TEVETA

Technical Education, Vocational and Entrepreneurship Training Authority

DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY

LEVEL 6 YEAR I EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATIONS

SITTING: JULY - AUGUST 2025

SUBJECT: FOUNDATION PHYSICS PRACTICAL

TIME: TWO (2) HOURS **TOTAL MARKS: 100**

PASS MARK: 50

INSTRUCTIONS TO CANDIDATE

1. Write your Examination Number and National Registration Card (NRC) Number on the marking guide provided.
2. This paper has one (1) task. Perform the task as per given procedure.
3. Diagrams may be used where necessary to clarify your answer.
4. Cellphones and programmable calculators are not allowed in the examination room

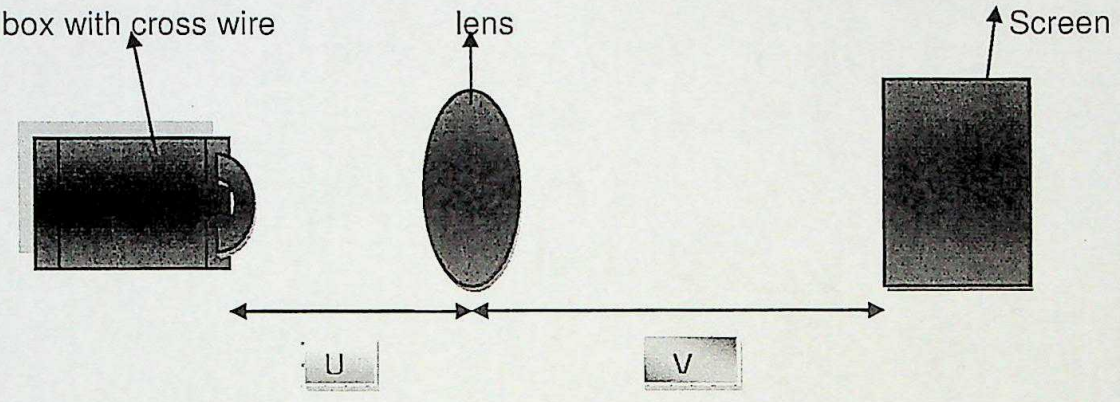
DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

TASK: TO DETERMIINE THE FOCAL LENGTH OF A CONVERGING LENS BY GRAPHICAL METHOD.

Aim: To determine the focal length of a converging lens by graphical method

Procedure

1. Arrange the apparatus as shown in the figure below. **[2 marks]**



2. Move the screen until a clear inverted image of the cross wire is obtained. **[2 marks]**
3. Measure the distance u from the cross wire to the lens, using the meter rule. **[1 mark]**
4. Measure the distance v from the screen to the lens. **[1 mark]**
5. Calculate the focal length of the lens. **[2 Marks]**
6. Repeat this procedure for different values of u and record your findings in the table below

Table one (1)

Trial Number	**u(cm)**	**v(cm)**	$\frac{1}{u}$	$\frac{1}{v}$

[12 Marks]

Data analysis

1. Compute values for $\frac{1}{u}$ and $\frac{1}{v}$ **[2 Marks]**
2. Plot a graph $\frac{1}{u}$ on the x axis and $\frac{1}{v}$ on the y axis. **[8 Marks]**
3. Determine the x and y intercepts of the line of best fit. **[4 marks]**

4. Calculate the mean focal length using the equation.

$$f = \frac{2}{\text{X intercept} + \text{Y intercept}}$$

[3 Marks]
[Total: 35 Marks]

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Technical Education, Vocational and Entrepreneurship Training Authority

DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY

LEVEL 4 – YEAR I EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATIONS

SITTING: JULY / AUGUST 2025

SUBJECT: FOUNDATION PHYSICS PRACTICAL

MARKING GUIDE

Centre Name	
Centre Number	

Candidate Examination Number	
Candidate NRC Number	
Candidate Signature	

Examiner Name	
Examiner NRC No	
Examiner Signature	

SCORE (Percentage)

MARKING GUIDE

S/N		ALLOCATED MARKS	ACTUAL MARKS
1	**Arrange the apparatus.**	2	
2	The distance u from the cross wire.	2	
3	The distance v from the screen to the lens.	1	
4	The focal length of the lens	1	
5	Different values	2	
6			

