

END OF YEAR EXAMINATIONS 2024

Uganda Certificate of Education

S.1 PHYSICS

Paper 1

2 Hours

INSTRUCTIONS:

- You are required to attempt **all** items in this paper.
- Write your answers on the answer sheet(s) provided, beginning the solution of each item on a fresh page.
- Where calculations are involved, show all the necessary working.
- Attach the question paper on your answer sheet(s).

ITEM 1

You found a group of your fellow classmates having some arguments that ended in a quarrel and you happened to hear some of the arguments from the members that;

- (i) we are able to see the moon because it produces its own light.
- (ii) When you put an object in the path of light, a dark image is formed.
- (iii) Light travels only in a straight line.

Task:

Help your classmates to;

- (a) Know whether the statement in (i) is true or false. If false, tell them why we are able to see the moon.
- (b) Know the nature of the object in (ii), and also tell them the term given to the dark image formed.
- (c) Prove to them that light travels only in a straight line.

ITEM 2

The class monitor of a S.1 class in a certain school always encourages her classmates to sweep the class room very early in the morning claiming that during this time, the dust in the classroom doesn't spread too much as the case is when the classroom is swept during lunch time.

As a learner of Physics,

- (a) comment on the truth of the monitor's claim.
- (b) state the name of the process that is responsible for the movement of the dust particles and state the factors that affect the process.
- (c) assuming you are taken to the Physics laboratory, describe how you would demonstrate the process responsible for the movement of the dust particles.

ITEM 3.

Ten identical golden-coloured cubes are handed to you. The person wants you to buy them for UGX 40,000 each gramme, saying that are gold nuggets. You pull out your old geology text and look up gold in the mineral table, and read that its density is 19.3g/cm^3 . You measure one cube and find that it is 2cm on each side and weighs 0.04kg.

Task.

- (a) Determine density of each cube
- (b) With a reason, are they gold nuggets?
- (c) Determine the cost of the golden-coloured if they are gold nuggets.

ITEM 4.

Due to frequent fire outbreaks, a workshop was organized and your friend reached late when the first speaker was concluding his speech. On asking the neighbors, they told him that the speaker advised them to buy a device that they can put in their houses or workplaces to always alert them in case of any fire outbreak.

On his way back home, he met an accident which had just occurred. He made a stopover to see what exactly had happened. While on the scene, he heard that the Police was using an uncalibrated thermometer to measure the temperature of the car tyres as part of the evidence and he was eager to know the temperature of the car tyres.

He also accessed a piece of document which the Police officer had and had the following information:

- Length of the mercury thread when in contact with the tyre: 40cm
- Length of the mercury thread at the ice point: 10cm
- Length of the mercury thread at the steam point: 80cm.

Task:

Help your friend to;

- (a) know the name of the device and briefly describe to him how it works so that he is convinced to buy it.(Diagram of the device needed)
- (b) know the temperature of the car tyres obtained by the Police.

END

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