

TURNING EFFECT OF A FORCE

KCSE QUICK REVISION

*Compilation of Possible Questions in Physics Likely to be examined in
KCSE.*

*A Special Analysis of Prediction Questions that may be Tested in KCSE from this
Topic in Form 2.*

PHYSICS

SERIES 1

For Marking Schemes

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MWALIMU CONSULTANCY

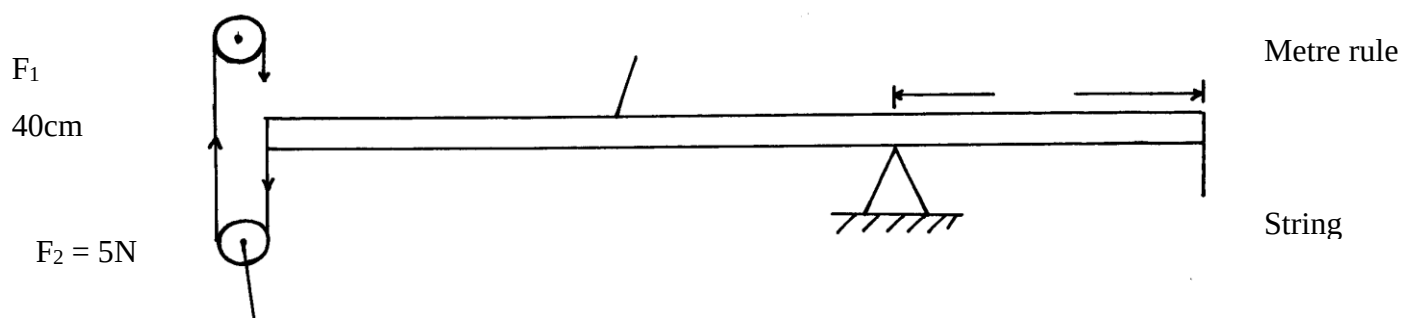
TURNING EFFECT OF A FORCE

1. Figure 4 below shows a uniform metre rule in equilibrium under the forces shown

Determine the weight of the metre rule

2. The diagram below shows a uniform meter rule of mass 300g balanced by two forces F_1 and F_2 .

Force F_2 is 5N. Assuming there is no frictional force on the pulleys,

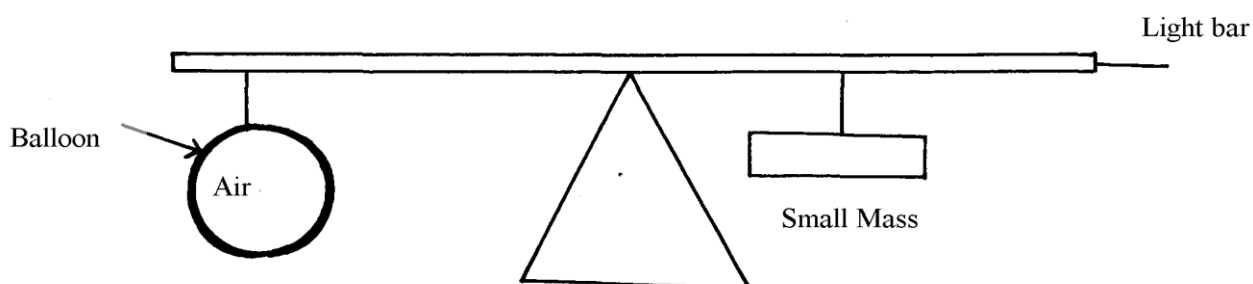


Pulley

Calculate the force F_1

3. (a) The figure below shows a system in equilibrium at room temperature. The system is taken outside where the temperature is 20°C higher for sometime.

Figure 9



Explain why it tips to the right when it is taken outside the room.

- (c) (i) State the law of floatation.

(ii) The fig. below shows a floating object of volume $40,000\text{ cm}^3$ and mass 10g. It is held as

shown in water of density 1.25g/cm^3 by a light cable at the bottom so that $\frac{3}{4}$ of the volume

of the object is below the water surface. (Assume that up thrust due to air is

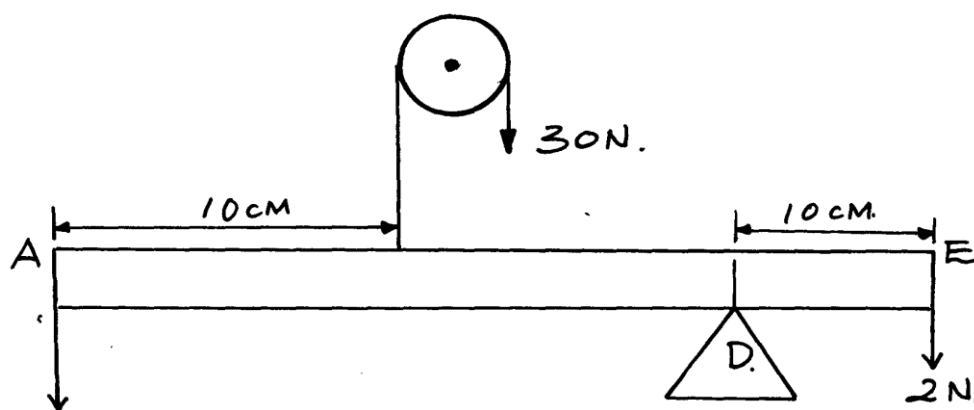
negligible)

