

232/3
 Physics
 PAPER 3
 END TERM 3 2025
 MARKING SCHEME

1. c) $K = 40.0 \pm 0.4\text{cm}$ ✓ $\frac{1}{2}$
 $t = 30.2 \pm 0.4\text{cm}$ ✓ $\frac{1}{2}$

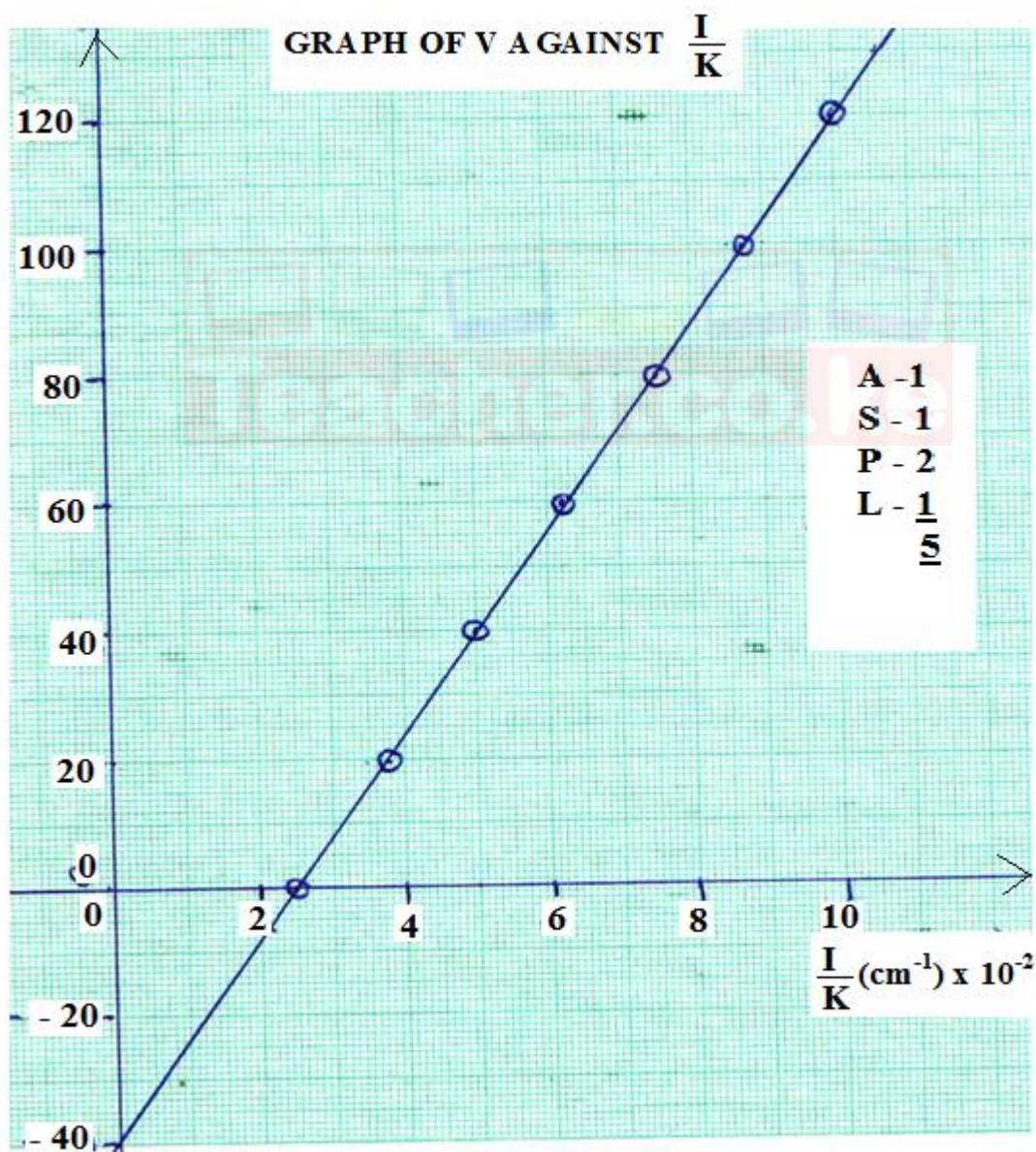
e)

