# IBUN BAZ GIRLS SECONDARY SCHOOL.

## END OF TERM ONE EXAMINATIONS

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STREAM ……………………………………………………………………………………………….

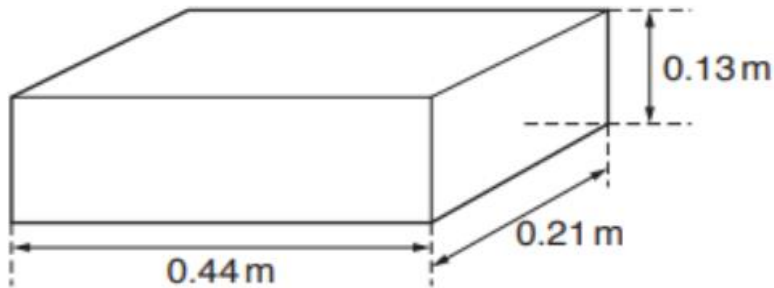| S.3 | | TIME : 2Hrs |
| PHYSICS | | TERM ONE |
| END OF TERM 1 | | 2023 |

**READ THESE INSTRUCTIONS FIRST.**

You must answer on the question paper

- Write in dark blue or black pen.

- You may use an HB pencil for any diagrams or graphs.

- Do not use , paper clips, glue or correction fluid.

- Answer all questions.

- Write your answers in the spaces provided on the Question Paper.

- Electronic calculators may be used.

- You may lose marks if you do not show your working or if you do not use appropriate units.

- At the end of the examination, fasten all your work securely together.

- The number of marks is given in brackets () at the end of each question or part question

TURN OVER

1. A solid, rectangular concrete block is lying horizontally on flat ground with one of its largest sides in contact with the ground. Fig. shows the dimensions of the block.



0.13m

0.21 m

0.44 m

(a)If the block has a mass of 5kg (i) Calculate the volume of the block (02marks)

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(ii) Calculate the Pressure exerted on the ground by the concrete block (03marks)

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(b)Give three differences between mass and weight (03marks)

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b) state **pascal's principle** .

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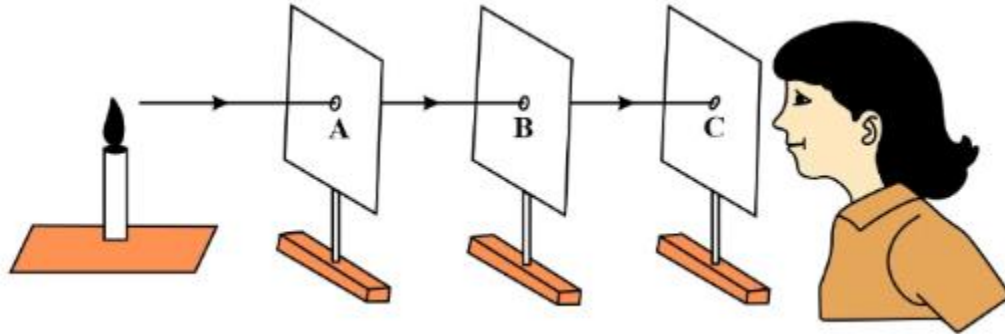
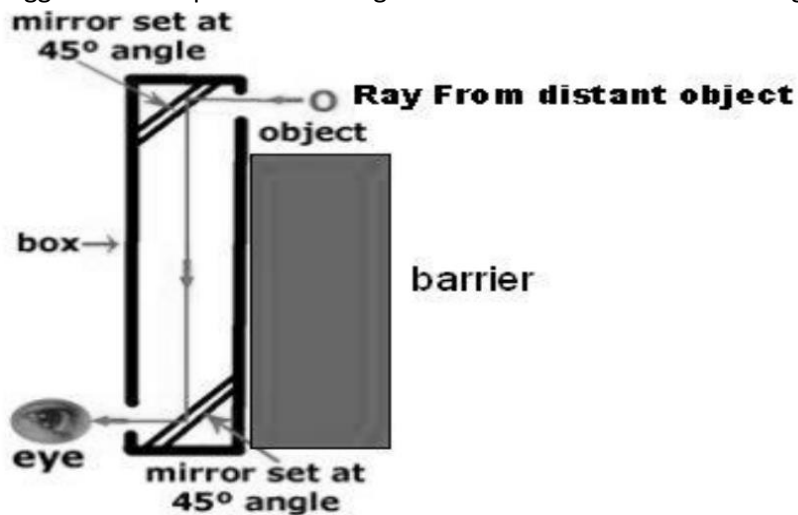3. Two cardboards A , B and C with holes were arranged in in a straight line as shown below.



(i)     State property of light this experiment demonstrates.(01mark)

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(ii)     State one application of the property above in everyday life (01mark)

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b) The security officer in **katanaba secondary school** raised a complaint that there are many girls who jump over the perimeter wall fence from their dormentry . But one of the student suggested to help him and designed the device as shown in the figure below



a) complete / make correction on the device if there happen to be a mistake . ( 1 mark)

b) As a student of physics , describe how the security office can use it to calm down the situation using the above device.
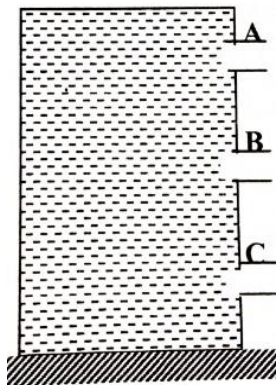
( 04 marks )

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4. a)  The metal can with holes A , B, C  is filled with water as shown in the figure



(i)      show on the diagram the initial  paths taken by water out of the holes  (1marks)

(ii)     explain  what happens after some time ( 2 *marks*  )

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(b) (i) State two factors on which pressure in liquids depend.

