STUDENT NAME:_____SCHOOL NAME:_____

NSANJE DISTRICT MOCK

MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

PHYSICS

Subject Number: M164/II

Friday, 15 March

Time Allowed: 2 hour sessions

9:00 am onwards

PAPER II

(40 marks)

Practical

Instructions

1. **This paper contains 7 printed pages. Please check.**
2. This paper contains **two** sections, **A** and **B.**
3. Section **A** consists of **two** descriptive questions on practical work to be answered in **1** hour. Marks will be given for accurate and orderly presentation of facts supported by relevant diagrams.
4. In section **B** there are **two** practical questions to be answered in **1 hour**.
5. Marks for section **B** will be given for observation, accuracy and interpretation of results.
6. You should spend 30 minutes on each question. The 30 minute period allowed for each question includes 3 minutes to tidy up the apparatus and have it checked by the supervisor
7. Write your **Name and School Name** at the top of each page of your question paper in the spaces provided.
8. In the table provided on this page, **tick** against the question number you have answered.

Question Number	Tick if answered	Do not write in these columns	
1			
2			
3			
4			
	Total		

Section A (20 marks)

1. With the aid of a well labelled diagram, explain how a manometer works to measure gas pressure.

(10 marks)

Continued/...

2. With the aid of a well labeled diagram, describe an experiment that can be conducted to show that liquids expand differently when heated with the same amount of heat.

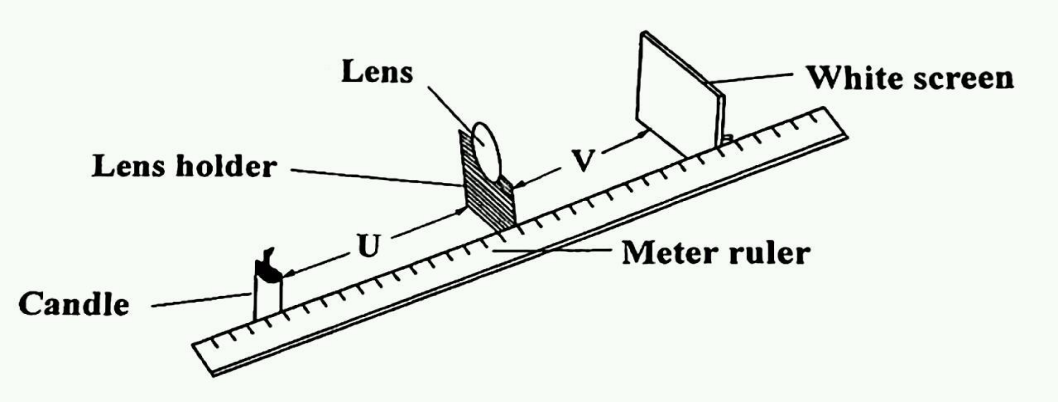
(10 marks)

Continued/...

Section B (20 marks)

3. You are provided with a card board, a one meter ruler, a candle, lens, lens holder and matches.

a. Set up the apparatus as below.



b. Put a burning candle at 0 cm mark on the ruler and lens at 22.5 cm.

c. Adjust position of the screen by sliding to or away from the lens until a sharp image of burning candle forms on the screen.