Figure 11

- (iii) (I) Calculate the volume of the object under water. *
(II) State the volume of water displaced by the object.
(III) Calculate the weight of water displaced.
- (iv) Determine the tension in the cable
(v) Calculate the density of the object.
4. State the principle of moments.
5. Figure 4 shows a uniform wooden plank which weighs 10N. The plank is balanced at 0.8m from one end by a mass of 2.5kg
What is the length of the wooden plank in metres?
6. **Figure 4** shows a uniform rod **AE** which is 40cm long. It has a mass of 2kg and pivoted at **D**. If 2N is acting at point **E**, and 30N force is passed through a frictionless pulley

fig. 4

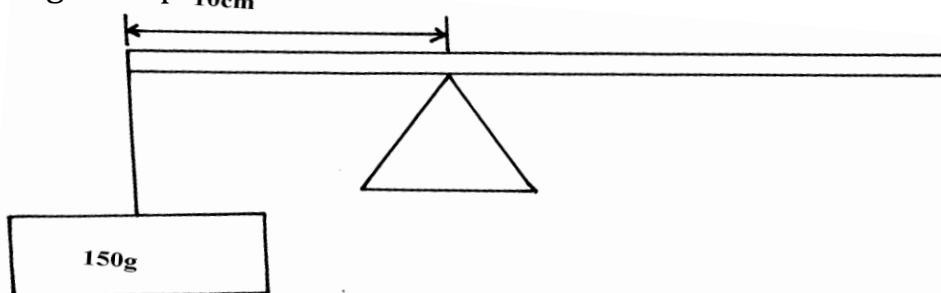
fig 4



X

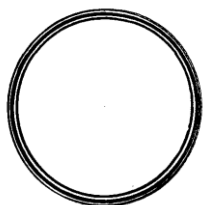
Find the force (x) acting at end A

7. A uniform half metre long beam, pivoted at the 10cm mark, balances when a mass of 150g is suspended at the 0cm mark as shown below:



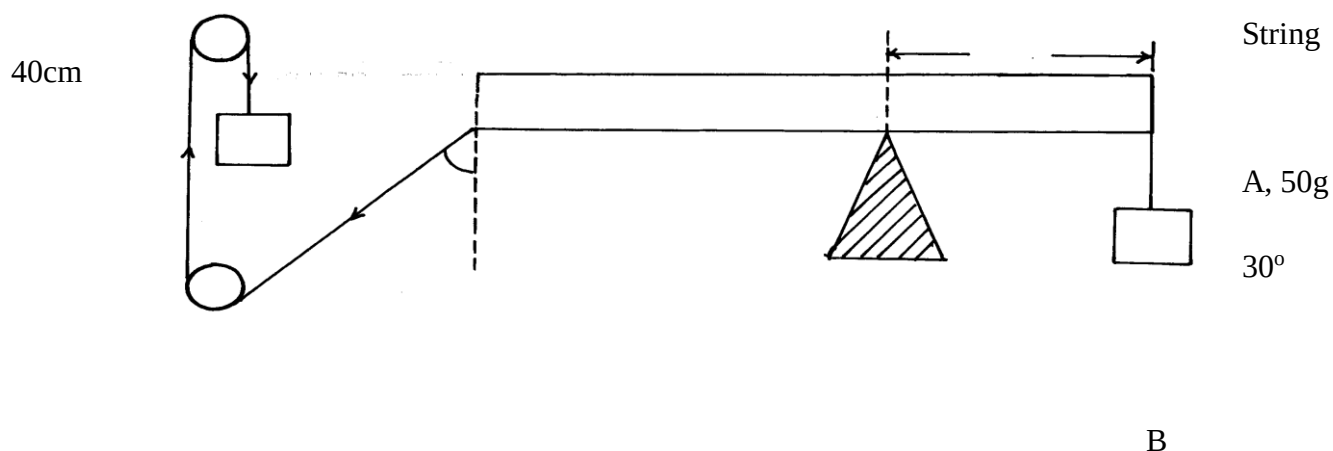
Calculate the weight of the beam

8. The figure below shows a ring of a thin steel washer.



Determine the centre of gravity of the washer.

9. The diagram below shows a uniform metre rule balanced by two forces A and B. If force B is 5N, assuming that there is no frictional force on the fixed pulley, calculate the weight of the metre rule.



For Marking Schemes/Answers

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