

Name.....

Index No.....

School.....

Candidates Signature.....

Date

232/3

PHYSICS

Paper 3

(Practical)

July/August 2009

2 1/2 Hours

BORABU INTER – SECONDARY SCHOOLS

JOINT EVALUATION TEST - 2009

Kenya Certificate of Secondary Education (K.C.S.E)

232/3

PHYSICS

Paper 3

(Practical)

July/August 2009

2 1/2 Hours

Instructions to Candidates

- Write your name and index number in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above
- This paper consists of two questions
- Answer all the questions in spaces provided
- All working **MUST** clearly be shown
- No programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.

For Examiner's use only

Question	Max. Score	Candidates Score
1	20	
2	20	
Total	40	

This paper consists of 7 printed pages. Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing

1. You are provided with the following
 - A 100cm nichrome wire mounted on a millimetre scale.
 - An ammeter
 - A voltmeter
 - 2 dry cells (1.5V each)
 - A cell holder
 - A torch bulb and a bulb holder
 - Eight connecting wires at least 4 with crocodile clips
 - A switch
 - A Micrometer Screw gauge.

a) Measure the diameter d of the mounted wire at two different points.

d_1 d_2

Average $d =$ (1mk)

b) Connect the apparatus as shown below.

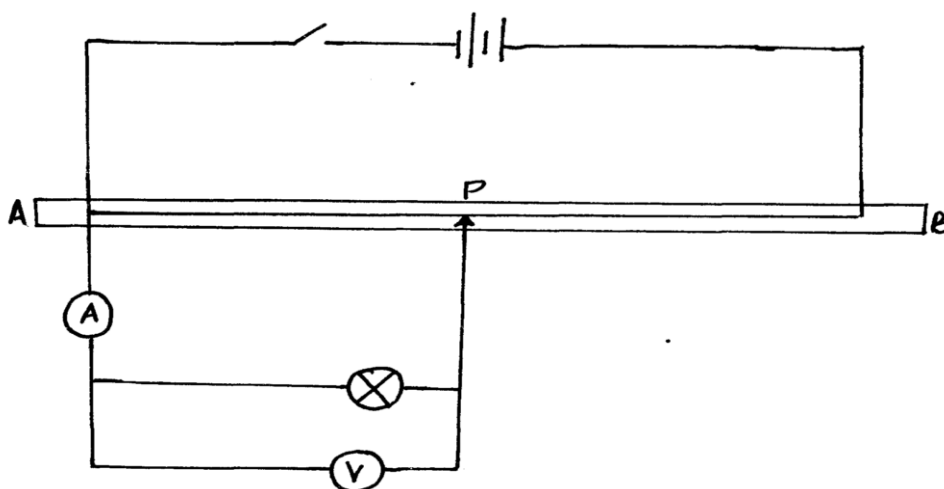
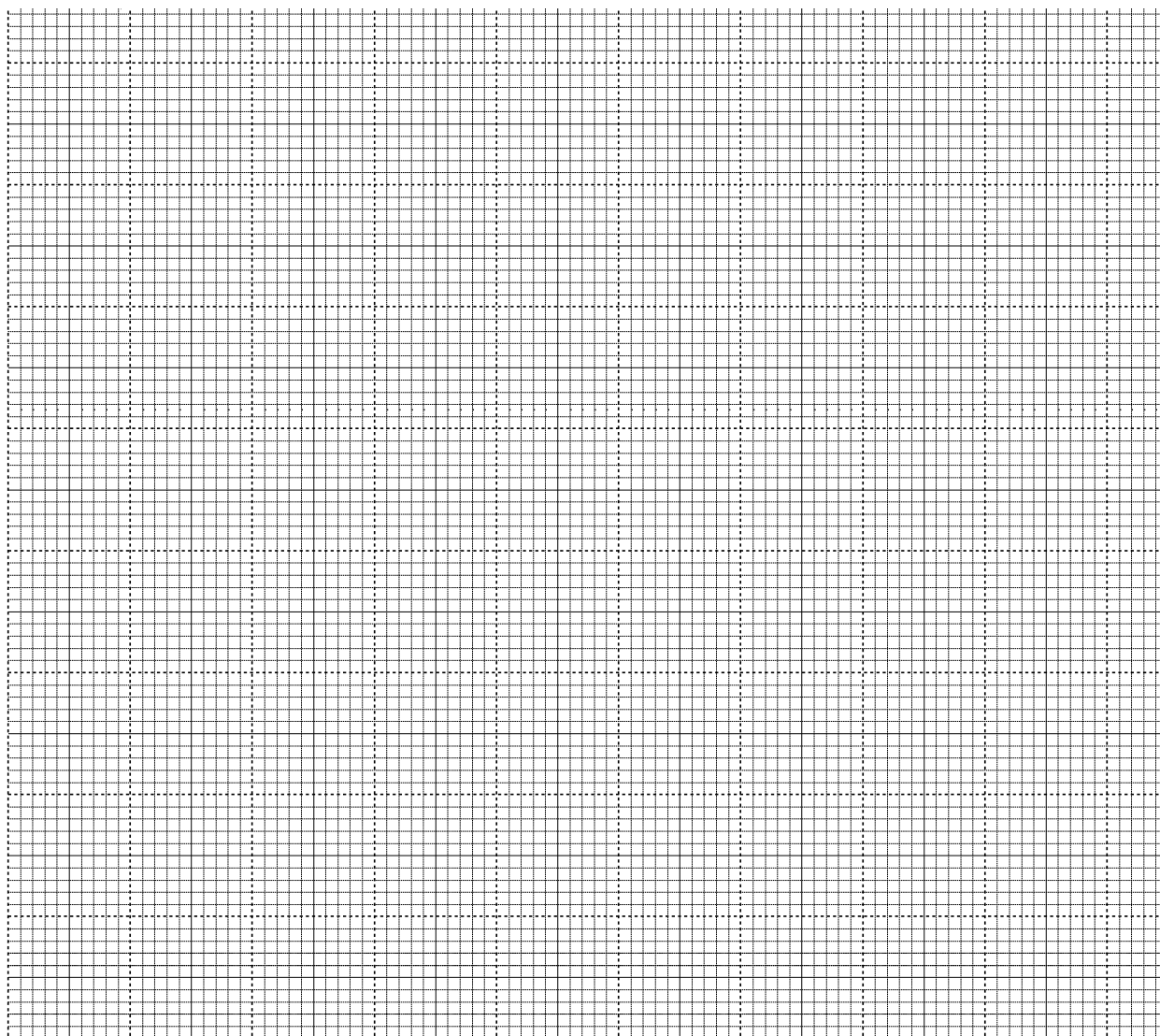


