

GATUNDU KCSE REVISION MOCK EXAMS 2015

**232/3
PHYSICS
PAPER 3**

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PHYSICS
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GATUNDU JOINT EXAMINATION - 2015
Kenya Certificate of Education
Physics Paper 3

Instructions to candidates

- This paper consists of two Questions 1 and 2.
- Answer all the questions in the spaces provided.
- Electronic calculators, mathematical tables may be used.
- All numerical answers should be expressed in the decimal notations.

QUESTION	MAX MARKS	CANDIDATE'S SCORE
1	20	
2	20	
TOTAL	40	

QUESTION 1

You are provided with the following:

- Wooden plank 100cm long or a metre rule
- two knife edges
- Retort stand, boss and clamp
- Half metre rule
- An optical pin and a piece of cello tape
- Five 100g masses or (two 200g masses and one 100g mass)

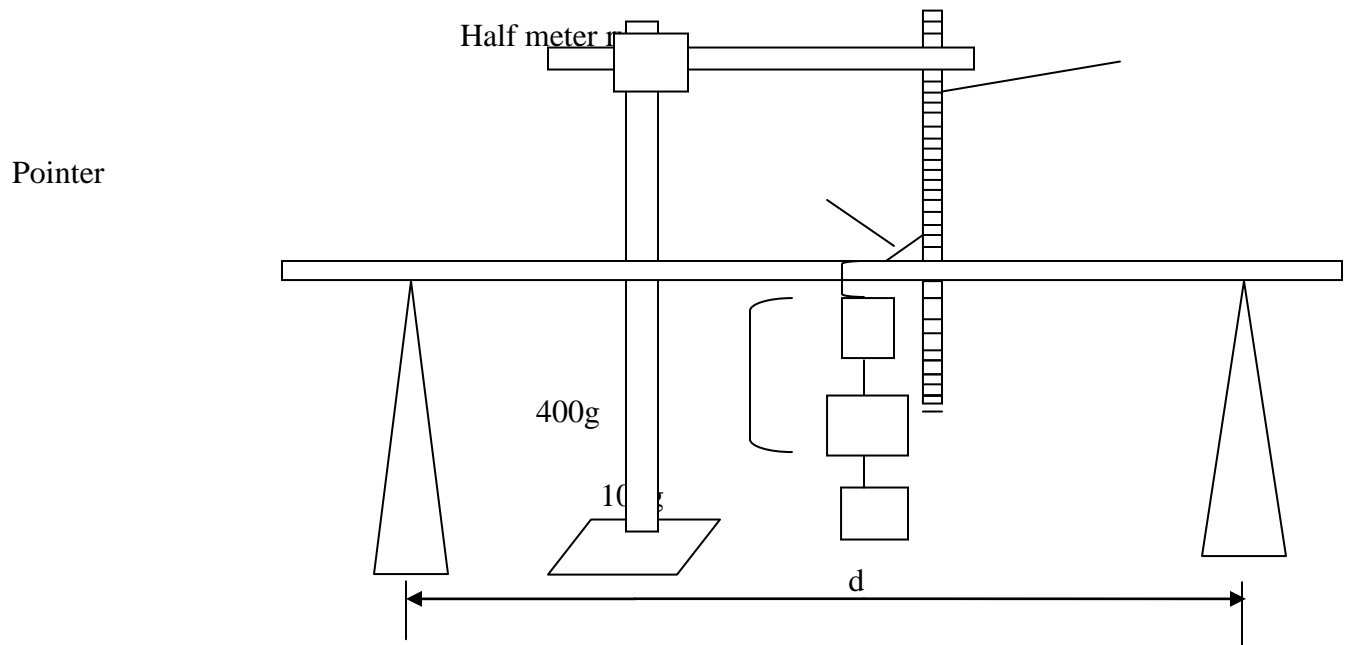
Proceed as follows

- a) Balance the wooden plank (metre rule) on a knife edge and record the point of balance.

-----cm (2marks)

Fix a pointer on the plank at this point

- b) Put the wooden plank so that it lies horizontally on the two knife edges provided.
- c) Clamp the half metre rule vertically and place it near the pointer on the wooden plank as shown in the figure



- d) Adjust the knife edges such that the distance d , between them is equal to 90cm and they are equidistant from the position of the pointer.
 e) Read and record the position of the pointer on the vertical scale

X_0 cm (1mark)

- f) Suspend a mass of 500g at the center of the wooden plank (where the optical pin is fixed as a pointer). Read and record the position of the pointer on the scale.

