GUCHA SOUTH EVALUATION TEST (GSET) 2016
Kenya Certificate of Secondary Education (K.C.S.E)
232/3
PHYSICS
PAPER 3
CONFIDENTIAL INSTRUCTIONS

The information in this paper is to enable the head of the school and the teacher in charge of Physics to make adequate preparations for this year's Physics practical examination. NO ONE ELSE should have access to this paper or acquire knowledge of it's contents. The teacher in charge of physics should NOT perform any of the experiments in the same room as the candidates or make the results of the experiment available to the candidates or give any other information related to the experiments to the candidates. Doing so will constitute an examination irregularity which is PUNISHABLE.

Each candidate should be provided with the following:

Question 1

- ✓ Saturated salt solution in 500ml beaker.
- ✓ Two identical cylindrical 100g masses
- ✓ Three pieces of thread.
- ✓ A retort stand.
- ✓ A metre rule

Question 2

- ✓ Ammeter
- ✓ A voltmeter
- ✓ A wire labelled X on a mm scale (Gauge 32)
- ✓ A switch
- ✓ A jockey
- ✓ Three new size D dry cells.
- ✓ Six connecting wires with crocodile clips at both ends.
- ✓ Three cells holders.

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PHYSICS
PAPER 3 (PRACTICAL)

Question 1

You are provided with the following.
- Two pieces of thread.
- Saturated salt solution in 500ml beaker.
- Two identical cylinder masses of 100g
- A retort stand.
- A metre rule.

a) Determine the volume V of one of the masses using the apparatus provided.
   Record V
   V = _____(2 marks)
   Explain how you determined the volume V. (1 mark)

b) i) Determine the centre of Gravity of the metre rule and record it.
   G .... (1 mark)

ii) Arrange the apparatus as shown in the diagram below such that X = 5cm from the pivot with a 100g mass completely immersed in the solution, hang the other 100g mass from the metre rule and adjust its position until the system is in equilibrium a shown in the diagram.
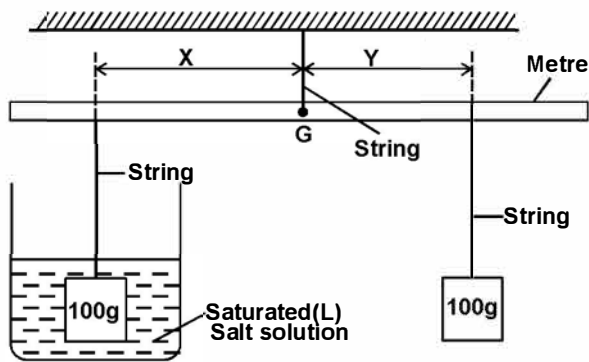
iii) Repeat the procedure above with the following values of X and fill the table.

x (cm)	5	10	15	20	25	30
y(cm)						

NB: During each experiment ensure that the position of the pivot does not change.

(c) Plot a graph y (y - axis) against x. (3 marks)

(d) Determine the slope "s" of the graph. (2 marks)

(e) Given that $S = \dfrac{F}{W}$ Where F is the apparent weight of the mass is the liquid L and W is the actual mass, calculate the value of F and the upthrust U. (3 marks)

(f) Hence determine the density e of the liquid L. (3 marks)

Question two.

✓ A wire mounted on a milliameter scale and labelled X.
✓ A switch.
✓ Ammeter
✓ 3 cell holders.
✓ 3 new size D dry cells.
✓ Seven connecting wires, three with crocodile clips both ends.
✓ Jockey.

Proceed as follows.

(a) Connect the circuit as shown in the figure below.
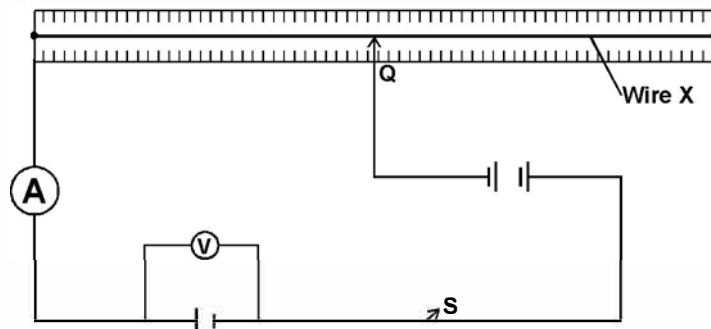
(b) Adjust the contact Q so that the reading on the voltmeter is 1.3V, note the reading of the current and record it in table below.

(c) Repeat the procedure above for the values of voltage given in the table and record the corresponding values of the current.

(d) Plot a graph of voltage V (y-axis) against current I(A) (5 marks)

(e) Determine the gradient of the graph. (3 marks)

(f) State the equation relating the voltage V, the internal resistance r and the e.m.f of the cell. (2 marks)

(g) From the graph determine the values of

(i) The e.m.f E of the cell. (1 mark)

(ii) The internal resistance, r of the cell. (2 marks)