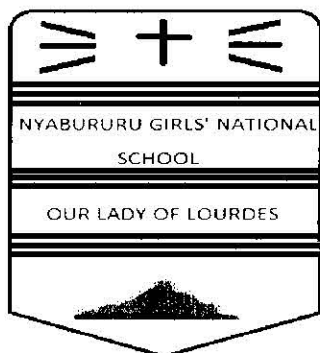


NAME.....INDEX NO.....CLASS.....SIGN.....



Date done	
Invigilator	
Date returned	
Date revised	

232/3
PHYSICS
(PRACTICAL)
 PAPER 3
 Time: 2 ½ hours

February series examination-2016
Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES:

1. Write your name, index number and school in the spaces provided above.
2. Sign and Write the date of examination in the spaces provided above.
3. This paper consists of two questions
4. All answers and working must be written on the question paper in the spaces provided below each question.
5. Non-programmable silent electronic calculators and **KNEC** Mathematical tables may be used unless stated otherwise

FOR EXAMINER'S USE ONLY:

Question		Maximum score	Candidates' score
Q1		20	
Q2		20	
Total score		40	

This paper consists of 8 printed pages. Candidates should check the question paper to Ensure that all the pages are printed as indicated and no questions are missing.

Question One

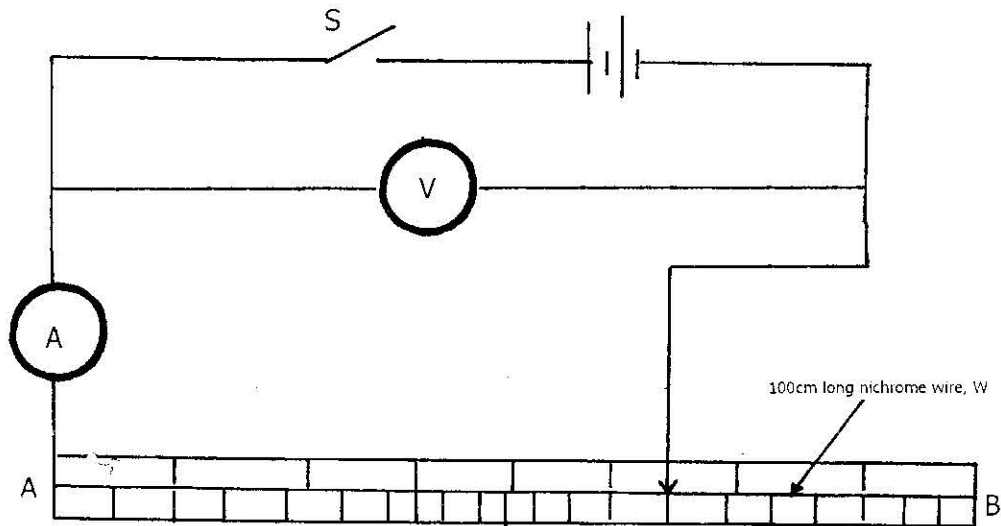
You are provided with the following:

- Two cells of 1.5V each
- Nichrome wire labeled W mounted on a metre rule
- An ammeter (0 – 2.5A)
- A cell holder
- Voltmeter 0 – 5v
- 8 connecting wires at least 4 with crocodile clips (or a jockey)
- A metre rule

Proceed as follows:

- (a) Connect the circuit as shown in the figure 1 below.

