{V}{I} = \frac{E}{I} - k$  where  $E$  and  $k$  are constants. From the graph determine the value of  $E$  and  $k$ . (3mrks)