EXAMINATION NUMBER _____

BLANTYRE RURAL DISTRICT EXAMINATIONS

2024 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK EXAMINATION

PHYSICS

PAPER II

(40 marks)

Subject Number: M164/II

Friday,15th March, 2024 **Time Allowed: 2hours**

08:00 – 10:00 am

1 This paper contains **6 printed pages** with two sections **A** and **B. Please check**.
2 Answer **all** the **4** questions in this paper.
3 The maximum number of marks for each answer is indicated against each question.
4 Write your answers in the spaces provided on the question paper.
5 Calculators may be used.
6 Write your **Examination Number** at the top of each page of your question paper in the spaces provided.
7 In the table provided on this sheet, **tick** against the question number you have answered.
8 Write neatly and clearly.
9 For any mathematical question, show your working.

Question Number	Tick Qs 1 to 13 if answered	Do not write in These columns	
1			
2			
3			
4			

Turn over

1. Describe an experiment that could be conducted to find the density of cooking oil using the following materials: a triple beam balance, water of density $1g/cm^3$, cooking oil and a clear empty bottle.

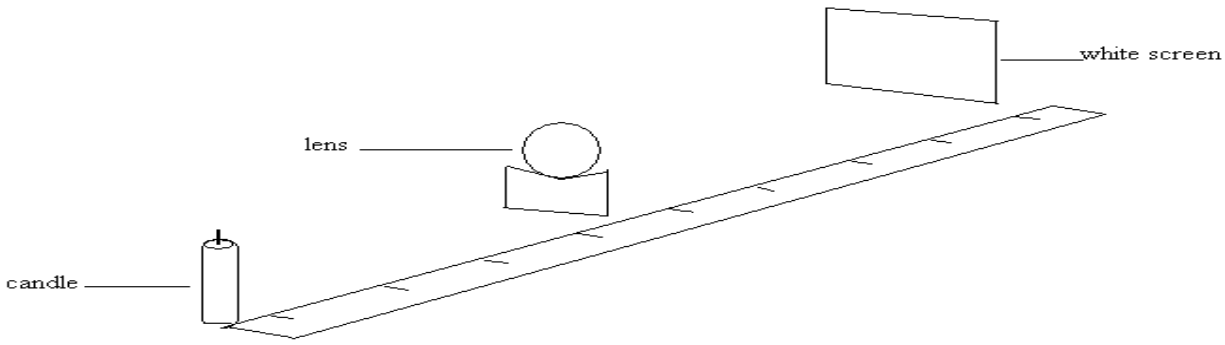
(9 marks)

2. With the aid of a well labelled circuit diagram, describe how a Light dependent resistor (LDR) works as an automatic switch that switches on light during night and switches off light during day.

(9 marks)

3. You are provided with a candle, a lens, a lens holder, matches, a metre ruler and a screen

a. Arrange the materials as in figure 1 below



b. Light the candle.

c. Move the object (candle) until it is 50 cm away from the lens.

d. Move the screen until a clear image of the object is formed on the screen.

e. Measure the image distance, **v** and record it in the table of results.

