

535/2
PHYSICS
Paper 2
July /August 2024
2 hours



KAYUNGA SECONDARY SCHOOLS EXAMINATIONS COMMITTEE (KASSEC)
JOINT MOCK EXAMINATION 2024
Uganda Certificate of Education

PHYSICS

PAPER 2

PRACTICAL

2 Hours

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **two** examination items.
- Answer **one** item in all.
- Any additional items answered will not be scored.
- Candidates are not allowed to start working with the apparatus for the **first Quarter** of an hour. This time is to enable candidates, read the items thoroughly, checking for the apparatus they will need and plan appropriately.
- A graph paper will be provided.
- Mathematical table and silent non-programmable calculators may be used.

Turn Over

Item: 1

In one of the trading centers, a modest hardware store is owned by a group of young stars. Nails are one of the things they trade in; they sell them in kilograms and typically use a beam balance to determine the mass of the nails. Sadly, one evening, burglars came into their hardware and took several tools, including the only beam balance (weighing scale) within the trading center. When their regular customers showed up at the hardware store the next morning, they wanted to purchase 200 pieces of 6-inch nails, but they were unable to sell the nails since they couldn't figure out how many kilograms they were. Their friend has come to you with a sample of these nails in order to solve the problem.

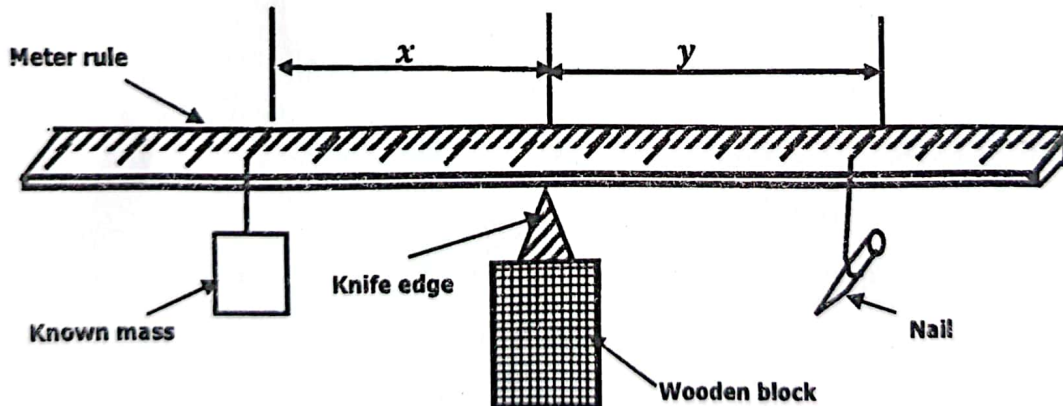
Task:

Carry out a scientific investigation to aid the young stars in selling the nails to their client.

Hint:

$$M_n = \frac{m}{s}$$

Where m - mass of known, M_n - mass of the nail and s - slope



Other experimental setups may be used.

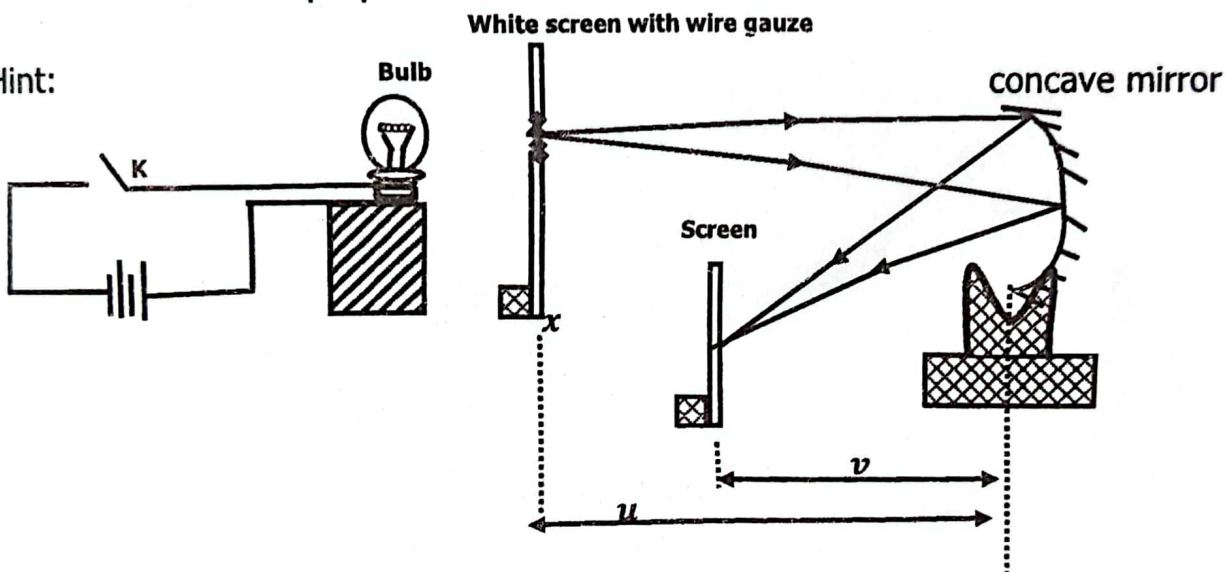
Item 2

In towns of Uganda, most families use charcoal for cooking food. This influences cutting of trees for charcoal production, which has a devastating effect on the globe. Experts advice the citizens to use alternative means, among other includes solar concentrators made of concave mirror of focal length 10.0 cm. As such some youths went to a shop looking for a concave mirror of such specification to make a solar concentrator but found only one concave mirror without any label. They decided to seek for help.

Task:

As a physics student, carry out a scientific investigation to determine whether the available mirror can serve the purpose.

Hint:



Other experimental setups may be used

$\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$ and $f = \frac{C_1 + C_2}{2}$ Where C_1 and C_2 are intercepts on the $\frac{1}{u}$ and $\frac{1}{v}$ respectively.

END