



RWENZORI REGION SEEMAT

S.3 PHYSICS

END OF YEAR ASSESSMENT 2023

NAME.....STREAM.....

Time..... 2 Hrs.

INSTRUCTIONS;

- This paper consists of 2 sections A and B. Sections A is to be answered in the spaces provided, while the learner is expected to answer section B using separate answer sheets
- Section A is compulsory. Attempt only **four 4** sections in section B
- Some constants may be used where necessary e.g acceleration due to gravity $g = 10\text{ms}^{-2}$, and density of water = 1000kgm^{-3}

SECTION A (attempt all questions in the spaces provided. Each takes 5 marks)

1. It is common practice for learners to fear visiting laboratories for practical learning.

As a physics student,

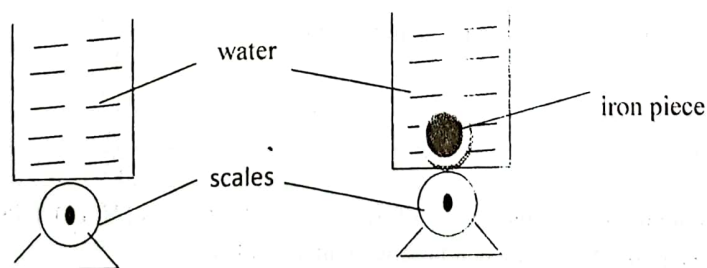
- (a) Identify any **two(2)** of such fears among learners **(2 marks)**

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- (b) Suggest any **three (3)** ways of managing such fears **(3 marks)**

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2. Kiplimo a form 3 student weighed two identical beakers A and B. A had only water, while B had a piece of iron at the bottom but the water level was the same in both beakers



Suggest with reason which beaker gives a bigger reading on the scale(5 marks)

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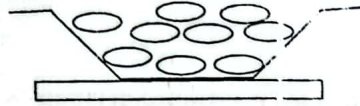
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3. Amooti served food on a plate immediately from the stove and realized it was too hot . shortly afterwards she realized it had cooled slightly as she picked the call from her mum



- a) Suggest any **three (3)** processes responsible for the cooling of the food(3 marks)

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- b) How can any two of the processes above be minimized?(2marks)

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4. Peter observes a sh. 500 coin at the bottom of water in a container as if it is near the surface. However he realizes it is further down when he tries to get it out and the hand fails to reach it.

- (a) Account for his failure to reach the coin (3 marks)

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- (b) What advise can you give peter to be able to retrieve the coin? (2 marks)

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5. In Tusome S. S, the S.3 block is 80m north of the Physics laboratory and 60m west of the staff room. How far from the Laboratorydoes Beckie move by moving;

- (a) From the Physics laboratory to the S3 block and then to the staff room? (2marks)

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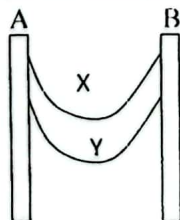
- (b) Directly from the laboratory to the staff room? (3 marks)

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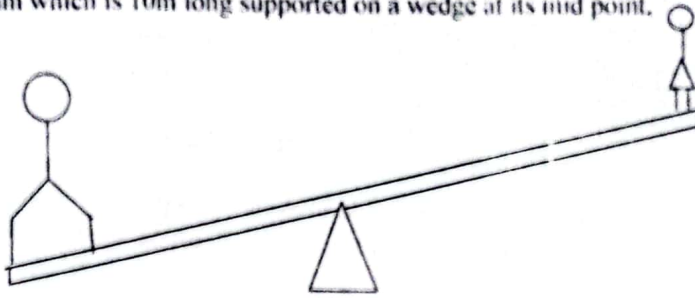
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6. You met a man complaining about the design of transmission lines X and Y that they should have been straight between poles A and B when he saw them as follows

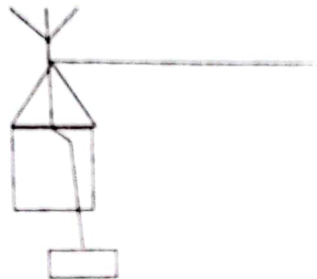


7. You meet Joy and her uncle having fun at a recreation place. As they enjoy on a sea saw made of a uniform beam which is 10m long supported on a wedge at its mid point.



Joy weighs 45kg at the extreme right. The uncle is 30kg heavier than Joy and is at the extreme left. How far should the uncle be from the support for the beam to balance horizontally?(5 marks)

8. You met your friend attempting to steal a sharp pointed metal rod mounted at the top of their house so as to sell it as scrap..