Figure 1



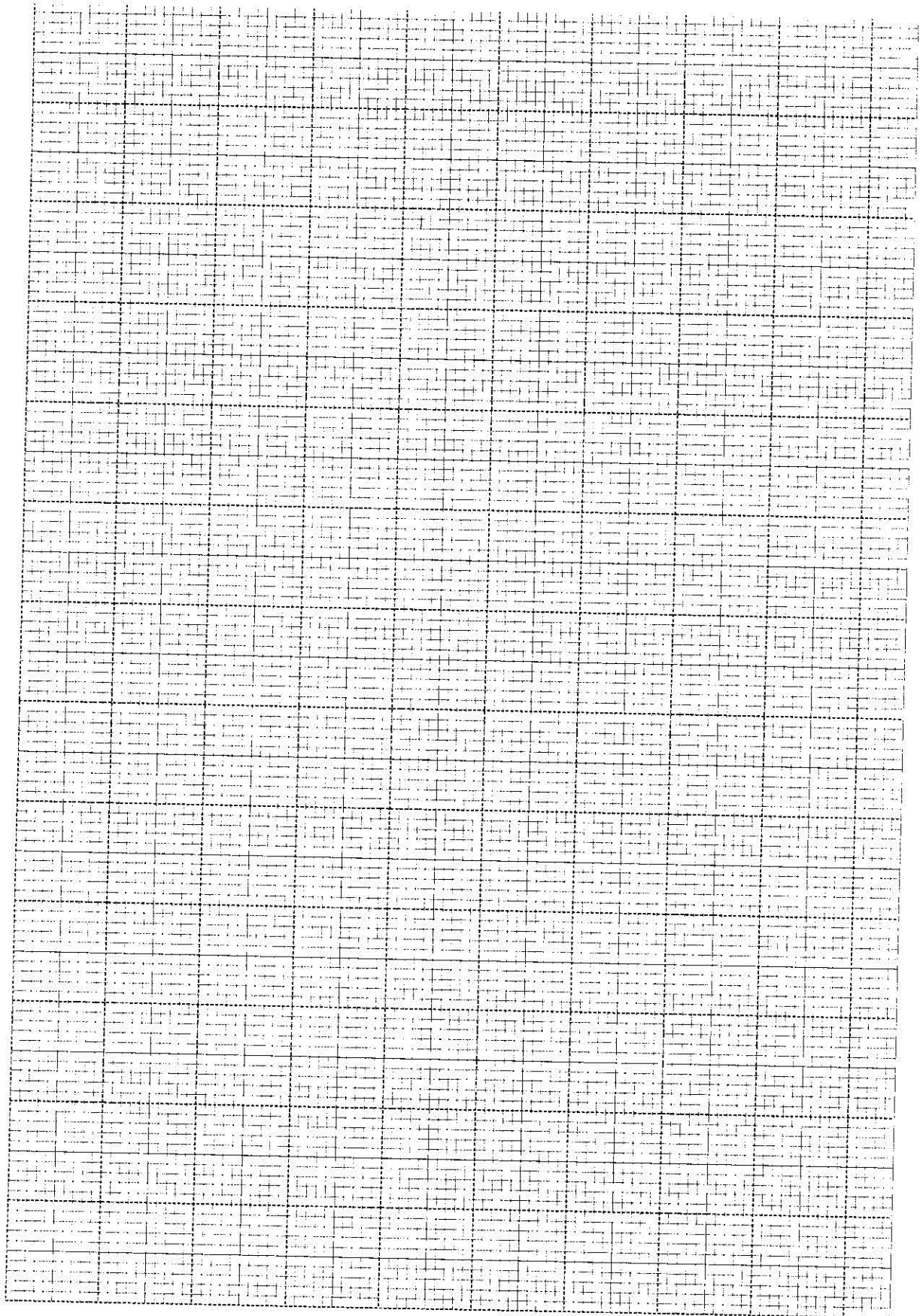
- (b) (i) Connect the end of A and point B when AB = 100cm across the terminals as shown in the figure 1 above.
 Close the switch and measure both current I and p.d , V across the wire AB
 Current I _____ A (1mk)
 P.d. V _____ V (1mk)
- (ii) Measure the emf of the cell, E = _____ V (1mk)
- (c) Reduce the length AB as shown. 100cm, 70cm, 60cm, 50cm, 40cm, 30cm and 20cm. In each case record the current (I) and the corresponding values of p.d (V)
- (d) Enter the length as shown in the table 1 below:

Table 1

Length AB (cm)	100	70	60	50	40	30	20
Current I (A)							
p.d (V)							
E – V (V)							

- (e) Complete the table (7mks)
 (i) Plot a graph of (E – V) against I (A) (5mks)

NAME.....INDEX NO.....CLASS.....SIGN.....



(ii) Determine the gradient of the graph (3mks)

.....

(iii) Given the equation, $E = V + Ir$, determine the internal resistance of each cell (2mks)

.....

