KATWE NOOR SECONDARY SCHOOL

535/1 Physics
2hrs 30mins

Instruction to candidates.
This paper consists of two sections A and B it has six examination items.
Section A has two compulsory items
Section B has two parts (I) and (II) answer one item from each part.
Answer four items in all
Any additional item (s) answered will not be scored.
All answer must be written in the answer sheets provided.
Untidy and unnumbered work won't be scored.

SECTION A (answer all items in this section)

ITEM 1

During a science project, learners are given two devices; a pinhole camera of length 50cm and a concave mirror of focal length 50cm.

Task:

As a learner of physics, help t6he students to determine which instrument forms a bigger image of a man of height 1.8m standing 2m away from each of the instruments.

Write a report about the nature of images formed by each of the devices and what would happen if the size of the pinhole was enlarged.

ITEM 2

In 2023 st thersa primary school in kisubi-entebbe caught fire when it was raining just a few minutes after light was seen from the sky. The local started talking saying this was witchcraft.

Task:

Having studied physics:

a) Help the local top understand what caused the fire.
b) Advise the school management on how they can prevent this kind of instance from, happening again
c) How does this work to prevent this instance from happening?

SECTION B

Part 1 answer 1 Item

ITEM 3.

Figure 1 below shows a uniform metallic rod of length 40m pivoted at its centre and used at children's play resort.

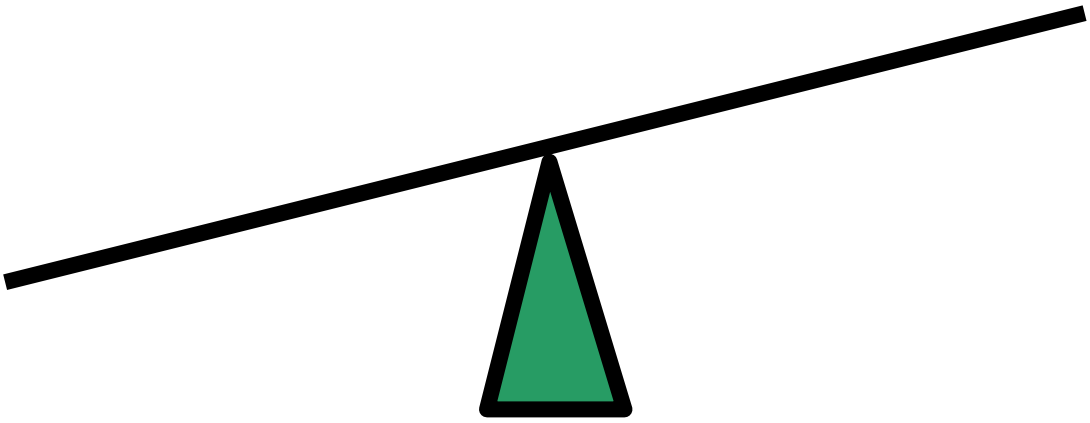

Figure 1

Given that a boy of mass 48kg sits 1.5m from end A. Help the guide at the play resort to determine if another boy of mass 40kg will resort balance in the beam if he sits at a distance of 0.6m from the centre.

a) Identify two other instances in which the knowledge in this scenario would be applicable in rea life.
b) What principle does this instance base on and state it.

{12 scores}

ITEM 4

In a certain town, it is a must for drivers to be tested together with their vehicles for road – worthiness. On a certain day, a car started from rest and accelerated to 50 ms^{-1} in 10s. The driver maintained that velocity for 20s and suddenly decelerated to rest in 25s making him to crush into wind screen .Task: As a learner of physics, draw a graph to show the relationship between the velocity and time for the car, state whether the driver's an average velocity does not exceed the town's speed limit of 8ms^{-1}. Find the rate at which the car's velocity reduces and explain why the driver crashed into the wind screen and how this can be prevented.

PART 2

Answer one item from this part.

ITEM 5

The construction of four storeyed building at a certain school collapsed and scores of people died. The LC1 accused the head teacher of sacrificing the deceased to appease his spiritual ancestors in order to get riches. This created a lot of unrest and the residents went to gang up to destroy the school.

TASK:

a) As a student who has studied material science, write a short report to resolve the unrest.

b) Advise the engineer on which materials to use and how they can be made stronger

ITEM 6.

In a certain country, a Television (TV) reporter was reporting live near the ocean about the high tides during night time. Viewers in another country were watching the live broadcast of the news bulleting during day time. The viewers wondered how it could be day and night at the same time and how the event in one country could be watched live on TV in another country.

Task: Using your knowledge of physics to help the viewers to understand;

a) The possibility of it being day in one place and night in another place.
b) The occurrence of High Ocean tides.
c) How an event in one place can be broadcast live in another country.

END