Fig 1

- c) Place the sliding contact at $P = 20\text{cm}$ from A and then close the switch. Record the readings of both the current and voltage in the table below.
- d) Repeat the above experiment by placing P at 40cm, 60cm, 70cm 80cm and 100cm from A. Record your readings in the table below. (6mks)

Length L (cm)	Voltmeter reading p. d (v)	Ammeter reading I (A)
20		
40		
60		
70		
80		
100		

e) i) Plot a graph of I (A) against p.d (v) on the grid provided (5mks)



ii) Determine the slope of the graph at $V = 0.6V$, starting its SI units. (3mks)

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iii) Determine the cross-sectional area (A) of the wire in m^2 (2mks)

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iv) Given that $V = \frac{\ell IL}{A}$

Where ℓ is the resistivity and A is the cross-sectional area of the wire and

$L = 0.70m$. Find ℓ (3mks)

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2. You are provided with the following
- A metre rule
 - A knife edge raised 15cm and above
 - two pieces of thread
 - Some water in beaker
 - Some glycerine in another beaker
 - One 100g mass and one 50g mass

Procedure

- a) Balance the metre rule on the knife edge and record the reading.

Balance point O = _____ cm (1mk)

This point of support should be maintained in the rest of the experiment.

- b) With the 100g mass completely immersed in glycerine, suspend it from one side of the metre rule at a point Q = 5cm from the point of support O; with the 50g mass also completely immersed in water, hang it from the other side of the metre rule and adjust its position until the system is in equilibrium as shown in Fig 2

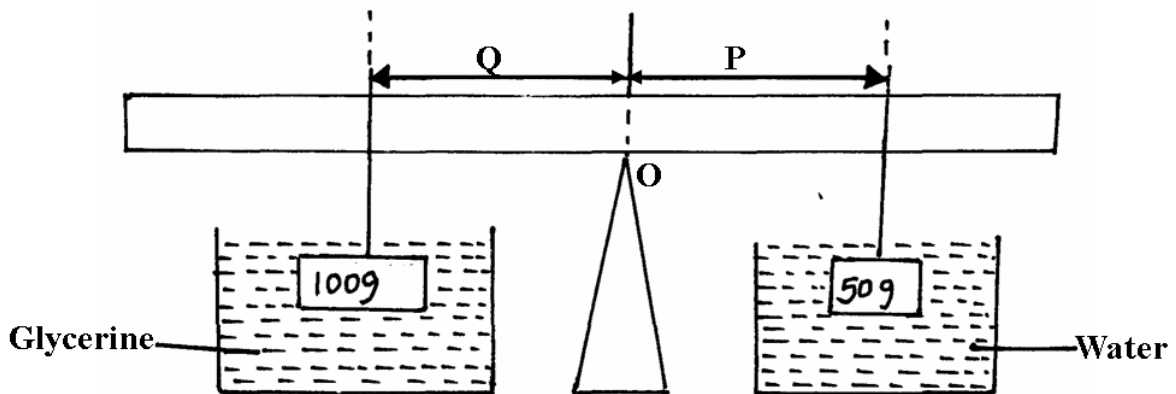


Fig 2

Read and record the point of suspension of the 50g mass.

