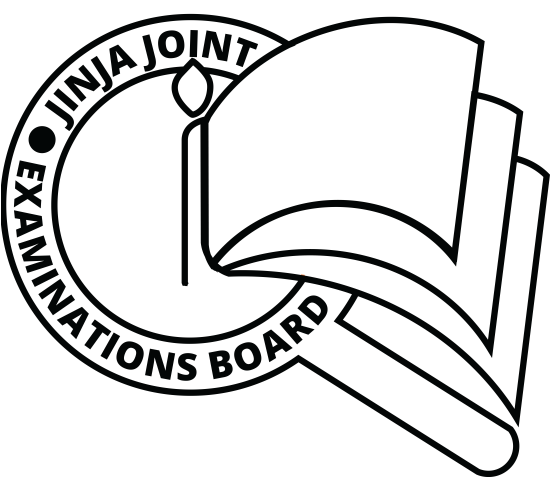
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**PRACTICAL  
PHYSICS  
(Paper 3)**

**August 2019**

2¼ hours

**JINJA JOINT EXAMINATIONS BOARD**

**Uganda Certificate of Education**

**MOCK EXAMINATIONS**

**August 2019**

(PRACTICAL PHYSICS)

**Paper 3**

2 hours 15 minutes

**INSTRUCTIONS TO CANDIDATES:**

*Answer* ***question 1*** *and* ***one*** *other question.*

*Any additional question(s) answered will* ***not*** *be marked.*

*You will* ***not*** *be allowed to start working with the apparatus for the* ***first quarter*** *of an*

*hour.*

*Marks are given mainly for a clear record of observations actually made, for their*

*suitability and accuracy, and for the use made of them.*

*Candidates are required to record their observations as soon as they are made. Wherever possible, candidates should put their observations and calculations in a suitable table*

*drawn in advance.*

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

*Squared papers are provided.*

*Mathematical tables and silent non-programmable calculators may be used.*

*For each question, candidates will be required to select suitable apparatus from the equipment provided.*

1. In this experiment you will determine the relative density of the mass M provided.

*(30 marks)*

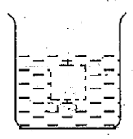
Pieces of wood



Spring

Pointer

Metre rule



**M**

Beaker

Retort stand

Water

Wooden block

Fig**. 1**

1. Clamp the spring with pointer and metre rule provided.
2. Read and record the position PO of the pointer.
3. Suspend a mass from the end of the spring. Read and record the

position, P1of the pointer when the mass is in air. Determine the extension e1

1. Measure about 200cm3 of water and pour it into the beaker provided.
2. Immerse the mass M in water without it touching the beaker. Read and record

new position, P2  of the pointer. Determine the extension e2

1. Repeat procedures (c) and (e) for values of and 600g
2. Record your results in a suitable table including values of e1-e2
3. Plot a graph of e1 against e1-e2
4. Determine the slope,S of the graph

**DISMANTLE THE SET UP**

2. In this experiment you will determine the focal length f of a concave mirror provided. *(30 marks)*  

1. Align the concave mirror and the illuminated wire gauze such that their centres are at the same height above the bench as shown in the figure 2.
2. Place the mirror at a distance ,U equal to 80.0cm from the illuminated wire gauze
3. Place the screen between the wire gauze and the mirror such that a sharp image of the wire gauze is formed on the screen.
4. Measure the distance, V, of the screen from the mirror*.*
5. Repeat procedures (b) to (d) for values of *.*
6. Record your results in a suitable table including values of
7. Plot a graph of V against
8. Find the slope, S, of the graph.
9. Find the value, t, of V when =0
10. Calculate the focal length ,f, of the mirror from the expression f =

**HAND IN YOUR TRACINGS TOGETHER WITH YOUR ANSWER SHEETS**

3. In this experiment, you will determine the resistance per metre, s, of the wire provided, and the internal resistance r of the cell. *(30 marks)*

1. Connect the apparatus as shown in the figure 3 above.

Cellotape

*K*

*A*

*V*

Bare wire

*l*

Fig**. 3**

1. Starting with length ,close the switch K
2. Read and record the voltmeter reading V and ammeter reading ,I
3. Open Switch K
4. Repeat the procedures (e) to (g) for values of and
5. Record your results in a suitable table including values of
6. Plot a graph of against.
7. Find the slope, s, of the graph.
8. Calculate the internal resistance, , of the cell from the expression

**DISMANTLE THE SET UP OF THE APPARATUS**