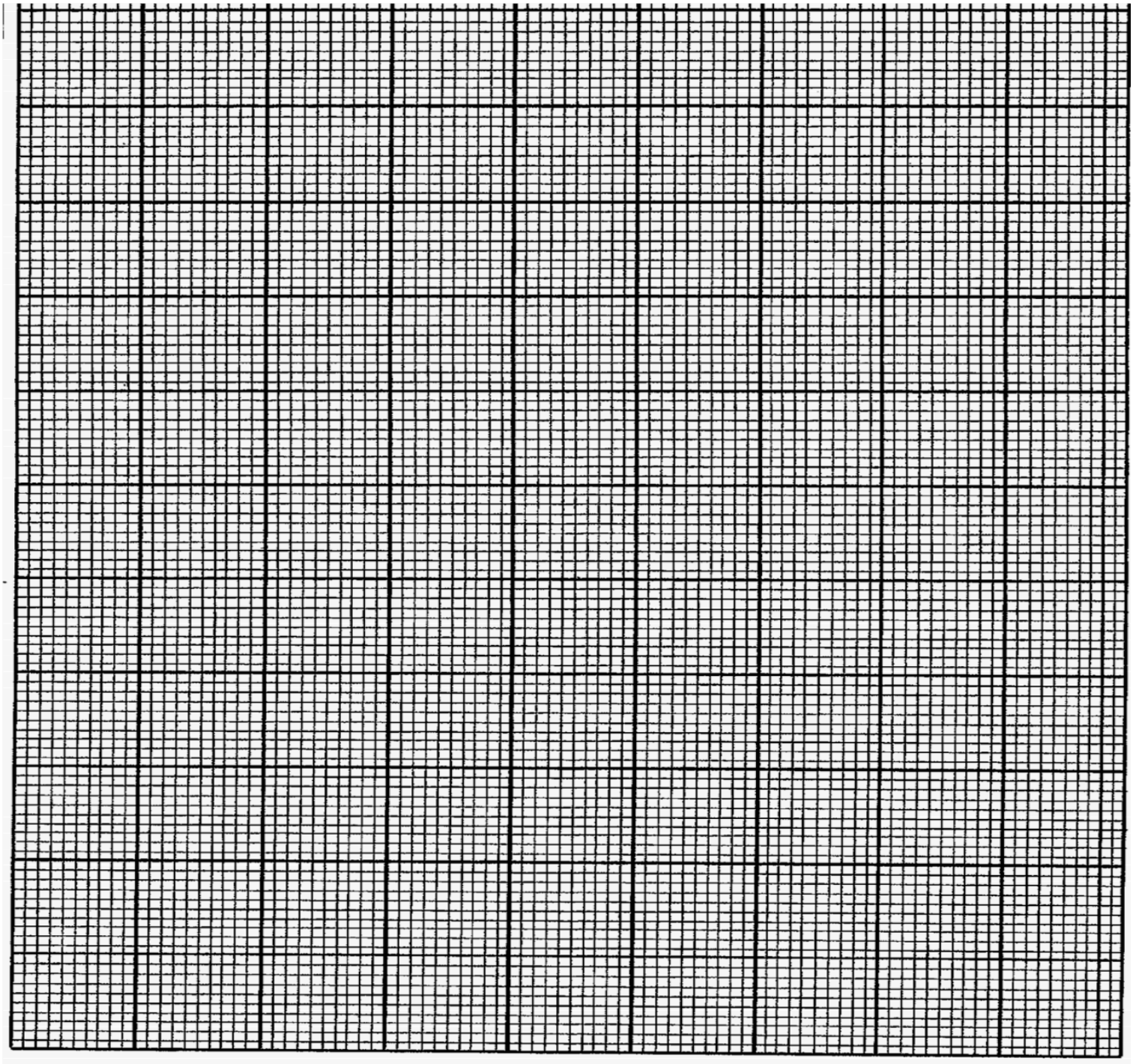
d. Repeat steps b and c by putting the lens at 25 cm, 30 cm, 35 cm, 40 cm, 45 cm, 55 cm and 60 cm.

e. Fill the table below.

Object distance, U (cm)	Image distance, V (cm)	U+V (cm)
20		
22.5		
25		
30		
35		
40		
45		
50		
55		
60		

Continued/...

f. Using a suitable scale, plot a graph of u+v against u on the graph paper provided.



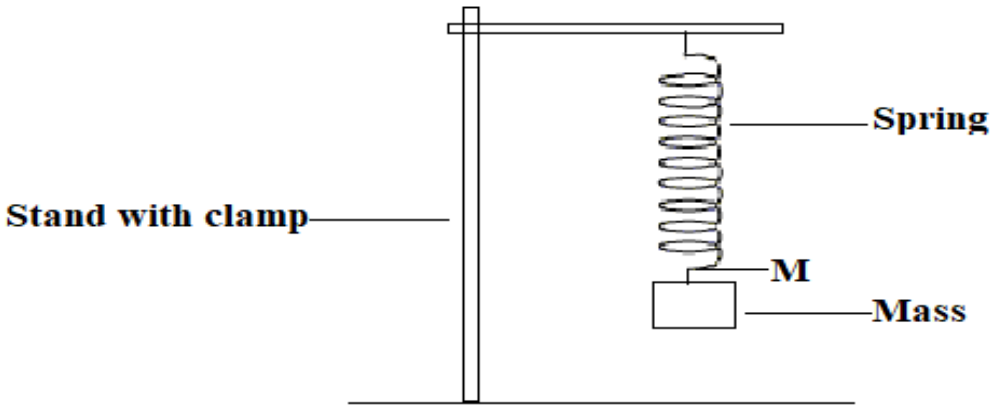
Continued/...

g. Using the graph line work out the focal length of the lens using the relationship either 2F=u or 4f= u + v.

(10 Marks)

4. You are provided with a 1 metre ruler, a spiral spring, a clamp and clamp stand and masses 50g, 100g, 150g and 200g.

   (a). Set the apparatus as shown below;



Record the initial position **'M'** of the spring before the mass is loaded, M = ____cm

(1 mark)

Continued/...

