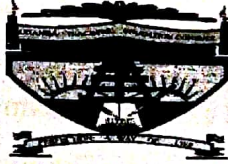


535/3
PHYSICS
Paper 3
Jul/Aug.2024
2 hours



UGANDA TEACHERS' EDUCATION CONSULT (UTEC)

Uganda Certificate of Education

Physics Paper 3

535/3

(Practical)

Time: 2 hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of two examination items

Answer one item in all

Any addition items 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 and as well check the apparatus you they need and plan appropriately.*

A graph paper will be provided

Mathematics tables

Item 1

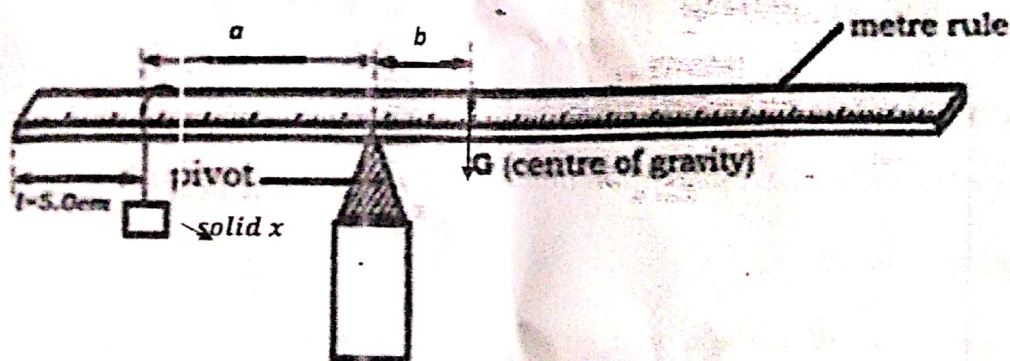
A miner has a small stone proved to be a precious metal valued at Ugx.4,100 per gramme apparently. The miner is however challenged on how to know the total cost value of the stone as the miner does not know the mass of this stone and does not have any machine for measuring mass.

You are provided with a solid x which has exactly the same mass as the mass of the stone the dealer has and a uniform metre rule of known mass.

Task:

As a student of physics, use a scientific investigation to help the miner know the total cost of the stone.

Hint: set up of apparatus



- Any other experimental set up may be used.
- From the principle of moments it follows that: for a body to be in equilibrium the sum of clock wise moments is equal to the sum of anti-clock wise moments.

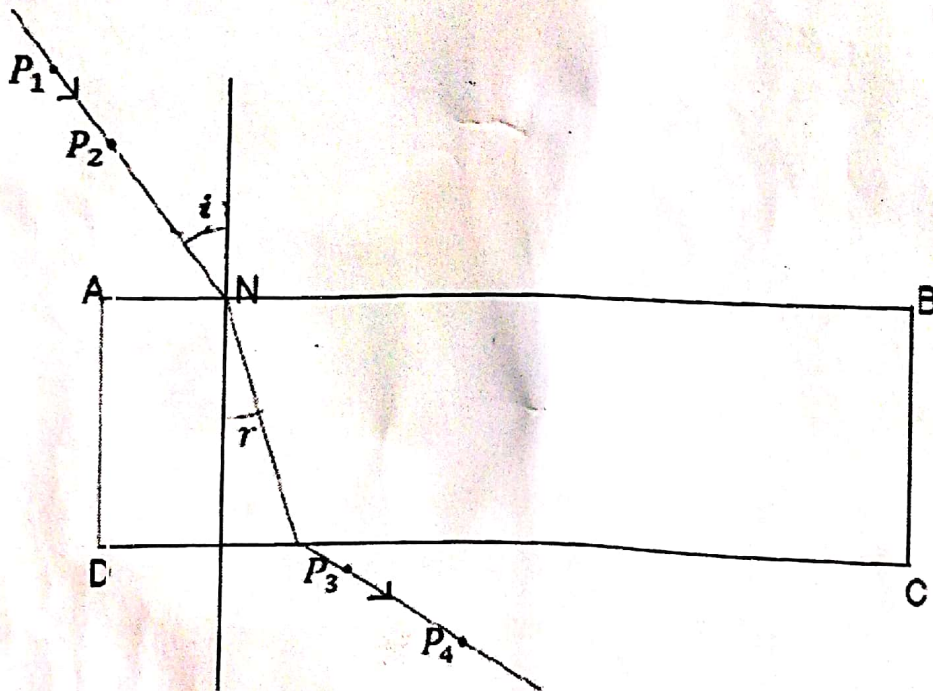
Item 2

While using a microscope in a scientific investigation, learners broke the glass slide of the microscope. On checking, the user's manual, it was found that the glass material to be used to cut slides should have a critical angle within the range of $38^\circ - 47^\circ$. The learners have a glass block they plan to cut the slide from; however, they are challenged on whether the glass block suits the required specifications.

You are provided with a glass block from which the learners plan to cut the glass slides.

Task: As a student of physics, carry out a scientific investigation to advise the learners whether the glass material can be used to make the slide.

Hint:



- The diagram above may be used or any other set up
- From snell's law $\sin i = n \sin r$,
- also $n = \frac{1}{\sin c}$, where c is the critical angle

END