535/3

Physics

Practical

Paper 3

**MAY-JUNE-2023**

2 ¼ hours



**ACEITEKA JOINT MOCK EXAMINATIONS 2023**

**UGANDA CERTIFICATE OF EDUCATION**

**535/3 PHYSICS PRACTICALS**

**PAPER 3**

**TIME: 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 mainly for clear record of the observations actually made, for their suitability and accuracy and for the use made of them.

Candidates are reminded to record their observations as soon as they are made. Wherever possible, candidates should put their observations in a suitable table drawn in advance.

An account of the method of carrying out the experiment is not required.

Square papers are provided.

Mathematical tables and non programmable calculators may be used

1. **In this experiment, you will determine the mass M1, of the metre rule provided**.

Thread

0cm 100cm

**meter rule**

Fig 1.

1. Suspend the meter rule provided on the retort stand using a piece of thread provided
2. Adjust the loop until the meter rule balances horizontally as shown in figure 1 above
3. Read and record the position of the loop C, in meters, from the 0.0cm mark.
4. Suspend a mass, m = 0.100kg at a distance, d = 0.600m from the 0.0cm mark.
5. Balance the meter rule by adjusting the position of the loop of the thread.
6. Read and record the new position, P in meters from the 0.0cm mark of the loop of the thread
7. Find the value of and y = d – p
8. Repeat procedures (d) to (g) for values of d = 0.650, 0.700, 0.750, 0.800 and 0.850m.
9. Enter your results in a suitable table
10. Plot a graph of against y.
11. Find the slope, S of the graph
12. Calculate the mass M1 of the meter rule, from the expression;
13. **In this experiment, you will determine the focal length of the lens provided**
14. Mount the lens provided in the holder
15. Focus a distant object on the screen
16. Measure and record the distance F between the lens and the screen.
17. Arrange the illuminated wire gauze, the lens in a holder and the screen such that they are in a straight line as shown in figure 2 below.

Screen

Lens

Lamp

K

F + x V

Fig 2

1. Adjust the position of the wire guaze so that it is a distance (F + ) where
2. Adjust the position of screen until a sharp image of the wire guaze is obtained on the screen.
3. Measure and record the distance, V of the screen from the lens.
4. Find the value of d = V – F
5. Repeat procedures (e) to (h) for values of
6. Record your results in a suitable table including values of
7. Plot a graph of (a long the vertical axis) against (along the horizontal axis)
8. Find the slope, S of the graph
9. Find the focal length f, of the lens from the expression;
10. **In this experiment you will determine the resistivity , of the material of the given wire**
11. Connect the apparatus below

A

R K

A 80.0cm C 100cm

0cm J

B

1. With R = 1Ω place the jockey J at a point C on the wire AB such that AC = 80.0cm.
2. Read and record the voltmeter reading V ammeter reading I.
3. Repeat the procedures (b) to (c) with R = 2Ω, 3Ω, 4Ω and 5Ω, always keep the jockey at C such that AC = 80.0cm
4. Tabulate your results
5. Plot a graph of V against I
6. Find the slope ro of the graph
7. Using a micrometer screw gauge measure and record the diameter d of the given wire in centimeters.
8. Calculate the resistivity of the material of the wire using the formula

DISMANTLE THE SET UP.

*END*