Question Two

Part A

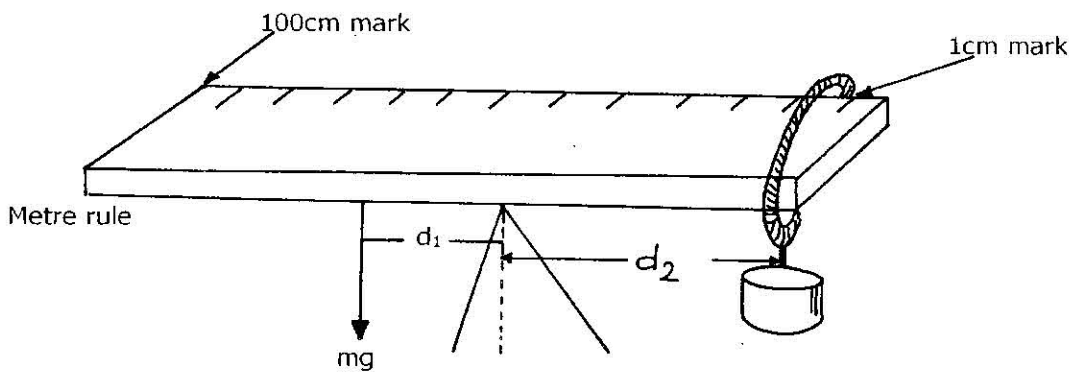
You are provided with the following apparatus

- A wooden metre rule
- 10cm long cotton thread
- Masses, two of 10g and two of 20g
- Knife edge – 20cm high

Proceed as follows

- (a) Arrange the apparatus as shown in figure 2 below
- (b) Balance the metre rule on the knife edge and adjust the metre rule until it balances horizontally when there is no mass on it. The knife edge is now at the position of centre of gravity (cog)
- (c) Record the position of (cog)
 Position of c.o.g = _____ cm (1mk)

Figure 2



- (d) Now hang a mass on the metre rule by use of the thread at 1cm mark. Adjust the knife edge until the metre rule balances again at new mark. Record the length d_1 and the corresponding length d_2 .
 - (i) Repeat the procedure for different masses and complete the table 2 shown below.

Table 2

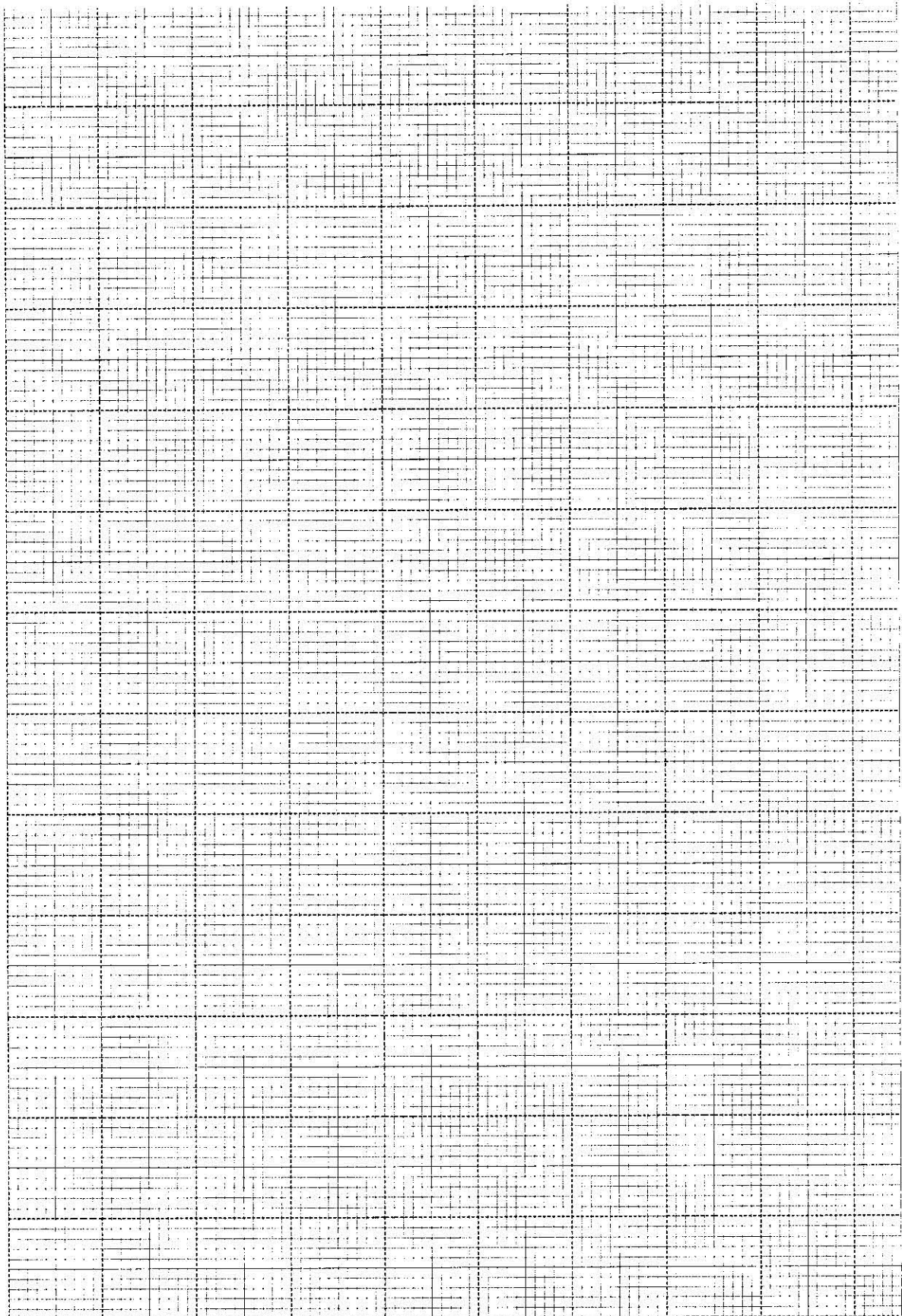
Mass, m(g)	10	20	30	40	50	60
Distance d_1 (cm)						
Distance d_2 (cm)						
Mass (m) x distance d_2 = md_2						

