Name: …… Admission No: …….....

Date: ……..…….…..…..... Candidate's Signature:…….

232/3
PHYSICS
Paper 3 (Practical)
KCSE MOCKS 2017
Time: 2 ½ Hours

INSTRUCTIONS TO THE 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.*
- *You are supposed to spend the first **15** minutes of the **2 ½** hours allowed for this paper reading the whole paper carefully.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them*

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FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	20	
TOTAL	40	

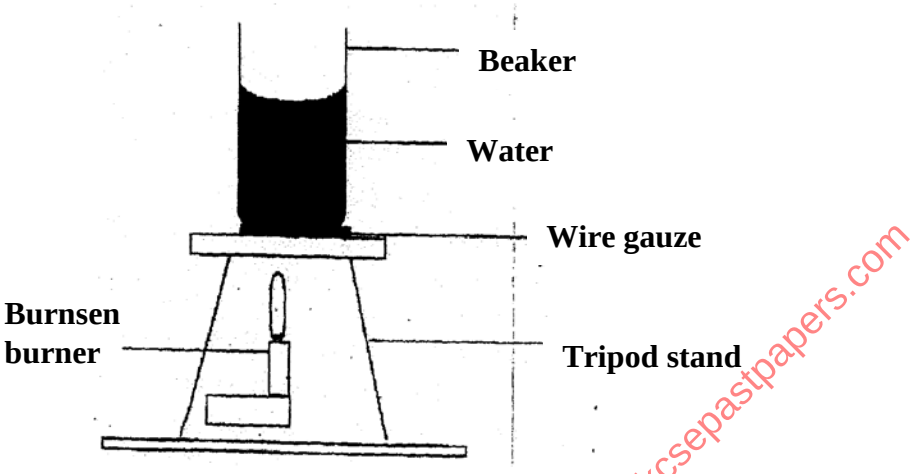
This paper consists of 7 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

QUESTION ONE

You are provided with the following;

- A 40ml glass beaker
- A Bunsen burner
- A thermometer
- A stop watch
- A tripod stand and a measuring cylinder 100ml
- A wire gauze
- A source of heat

Set up the apparatus as shown in the diagram below.



Measure 100cm^3 of water and pour it into the beaker. Take the initial temperature of the water.

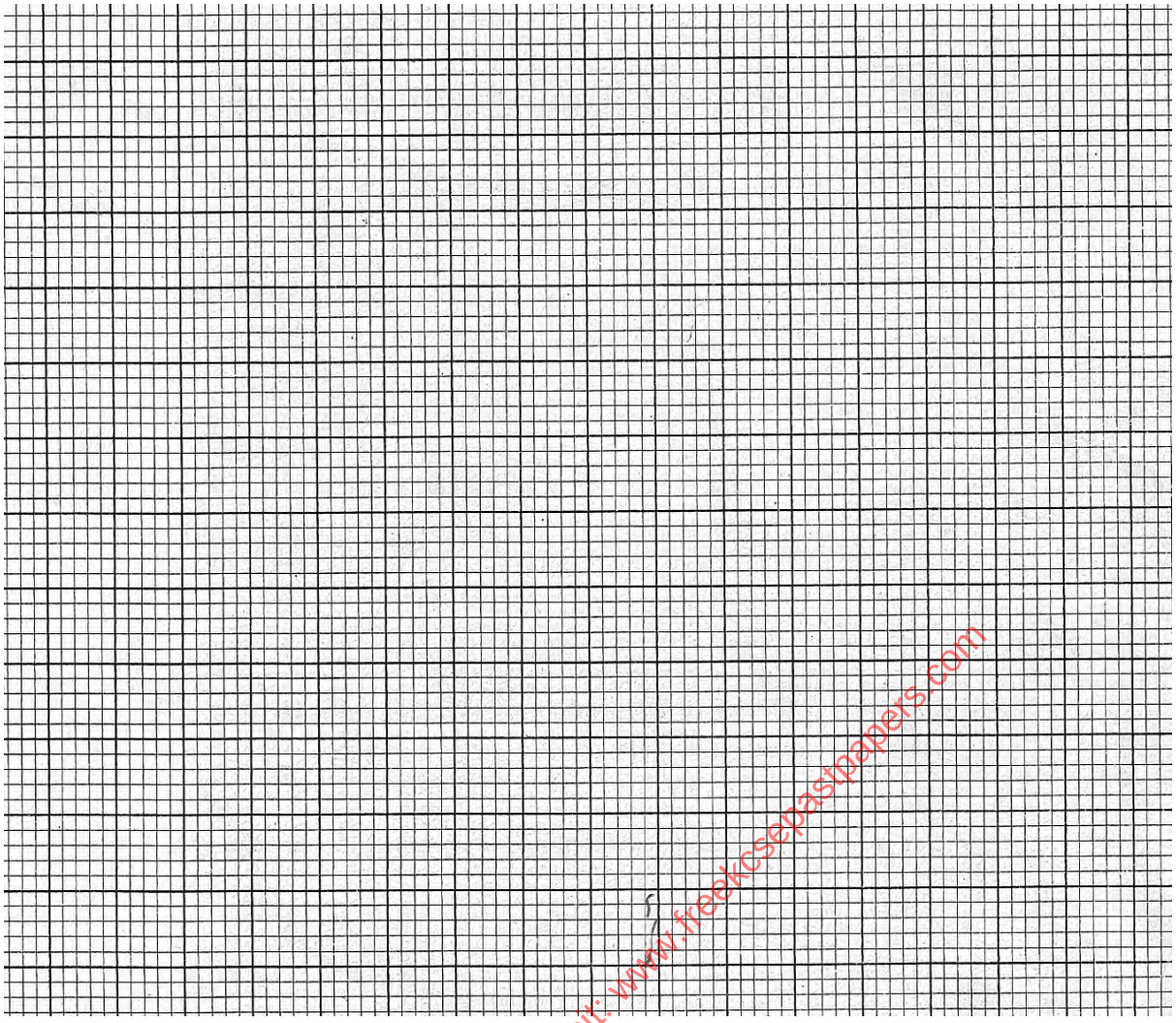
T_0…… (1 mark)

