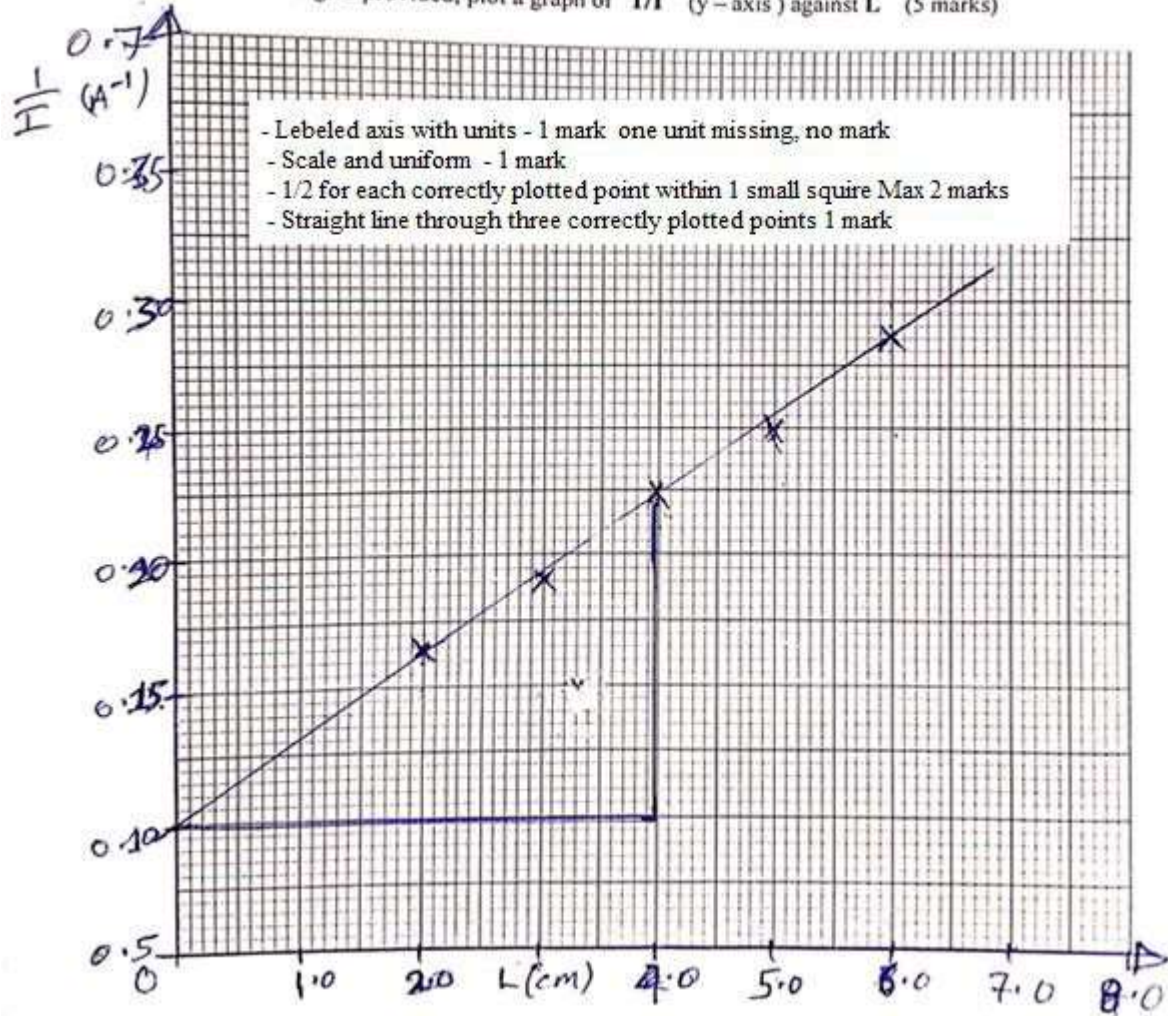


- Two dry cells
- A cell holder
- A switch
- An ammeter
- A voltmeter
- Six Connecting wires, two with crocodile clips.
- Nichrome wire mounted on a meter rule, labeled X
- A micrometer screw gauge

WORKING							MARKING POINT
E = 3.0 +/- 0.2							-1 Mark
d) Allow +/- 0.04 for values of current							-For current 1 mark each, must be within range Max 5 marks 2dp a must - For 1/I, all correct for 1 mark.
Length (m)	0.2	0.3	0.4	0.5	0.6	0.7	
Current (A)	0.60	0.52	0.44	0.40	0.35	0.29	
1/I (A ⁻¹)	1.67	1.92	2.27	2.50	2.85	3.44	
e) On grid attached.							As per graph 5 mks
f) -Interval (From students' graph) -Evaluation - Answer with units. $S = (2.5 - 3.5) \text{ V/A OR ohms}$							1 Mark 1 mark for eval. 1 mark 2 d.p
g) i) - All values of d including averages within (0.32 – 0.42) mm							1 Mark
ii) – Determination of area							1 mark
h) i) - implying $K/AE = \text{Slope}$ - determining K							1 mark 1 mark
ii) determination of Q from Y – intercept and E							1 mark
TOTAL							20 MARKS

On the grid provided, plot a graph of $1/I$ (y-axis) against L (5 marks)



- A meter rule
- 3 optical pins
- 2 small wooden blocks
- A stop watch
- A stand, boss and a clamp
- Some 6 pieces of Cello tape (4 cm)

WORKING							MARKING POINT
c) Allow range of +/- 0.1 for values of F							-For values of t, ½ max 3 marks -Correct eval. For T, all 1 mark 3dp -Correct eval. For T ² all 1 mark 4dp -Correct eval. For T ² X all 1 mark 2dp -Correct eval. For X ² all 1 mark NOTE: Mark last three rows accordingly even if values of t are wrong
Distance X (cm)	10	15	20	25	30	35	
Time t (s)	19.77	17.19	16.03	15.61	15.50	15.86	
T (s)	CORRECT EVALUATION						
T ² . (s ²)	CORRECT EVALUATION						
T ² X (s ² cm.)	CORRECT EVALUATION						
X ² . (cm ²)	CORRECT EVALUATION						
d) On grid attached.							As per graph 5 mks
e) Interval (From students' graph) Evaluation Answer with NO units. S = (0.038 – 0.048)							1 Mark 1 mark for eval. 1 mark 2 d.p
f) substitution Evaluation of q Ans. (9.0 – 10.0)							1 Mark of S and W 1 Mark 1 mark 1 d.p a must
g) substitution of Y- intercept in the equation Evaluation of p							1 mark 1 mark 2dp a must.
TOTAL							20 MARKS