(7mks)

NAME.....INDEX NO.....CLASS.....SIGN.....

(ii) Plot a graph of md_2 against d_1

(5mks)



(iii) Calculate the slope s of the graph (2mks)

.....

.....

.....

.....

.....

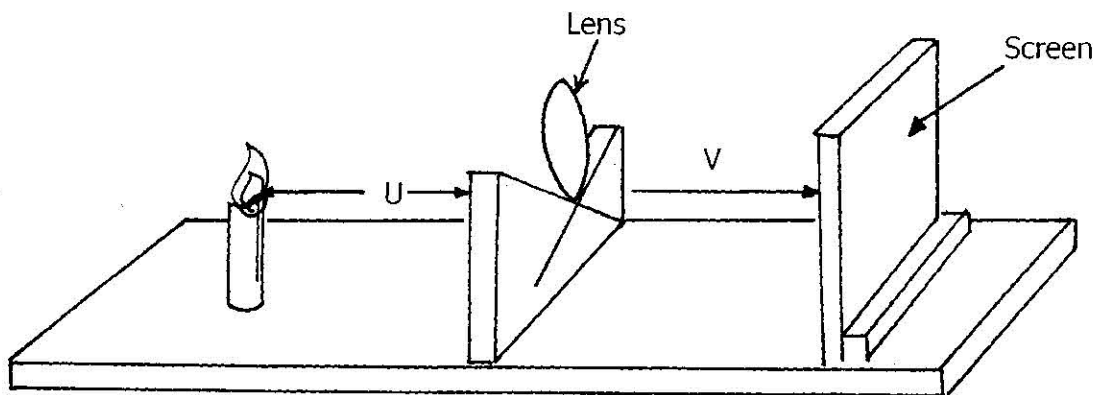
Part B

You are provided with the following apparatus

- A lens
- A lens holder
- A candle
- A white screen
- A metre rule

Procedure

- (f) Set up the apparatus as shown in the figure 3 below:
 (g)



- (g) Starting with $u = 30\text{cm}$ adjust the position of the screen to obtain a sharp image of the candle. record value of v in the table shown below:
 (h) (i) Repeat the procedure above for $u = 20\text{cm}$ and complete table below:

Table 3

u cm	v cm	$M = \frac{v}{u}$
20		
30		

(2mks)

- (ii) Given that the focal length of the lens satisfies the equation, $f = \frac{v}{1+m}$ determine the average value of the focal length (3mks)

.....

.....

.....