$X_1 =$cm (1mark)

- g) Hence find the depression, X of the metre rule at its mid-point and fill the table
 h) Remove the mass from the metre rule.

h) Repeat procedures (c) to (g) for values of d equal to 80 70 60 50 and 40cm
 (8 marks)

$d(\text{cm})$	90	80	70	60	50	40
$X_0(\text{cm})$						
$X_1(\text{cm})$						
$X (\text{cm})$						
$\text{Log}_{10} d$						
$\text{Log}_{10} X$						

Question 2

You are provided with the following

-A stop watch

A millimeter

-A capacitor

-Two switches S_1 and S_2

-Six 1000 Ohms Resistors

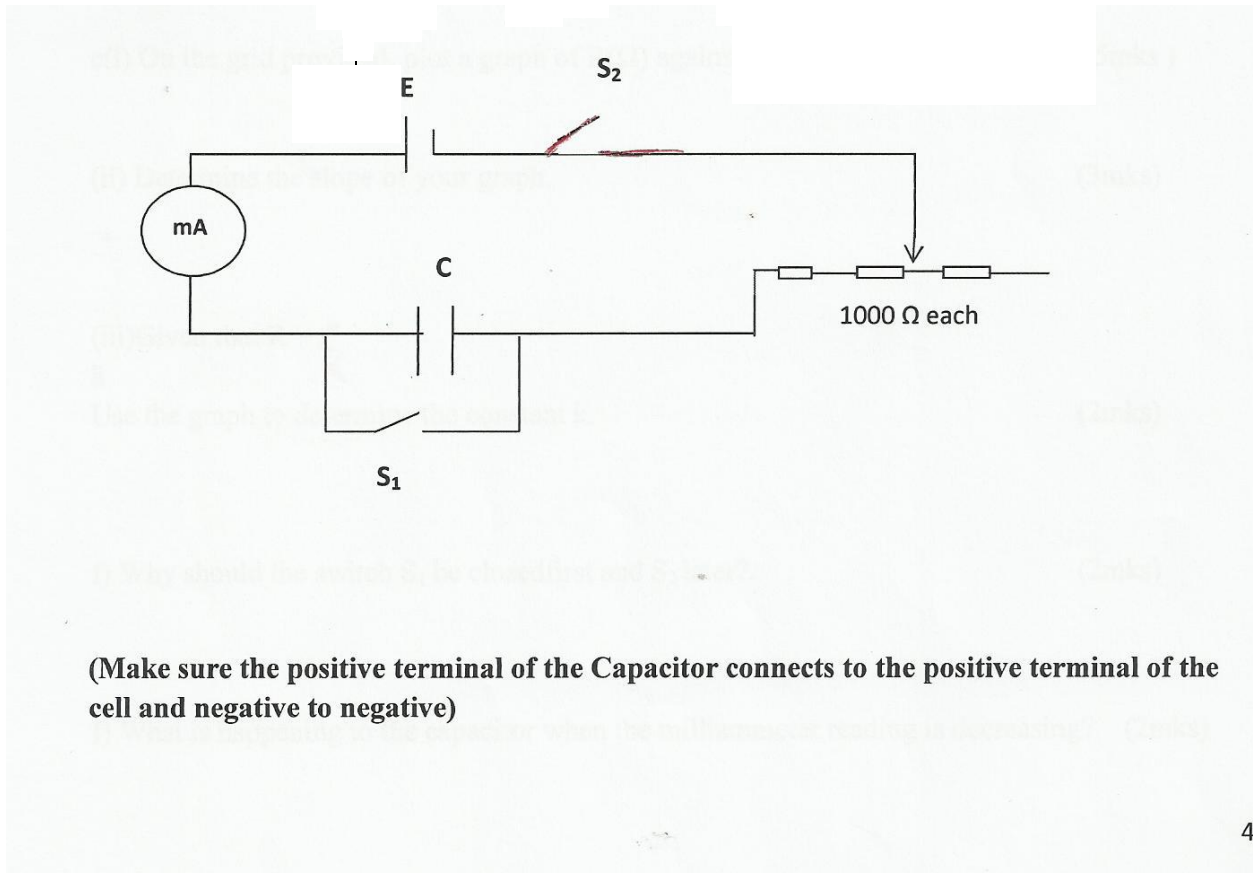
-a dry cell and a cell holder

Seven pieces connecting.

At least six crocodiles clips.

Proceed as follows

- a) Connect the circuit as shown in figure 1.0 below



- b) Close switch S_1 first and then switch S_2 and record the maximum reading of the milliammeter in the Table 1.0 below.
- c) Open switch S_1 and at the same instant, start the stop clock. Record the time taken for the value of current to fall to a half of its original value.
- d) Repeat step (b) and (c) with other values of $R(\Omega)$.

Table 1.0

(6 mks)

Resistance, R (Ω)	2000	3000	4000	5000	6000	7000
Maximum Current I(mA)						
Time t(s)						

e(i) On the grid provided, plot a graph of R(Ω) against t (s) (5mks)

(ii) Determine the slope of your graph. (3mks)

(iii) Given that $R = \frac{t}{k}$

Use the graph to determine the constant k. (2mks)

f) Why should the switch S_1 be closed first and S_2 later?. (2mks)

f) What is happening to the capacitor when the milliammeter reading is decreasing? (2mks)