(b). Load the spring with a 50g mass and record the new reading in the table below as **Y**.

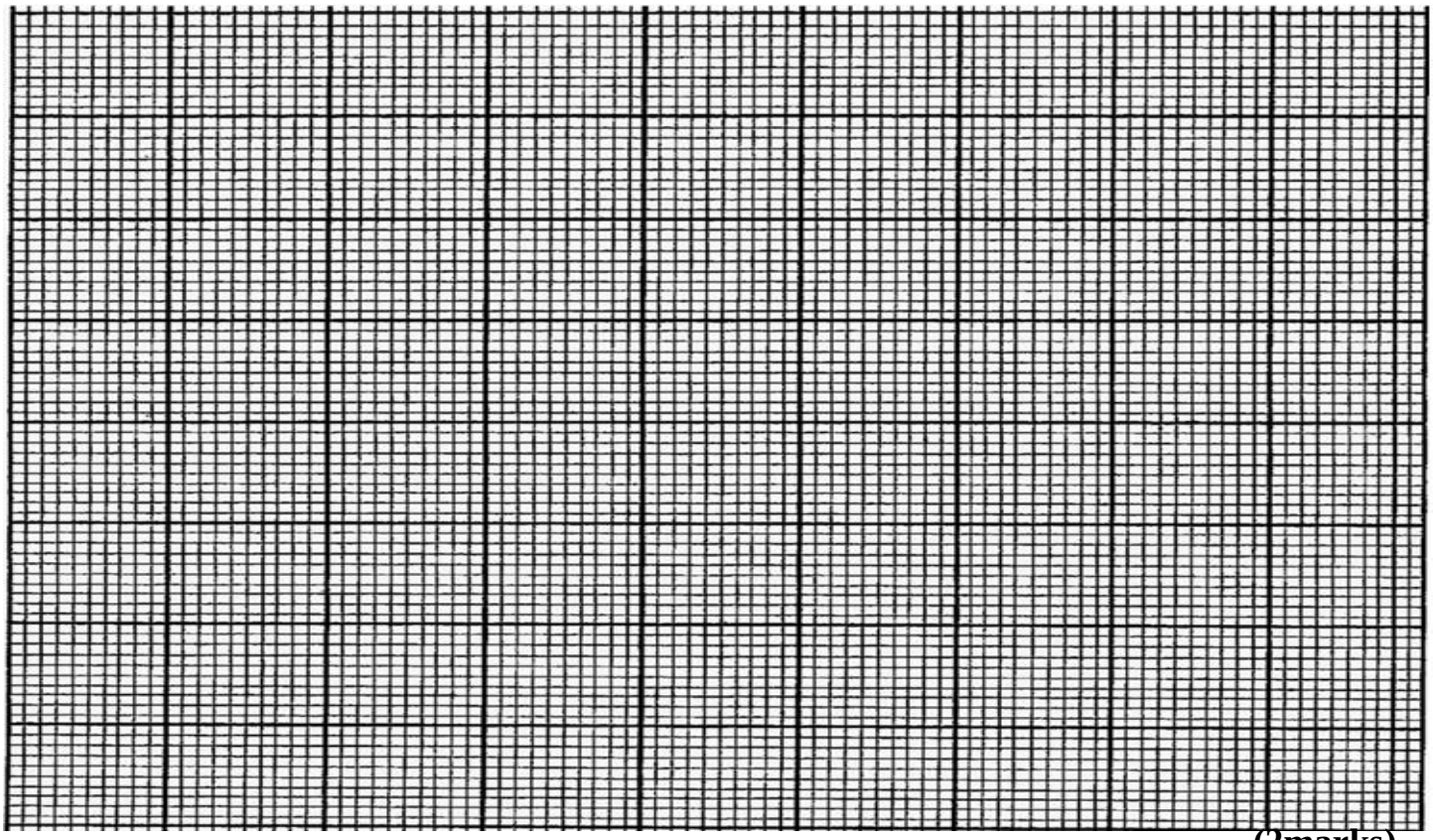
(c). Repeat step **'b'** with 100g, 150g and 200g masses and record

Table of results

Mass(g)	Force(N)	Final reading(Y)	Extension (Y-M)
50			
100			
150			
200			

(4 marks)

(d). Plot the graph of force against extension.



(2marks)

(e).What is the relationship between applied force and extension?

_____

_____

(1 mark)

(f). Use the graph to calculate the spring constant of the spring. **(2 marks)**

END OF QUESTION PAPER

NB: This paper contains 7 pages