TABLE OF RESULTS

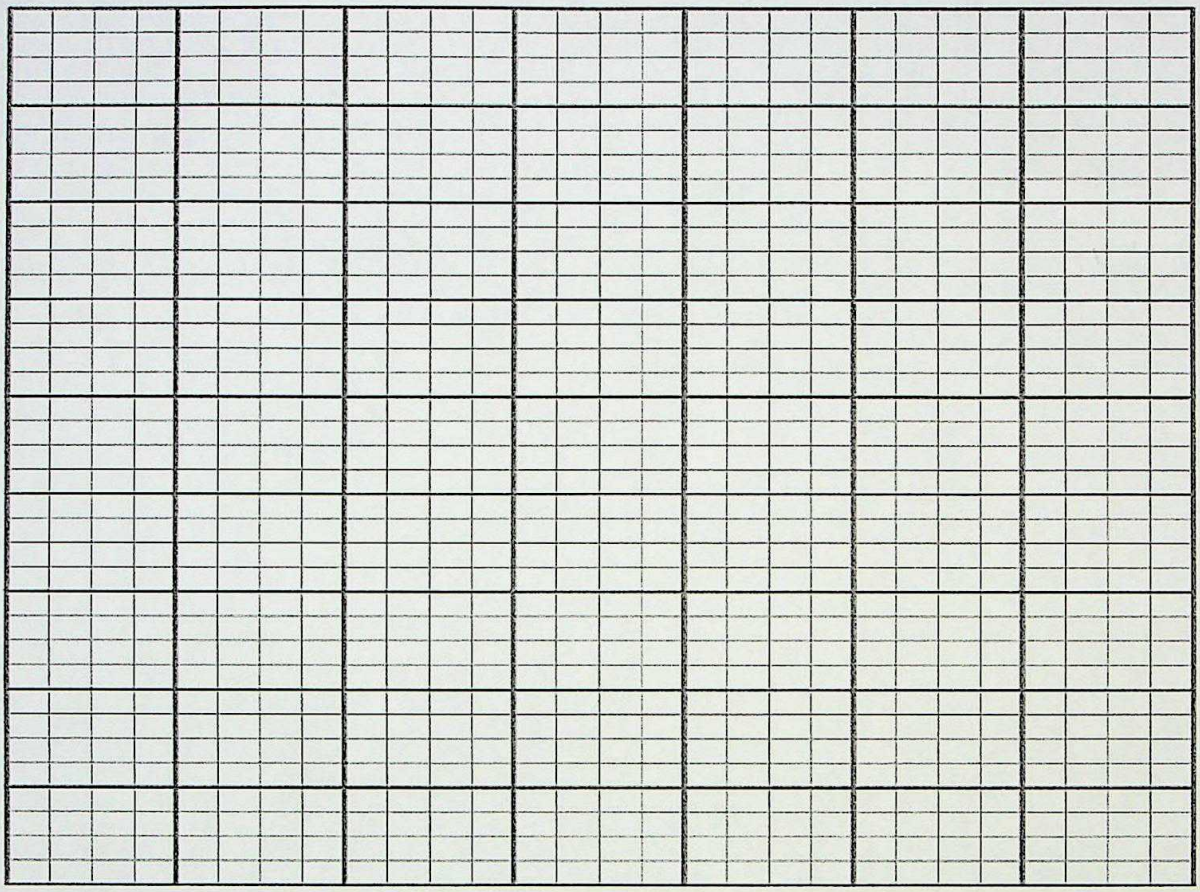
Trial Number	u(cm)	v(cm)	$\frac{1}{u}$	$\frac{1}{v}$

[12 Marks]

Data analysis

1. Compute values for $\frac{1}{u}$ and $\frac{1}{v}$

2. Plot a graph $\frac{1}{u}$ on the x axis and $\frac{1}{v}$ on the y axis



[8 Marks]

3. Determine the x and y intercepts of the line of best fit. **[4 marks]**

4. Calculate the mean focal length using the equation. **[3 marks]**

$$f = \frac{2}{\text{X intercept} + \text{Y intercept}}$$

[Total: 35 Marks]