UKEREWE DC
PHYSICS 2A MARKING SCHEME
JOINT EXAM MAY-2025

1 (c) Table of results G at 49·5cm

a(cm)	12	15·2	18	21·2	24	27·2
b(cm)	10	12·5	15·0	17·5	20	22·5
	(01)	(01)	(01)	(01)	(01)	(01)

Total (6 marks)

(d) On graph paper

(e) Slope of the graph $(S) = \frac{\Delta b\,(cm)}{\Delta a\,(cm)}$ (0.1)

$= \frac{18·8 - 11·5}{22·5 - 13·5} = 0·85$

Slope (S) = 0·85 (02)

Note: Slope can vary (range) from 0·83 → 0·87

(f) Value of x, if x = 5m

$x = 0·85 \times 100g = 85g$ (2½)

Note: Mass can vary range from 83g → 87g

(h) Principle of moment of force (2½)

State that, for system to be in equilibrium the total sum of clockwise moment is equal to the total sum of anticlockwise moment of force.

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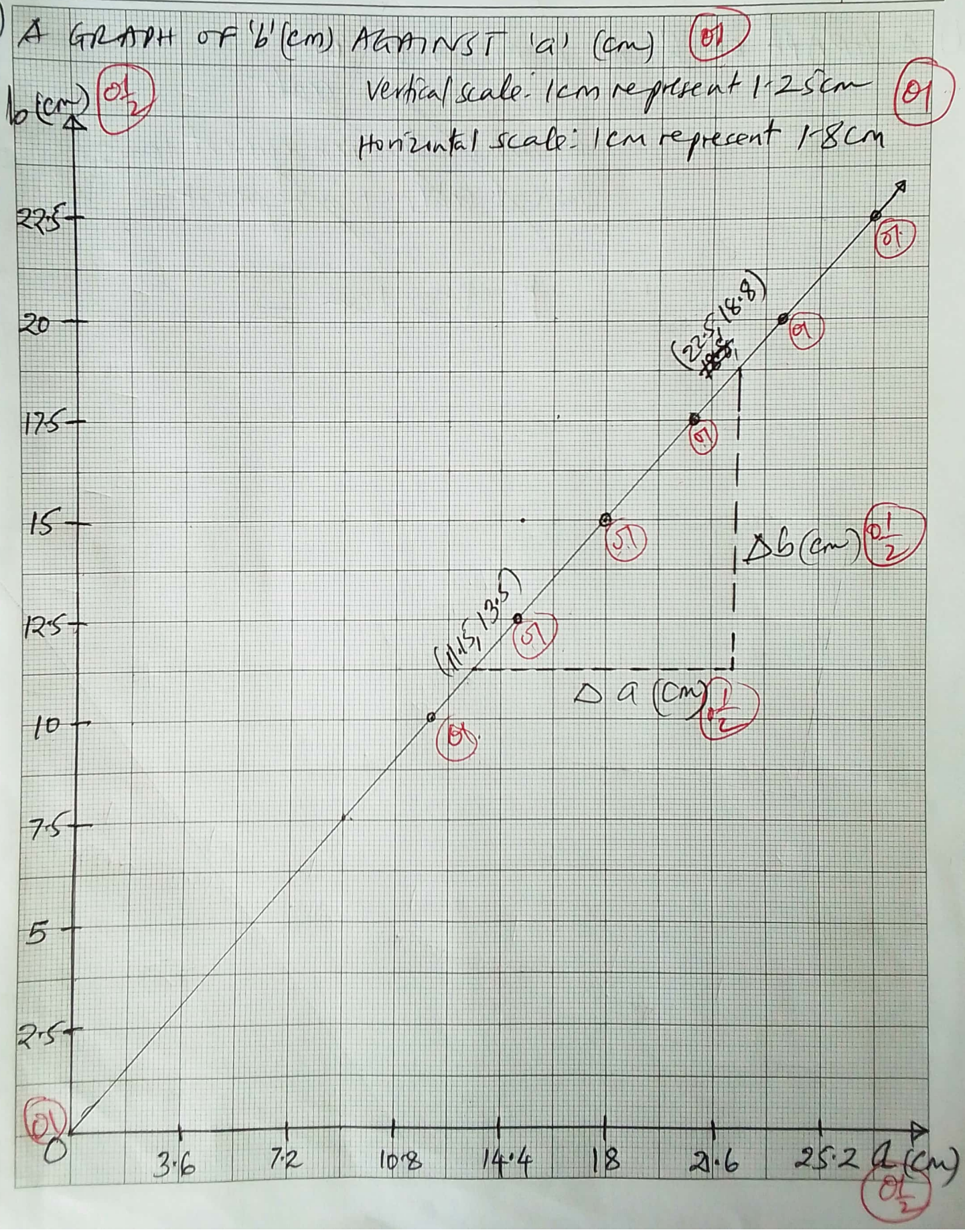
Question Number	SUBJECT NAME..... INDEX NUMBER.....	For Examiners' use only

(d) A GRAPH OF 'b' (cm) AGAINST 'a' (cm) 01

Vertical scale: 1cm represent 1·25cm 01

Horizontal scale: 1cm represent 1·8cm



2 (a) Table of results

θ (deg)	n	1/θ (deg⁻¹)
90	3 (0½)	0.011 (0½)
72	4 (0½)	0.014 (0½)
60	5 (0½)	0.017 (0½)
45	7 (0½)	0.022 (0½)
30	11 (0½)	0.033 (0½)

(Total 05 marks)

(b) ~~G~~ On graphy paper.

(c) (i) Slope of graph (G) = $\frac{\Delta n}{\Delta \frac{1}{\theta}}$ (0½)

~~0.0264 - 0.0122~~

$\frac{8.5 - 3.4}{0.0264 - 0.0122} = 359.15$

$= 359.15$ (0½)

$\simeq 360$

$\simeq 360$

∴ Slope (G) = 360 (01)

(ii) n-intercept of graph is ~~(P) =~~ −1 (02)

(iii) Given eqn $n = \frac{G}{\theta} + P$

eqn become $n = \frac{360}{\theta} - 1$ (02)

(d) (i) when θ = 0°, the number of images will be uncountable (infinity). (02)

(ii) The aim of this experiment is to determine number of images in the plane mirror at a certain angle. (02)

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(b) A GRAPH OF n AGAINST $\frac{1}{\theta}$ (deg^{-1}) (01)

Vertical scale: 1cm represent 1 unit (01)

Horizontal scale: 1cm represent 0.0033 deg^{-1}