Now heat the water to a temperate of 90°C. Switch off the gas tap and place a thermometer into the beaker and start the stop watch when the temperature is 65°C. Take the temperature T°C of water every two minutes.

Record your results in the table below.

Time (t) (min)	2	4	6	8	10	12	14
Temperature (T) °C							
$(T-T_0)^0$							
Log $(T-T_0)$							

(i) Plot a graph of Log (T - To) against Time (t). (5mks)



(ii) Find the value K of log(T — To) when t =0 (2mks)

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Determine the antilog of K. (2mks)

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(iii)Calculate the temperature of the surrounding T_R using the expression
Antilog K =65 - T_R. (3mks)

QUESTION TWO

This question has two parts A and B. answer both parts.

PART A

You are provided with the following:

- A meter rule
- Two identical l00g masses
- About 200m1 of liquid L in 250m1 beaker
- Three pieces of thread, each about half metre long
- Stand with clamps
- Tissue paper.

Proceed as follows:

(a) Using a stand and one piece of thread, suspend the metre rule in air such that it balances horizoally. Record the position of the centre of gravity. G.

G=_____mm

NOTE: The mere rule should remain suspended at this point throughout the experiment.

(b) Set up the apparatus as in figure 2 below.

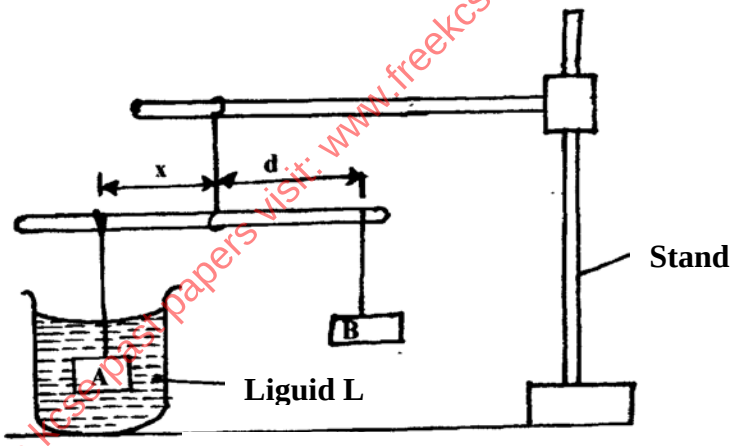


Figure 2

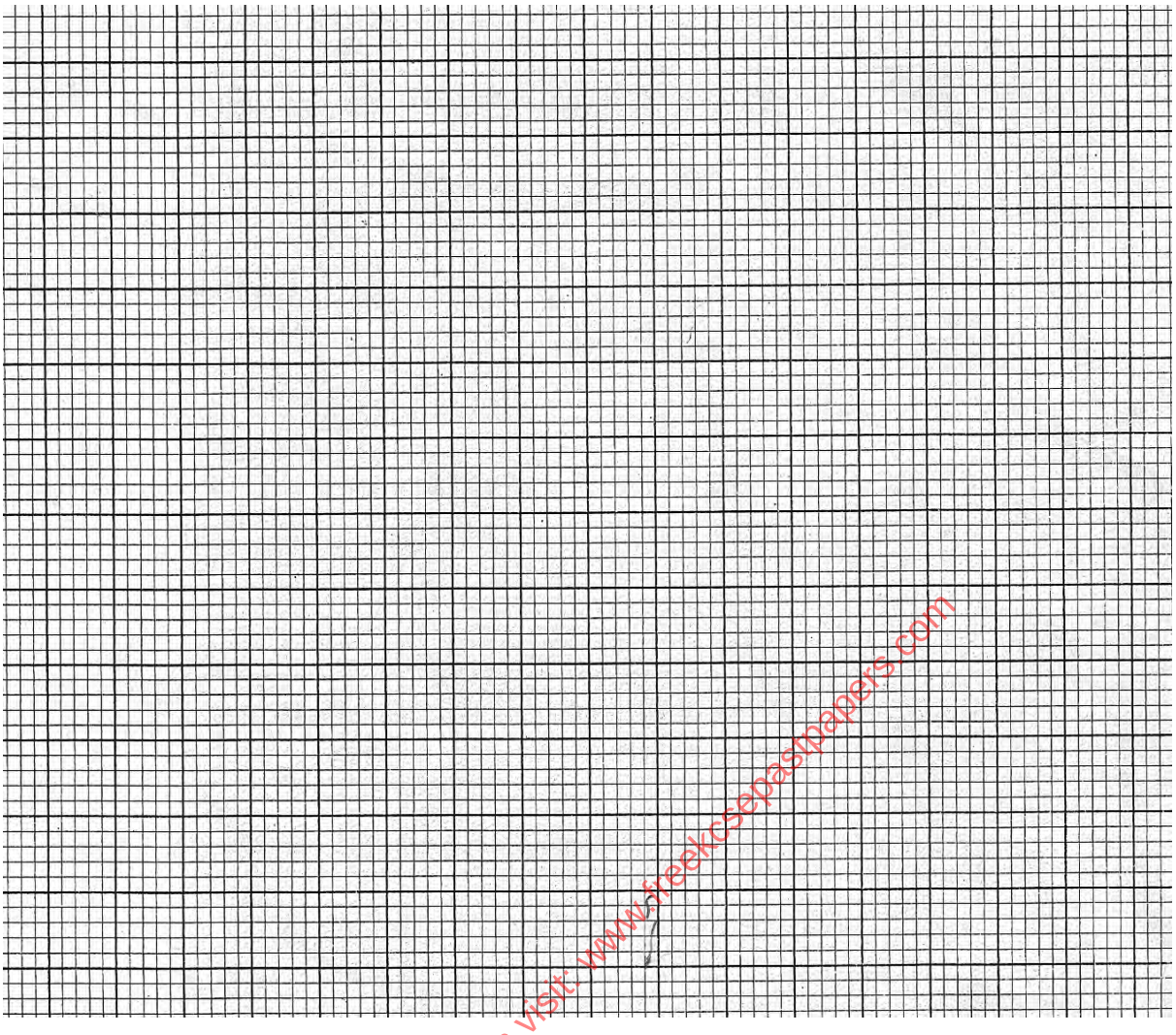
