Name
School
Date. $\qquad$
Candidate's signature

232/3
PHYSICS
PRACTICAL
PAPER 3
JULY / AUGUST 2012
TIME: 2 HOURS

## LGITOKITOK DISTRICT JOINT EVALUATION TEST - 2012 <br> Kenya Certificate of Secondary Education (K C.S.E.)

## INSTRUCTIONS TO THE CANDIDATES:

Write your name and Index Number in the spaces provided above.
2. Sign and write the date of examination in the spaces provided above
3. Answer all the questions in the spaces provided in the question paper.
4. You are supposed to spend the first $\mathbf{1 5}$ minutes of the $21 / 2$ hours allowed for this paper reading the whole paper carefully before commencing your work.
5. Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.
6. Candidates are advised to record their observations as soon as they are made.
7. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

## FOR EXAMINERS' USE ONLY

Q1

| QUESTION | a | b | c | TOTAL |
| :--- | :---: | :---: | :---: | :---: |
| MAXIMUM SCORE | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{1 7}$ |  |
| CANDIDATES SCORE |  |  |  |  |

## Q. 2

| QUESTION | b | c | d | e | f | g | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MAXIMUM SCORE | $\mathbf{8}$ | - | $\mathbf{5}$ | $\mathbf{3}$ | $\mathbf{3}$ | $\mathbf{1}$ |  |
| CANDIDATES SCORE |  |  |  |  |  |  |  |

This paper consists of 12 Printed pages.
Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

1. You are provided with the following

- A metre rule
- A piece of thread
- A clamp, boss and stand
- A mass labeled W
- $\quad 2$ masses of 20 g
- A mass of 50 g
- $\quad 2$ masses of 10 g

Procedure
a) Using thread suspend the metre rule from the stand and note down the centre of gravity.

b) i) $e^{0 .}$ Hang the mass $W$ from the 65 cm mark. Suspend the 50 g mass from the other side

ii) Measure distance X and Y
$\mathrm{X}=$.
Metres
(1 mark)
$\mathrm{Y}=$ Metres
c) i) Maintaining the points of suspension of the metre rule at G and the mass labeled W at 65 cm mark. Repeat the experiment for the masses of $70,80,90,100$ and 120 g .. enter the results in the table below.

| Mass(g) | WeightF(N) | DistanceX(M) | $\frac{1}{X} M^{-1}$ |
| :--- | :--- | :--- | :--- |
| 50 |  |  |  |
| 70 |  |  |  |
| 80 |  |  |  |
| 90 |  |  |  |
| 100 |  |  |  |
| 120 |  |  |  |


iii) Determine the slope, S , of the graph.
iv) Given that $\mathrm{F}=\frac{W Y}{X}$ where $\mathrm{W} \cdot \mathrm{e}^{4^{5^{\circ}}}$ a constant, find its value.
2. You are provided with the following apparatus

- An Aøímeter(0-1.0A)
- A œoltmeter(0-2.5V)
- A resistance wire PQ mounted on a mm scale

Two new dry cells.
A switch
A cell holder
Six connecting wires
Procedure
a) Set up the apparatus as shown below.

b) Starting with $L=0.2 \mathrm{~m}$, close the switch. Record the value of I, the current through the wire and V, the p.d across it. Enter your results in the table drawn below

| $\mathrm{L}(\mathrm{M})$ | 0.2 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{I}(\mathrm{A})$ |  |  |  |  |  |  |
| $\operatorname{p.d}(\mathrm{V})$ |  |  |  |  |  |  |
| $\mathrm{R}=\frac{V}{I}(\Omega)$ |  |  |  |  |  |  |
| $\frac{1}{I} A^{-1}$ |  |  |  |  |  |  |

c) Repeat part (b) above for the value of L , shown in the table.

Record the corresponding values of I and V. Calculate the values of R and $\frac{1}{I}$ and enter the values in the table.

e) Determine the slope, S, of your graph.
f) If the graph obeys the equation:

$$
R=\frac{E}{I}-r
$$

Determine :
i) The value of E,
$e_{\text {ii) }}^{\sigma} \quad$ The value of $r$.
(2 marks)
g) Draw a simple circuit you can use to determine the E.M.F of a single cell.
(1 mark)