Vol, $V(\text{cm}^3)$	0	20	40	60	80	100	120
Distance; K (cm)	40.0	26.6	20.0	16.1	13.4	11.5	10.0
$\frac{1}{K} (\text{cm}^{-1}) \times 10^{-2}$	2.5	3.76	5.00	6.21	7.46	8.70	10.0

K – row, 4 mks, All values $\pm 0.4\text{cm}$

$\frac{1}{K}$ – row, 2 mks, All values

f)



A – 1, well labelled with units

S- 1, Linear and appropriate

P – 2, All values

L – 1

g) Slope, $S = \frac{\Delta V}{\Delta \frac{1}{k}} = \frac{120-40(cm^3)}{(10-5) \times 10^{-2}(cm^{-1})} \checkmark$
 $= 1600cm^4$ with units $\checkmark$

h) (i) $S = \frac{50000t}{d} \checkmark$ For realising
 $\Rightarrow 1600cm^4 = \frac{5000 \times 30.2cm}{d} \checkmark$
 $d = \frac{50000 \times 30.2cm}{16002}$
 $= 943.75cm^{-3} \checkmark$

(ii) V – axis intercept = $\frac{1000m}{d} \checkmark$ for reading
 $-40 = \frac{-1000m}{943.75cm^{-3}} \checkmark$
 $m = \frac{943.75cm^{-3} \times 40}{1000}$
 $= 37.75 \checkmark$

Question 2.

L (cm)	L (m)	V	I (a)	$\frac{v}{I}$
100	1.00	1.45	0.04	
90	0.90	1.40	0.05	
70	0.70	1.35	0.08	
50	0.50	1.30	0.09	
40	0.40	1.25	0.12	
20	0.20	1.15	0.02	

Atleast 5 correct values of L (m) 1dp a must –

1mk

Decreasing value of v between (1.5 – 0.9) v 1 dp a must – ½ mk each max

(2½ mks)

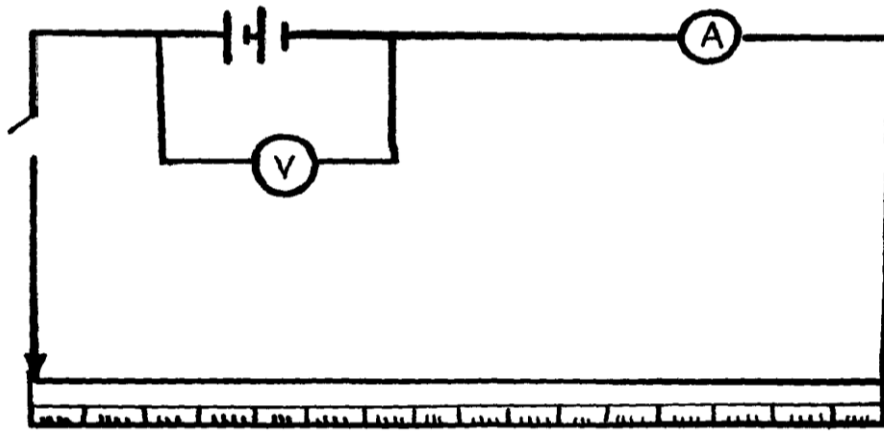
Increasing values of i between (0.02 – 0.4) a – 1 dp a must. ½ mk each

max 2½

Atleast 5 correct values of $\frac{v}{I}$ 2 dp a must – 1 mk

total 7mks

Iii) a)



arrangement of cells in series and voltage across with switch open.

1mk

B) e.m.f = (3.0 ± 0.2) 1 dp a must

1mk

iv)

- Both axes correctly labelled 1mk
- Simple + uniform scale 1mk
- Plotting 4 points correctly - $\frac{1}{2}$ mk each max 2mks
- A line with positive gradient passing through atleast 3 correctly plotted points. 1mk

v) NB No line slope

- correct intervals 1mk
- substitution 1mk
- evaluation (units a must) 2 dp – 1mk

vi)

- dmm 2dp a must $\frac{1}{2}$ mk
- d..... 2dp in standard form $\frac{1}{2}$ mk

vii)

- substitution of d and S – 1mk
- evaluation of h 3dp – 1mk