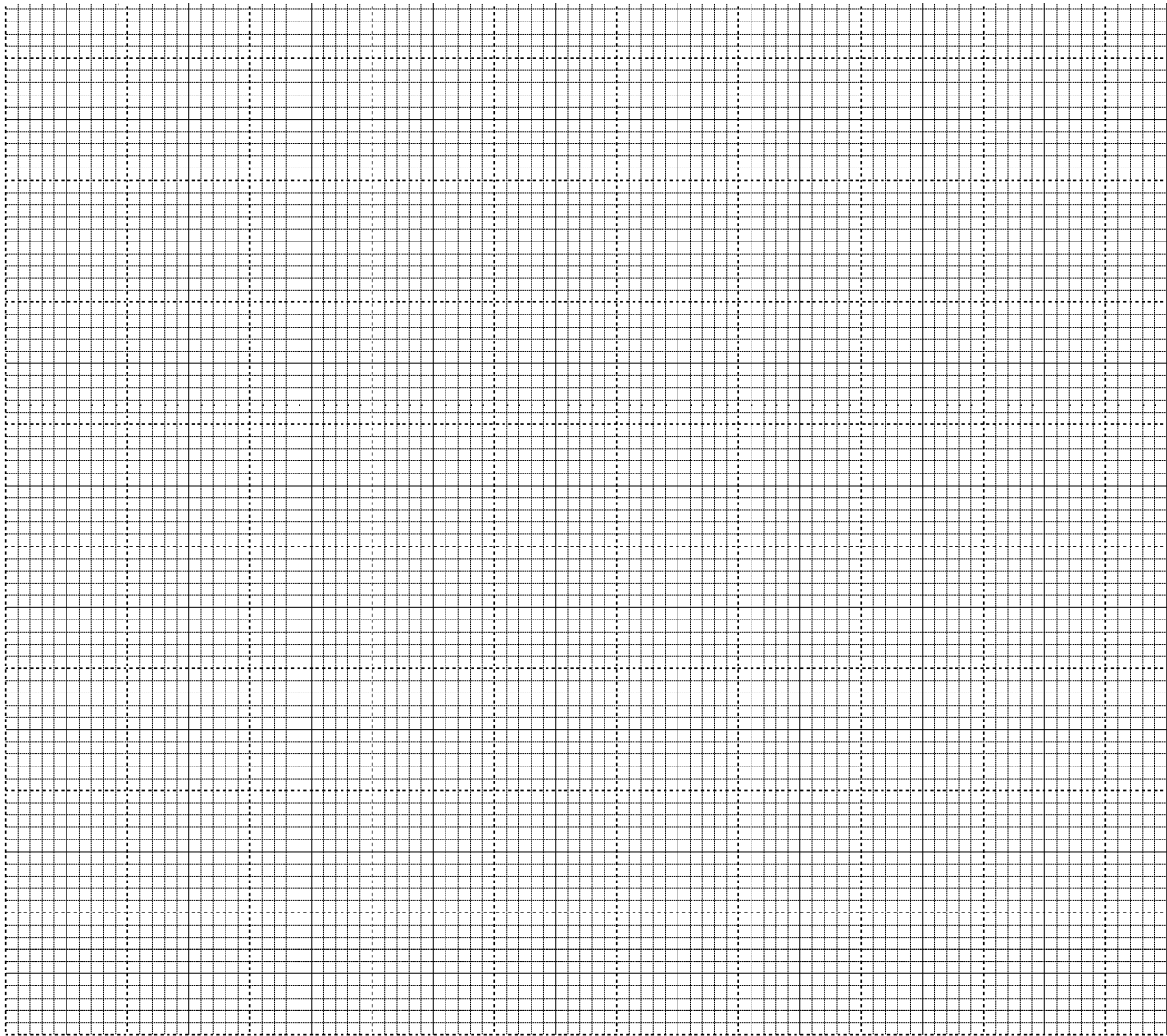
..... (1mk)

Repeat the procedure for values of Q = 10cm, 15cm, 20cm, 25cm and 30cm. Record the corresponding values of P in the table below. (6mks)

Q (cm)	Point of suspension of the 50g mass	P (cm)
5		
10		
15		
20		
25		
30		

c) i) Plot a graph of P against Q on the grid provided

(5mk)



ii) Determine the slope S of the graph

(3mks)

iii) Find the density of the liquid (d) given that

(4mks)

$$p = \frac{(0.78Q - 1.4 \times 10^{-4} d)Q}{0.32}$$