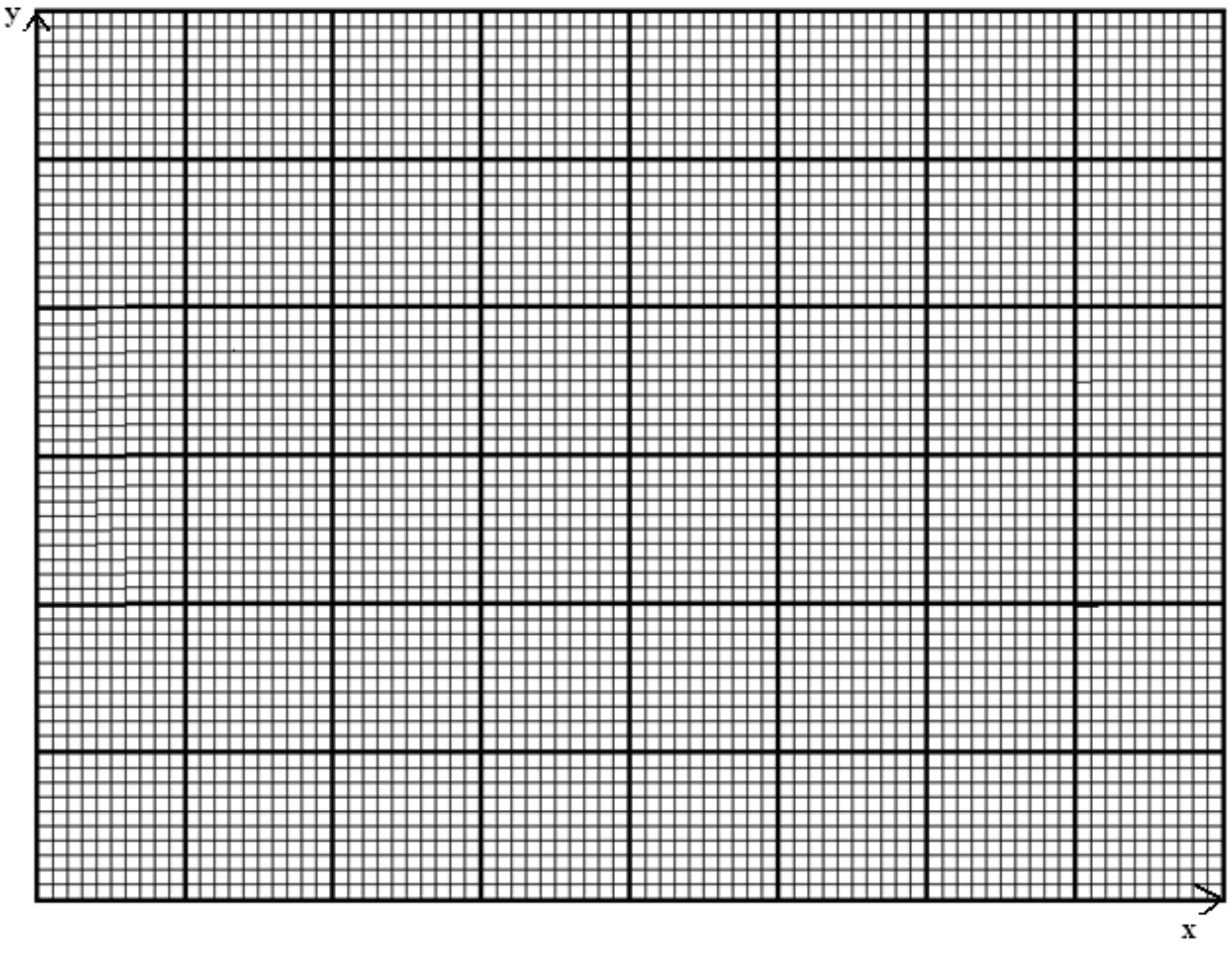
f. Repeat steps (**c)** to (**e)** for object distances shown in the table.

g. Complete the **1/v** and **1/u** columns of the table.

Object distance,u (cm)	**Image distance,v (cm)**	**1/v**	**1/u**
50			
40			
30			
25			
20			

(5 marks)

h. Plot a graph of **1/v** against **1/u**.

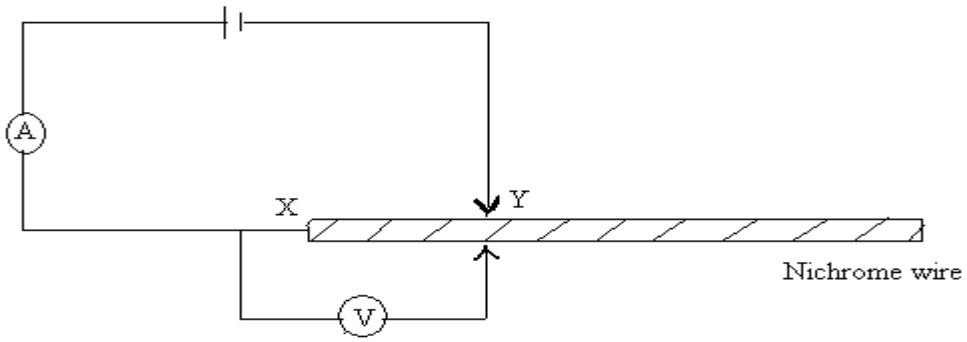


(4 marks)

i. Use the graph to find the focal length of the lens.