Suspend the mass A at a distance x = 50mm. Adjust the position of mass B until it balances mass A immersed in liquid L.
Record the distance d, of mass B from the pivot.

Repeat the same process for other values of x in table 2 below and complete the table.

x(mm)	50	100	150	200	250	300
d(cm)						

(3 mks)

(c) Plot a graph of d (y axis) against x. (5mks)



(d) Determine the slope, S of the graph. (2mks)

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(e) Given $S = \frac{F}{W}$, where F is the apparent weight of object A in the liquid L and W is the actual weight of A, find:

(i) The value of F (2mks)

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(ii) The up thrust U, Using the equation U= W-F. (3mks)

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PART B

You are provided with the following:

- A concave mirror with holder
- A screen
- A meter rule
- A candle
- A match box (to be shared)

Proceed as follow:

(f) Set up the apparatus as in figure 3 below.

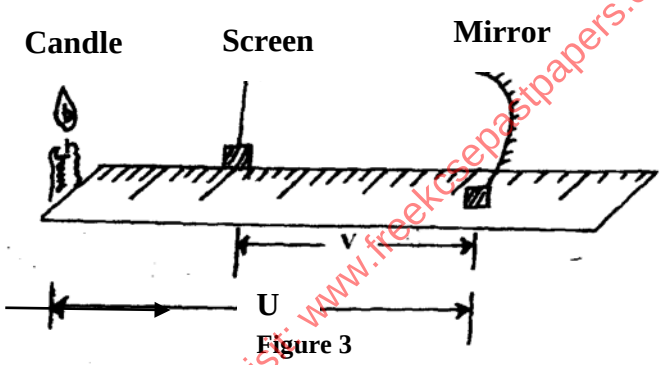

Figure 3

(g) Put the object at a distance u = 30cm from the mirror. Adjust the position of the screen until a sharp image is formed on the screen. Record the distance V.

(h) Repeat procedure (b) above for the distance u = 40cm and record the new distance V. complete the table 3 below.

U(cm)	V(cm)	$m=V/U$	(m+1)
30			
40			

(i) Given $= \frac{V}{(m+1)}$, calculate the values of f hence determine the average value f_{av} (3mks)

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