Advise your friend on the relevance of such a device on the house (5 marks)

SECTION B (Attempt only four (4) numbers in this section)

Qn. 9

- a) You are seated in a car and you observe the speedometer and clock as the driver gradually increases speed as follows;

Clock	Speedometer
9:25a.m	36km/hr
9:30a.m	144km/hr

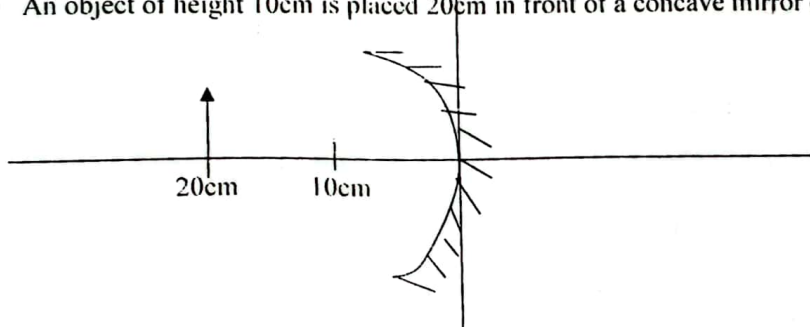
Obtain the acceleration and distance travelled during this time interval(7 marks)

- b) Two labourers A and B are hired to carry 500 bricks each from a heap 100m from the building under construction. A opts to use a wheel barrow that carries 30 bricks at once while B decides to carry them physically, 8 bricks at a time.

- Identify any two problems each labourer is likely to face(4 marks)
- Establish the extra distance B travels compared to A at the end of their job (4 marks)

Qn. 10

- a) You are viewing yourself in a plane mirror before going to school. As a physics student;
- Identify any **two similarities** and **two differences** between the image formed and your actual face(4 marks)
 - In which **two ways** would the image formed differ from the one formed in a(i) above if the mirror was replaced with a convex mirror?(2 marks)
- b) An object of height 10cm is placed 20cm in front of a concave mirror of focal length 10cm



By scale drawing on a graph paper, determine the size and magnification of the image. State also the nature of the image formed(9 marks)

Qn. 11

- a) A musician of mass 60kg putting on high heels is found to make contact area with the ground of 0.002m^2 per heel. Determine the total pressure she would exert when;
- Standing on both feet (3 marks)
 - Walking(2 marks)
- b) What one danger can you identify concerning the choice of shoes by the musician in a) above towards;
- Herself(2 marks)
 - The walking surface (floor)(2 marks)

- c) You are provided with a 1.5l mineral water bottle, cello tape, water, sharp pin and basin. How can you demonstrate and conclude the effect of depth on pressure in liquids(6 marks)

Qn. 12

- a) Sound is quite a useful form of energy in daily life
 (i) Identify any three properties of sound (3 marks)
 (ii) Why would a dog detect a tiptoeing thief at night which man cannot do?(3 marks)
- b) How can you use an electric bell inside a jar having one outlet leading to a source of electricity connected to the bell and the other outlet leading to a vacuum pump) to demonstrate the effect of air on movement of sound(5 marks)
- c) A girl stands 640m from a wall and makes loud sound. After 4 seconds, she hears her sound repeated by the wall
 (i) Account for the sound from the wall (1 mark)
 (ii) Establish how fast the sound was moving based on the measurements given(3 marks)

Qn. 13

- a) Having attended a lesson on magnetism, you found students singing a song "your love is magnetic". When you ask them how love can be magnetic, they get angry saying its just a song.
 (i) Assist your friends to appreciate the true meaning of a magnet and magnetic material(2mks)
 (ii) Identify any three (3) ways you would use to cause a magnet to lose its magnetism (3 marks)
- b) An iron nail is inserted in a coil and connected to a battery. The switch is put on and then off? What would happen :
 (i) To the nail?(3marks)
 (ii) If steel was used instead of iron(3 marks)
- c) Why does a strong bar magnet suspended using a thread swing and eventually rest in the north-south direction(4 marks)

Qn. 14

- a) During covid-19 lock down, temperature guns were introduced to tell people's temperature even when there were thermometers in medical facilities. Some politicians complained that it was a waste of tax payer's money
 (i) Assist such politicians to appreciate that such a government strategy was necessary in handling the pandemic(3 marks)
 (ii) What two (2) limitations can you point out in relation to using temperature guns to tell temperature of a person(2 marks)
- b) Having taken your sister to a nearby clinic suspecting that she has Malaria, you see the nurse touching her cheek to tell her temperature. You realize the readings on their clinical thermometer are faded due to overuse
 (i) What two common liquids are used in the thermometer they have?(2 marks)
 (ii) Identify any two reasons for the choice of each liquid stated in b(i) above(4 marks)
 (iii) What steps would you advise the makers of the thermometer to follow to put the readings back on the thermometer(4 marks)

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