(2 marks)

4. You are provided with a nichrome wire, cells, a voltmeter, an ammeter, connecting wires and a switch.



Procedure

a. Connect the circuit as above

b. Move the crocodile clip along the nichrome wire until the ammeter reads 0.9A

c. Measure the voltage across length XY of the nichrome wire

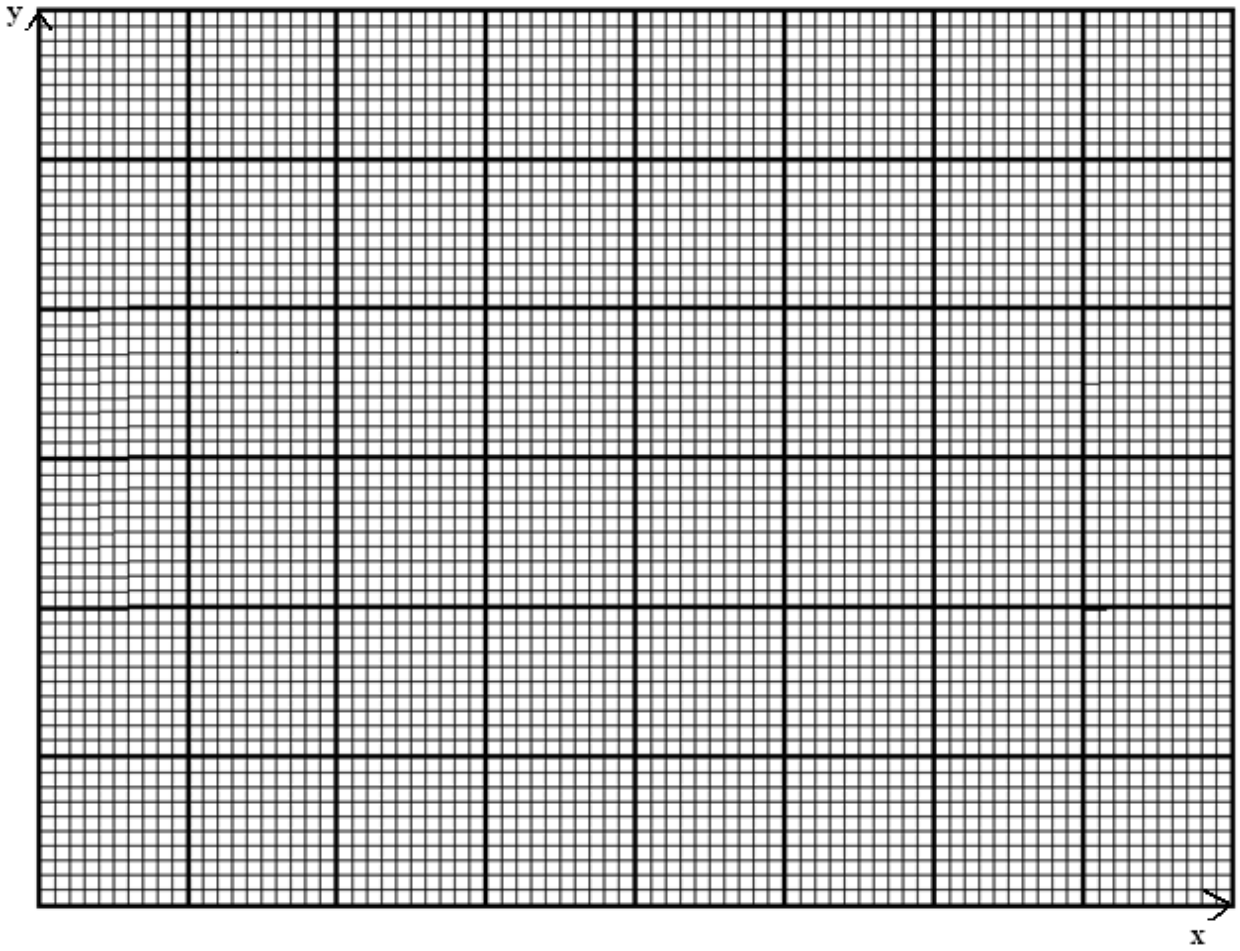
d. Record the voltmeter reading in the table 1 below

e. Repeat steps a) to d) using 0.7A, 0.5A, 0.4A and 0.3A

Ammeter reading (A)	0.9	0.7	0.5	0.4	0.3
Voltmeter reading (V)					

(5 marks)

f. Plot a graph of voltage against current



(4 marks)

g. From your graph find voltage when current is zero

_____(1 mark)

h. What name is given to the voltage deduced in g)

_____(1 mark)

END OF QUESTION PAPER