**DARAJANI SECONDARY SCHOOL,**

**P.O. BOX 20-90129, NGWATA.**

**MID\_TERM 2, 2015\_ EXAMINATION**

**FORM 3**

**PHYSICS PRACTICAL**

**232/3**

**TIME: 2 ½ HRS**

**NAME………………………………………………………………………………………ADM. NO……………….. CLASS:…………….**

1. You are provided with the following
* A metre rule
* 10cm long thread
* One 10g mass, two 20g mass, one 50g mass.
* A knife edge
* Vernier calipers (to be shared)
1. Balance the metre rule on the knife edge and adjust it until it balances horizontally. Record the position of the C.O.G.

G = ………………………………………………………………….cm. ( ½ mark)

1. Arrange the apparatus as shown in the figure

Fig 1.

G

**W**

d11

d21

m1

1. Hung the mass m of 20g at 1cm mark, adjust the knife edge until the rule balances again at a new mark.
2. Record the length d1 and the corresponding length d2.
3. Repeat the procedure for different masses and complete the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| m(g) | d1 cm | d2(cm) | d1/d2 | md2 |
| 20 |  |  |  |  |
| 40 |  |  |  |  |
| 50 |  |  |  |  |
| 60 |  |  |  |  |
| 80 |  |  |  |  |
| 100 |  |  |  |  |

 (7marks)

1. Plot a graph of md2 against d1. (5 marks)
2. Find the slope S of the graph. (2 marks)
3. What quantity does S represent? ( ½ mark)
4. Use the graph to find weight W of rule g = 10N/kg. (1 mark)
5. Use the vernier calipers to measure the thickness ***t*** and width ***b*** of the metre rule.

t = …………………………………………………………… cm ( ½ mark)

b = …………………………………………………………… cm ( ½ mark)

1. Determine the quantity P given that (2 marks)

P = $\frac{S}{100cm x t x b }$

1. What does P represent? (1 mark)
2. You are provided with the following apparatus.
* An ammeter.
* A voltmeter .
* Two dry cells.
* A cell holder.
* Potentiometer / variable resistor.
* Connecting wires.
1. Connect the apparatus as shown below
2. 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.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| p.d (V) |  |  |  |  |  |  |
| I (A) |  |  |  |  |  |  |
| $$\frac{V}{I}$$ |  |  |  |  |  |  |
| $$\frac{1}{I}$$ |  |  |  |  |  |  |

 (12 marks)

1. By adjusting the potentiometer, obtain five more readings at an interval of 0.05V and complete the table.
2. Plot a graph of $\frac{V}{I}$ against$\frac{1}{I}$. (5 marks)
3. 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. (3 marks)