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(ii) Explain why an elephant is able to walk on a soft river bank where as a cow sinks on the same bank.

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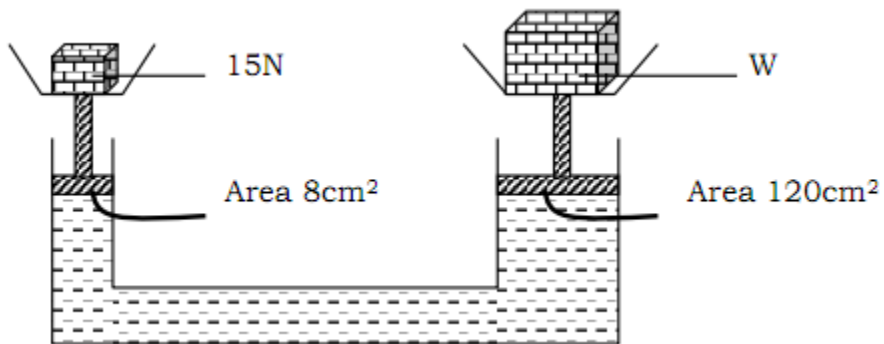
c)



c) The diagram, figure above, an effort of 15N is used to lift a load W.

Calculate:

(i) The pressure transmitted through the liquid.

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(ii) The weight (load) W.

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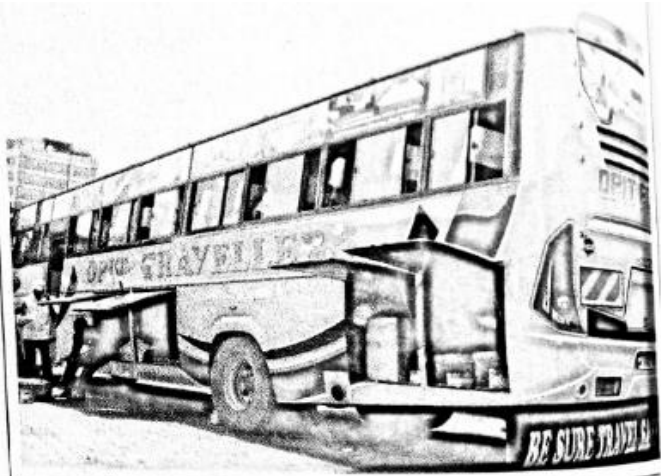
5. it is a very common practice for people in Uganda to overload trucks with charcoal as shown in the figure (a) below



(a) Truck overloaded with charcoal    (b) Loading luggage in a bus cabin

Explain

i) why this is risky in relation to stability in figure ( a)

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ii) why the current design of buses allows for the loading luggage in bus cabins as shown in the figure ( b) above , than carrying it on top of roof racks.

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6. There is a parent project in your school to construct two rectangular pit latrines . one at the girls ' wing and another at the staff quarter' s wing . However , the Board of Governors and the school administration have failed to agree on the choice of materials to use in construction .

**SUPPORT**



**TASK**

(a) using the knowledge and skills learnt in "**mechanical properties of materials**" , suggest a choice of materials you would advice the school board to use in the construction of the latrines

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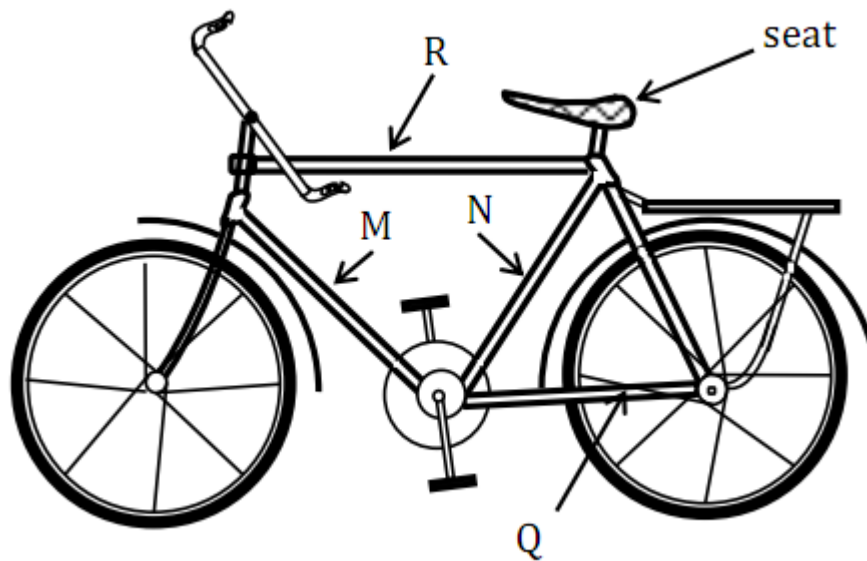
(b) discuss the relevance of each materials' characteristics to their application in the constructions of the latrine .

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C. The figure below shows a diagram of a bicycle.



Which of the parts labeled *M*, *N*, *Q* and *R*, would be
  (i)     in tension,
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  (ii)    in compression when a heavy person sits on the seat?     ( 02 marks)
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d) state **Hooks ' law**
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e) A piece of material with a cross section area of $5.0 \times 10^{-6}$ m$^2$ extends from 20 cm to 25cm when a force of 25 N acts on it . Determine the ;
i) stress

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ii ) strain

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**END**

*I wish you well in your studies*

# Quotes  of the day

➢ The forest you see ;  was ounce a seed

➢ Whatever you   need   to become, the person you need to be   ; it is with you right now.