

232/3 PHYSICS (PRACTICAL) (2018)
KCSE Trial Exam

MARKING SCHEME

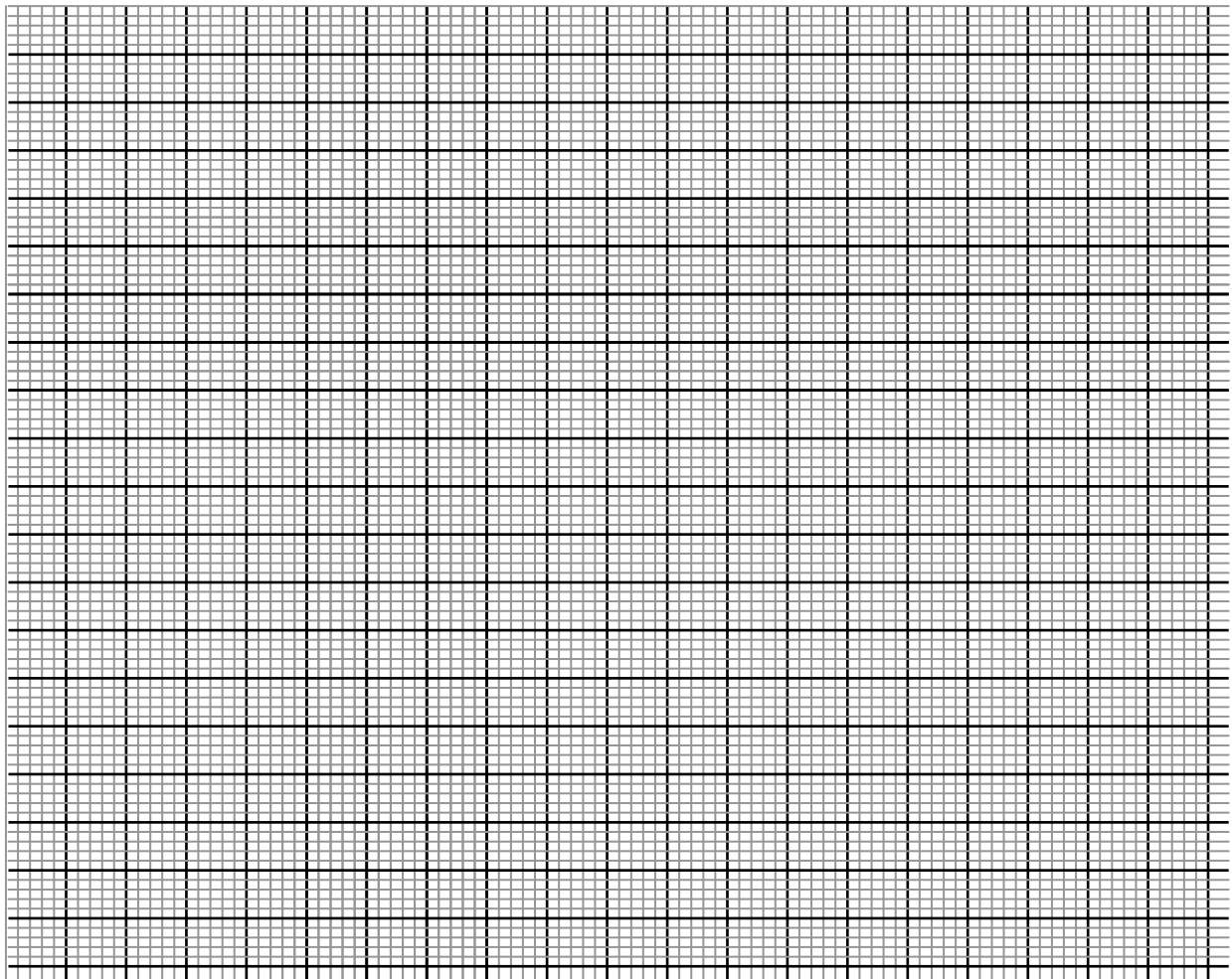
1.

a) Mass = 5.4g

bi)

Volume $v(\text{cm}^3)$	Height h (cm)
5	1.5
10	3
15	4.2
20	5.5
25	6.6
30	8
35	9
40	10.4
45	11.5
50	12.5

C i) graph



- ii) Slope = $25 - 10/6.6 - 3 = 4.1667 \text{ cm}^2$
 iii) $H = 15 \text{ cm}$
 iv) $L = 86.5 \text{ cm}$
 v) $V = 15(2 \times 0.815^2 - 5/2500) = 22.42 \text{ cm}^3$
 vi) $h_1 = 12.5 \text{ cm}$
 vii) $h_2 = 13.0 \text{ cm}$
 viii) $v_1 = 49 \text{ cm}^3$
 $v_2 = 51 \text{ cm}^3$
 $5.4/51 - 49 = 2.7 \text{ g/cm}^3$

2.

i°	$L(\text{cm})$	$L^2(\text{cm}^2)$	$1/L^2 (\text{M}^{-2})$	$\sin i^\circ$	$\sin^2 L$
15	6.3	39.69	0.0252	0.2589	0.0670
25	6.4	40.96	0.0244	0.4226	0.1786
35	6.7	44.89	0.0223	0.5736	0.3290
45	7.0	49.00	0.0205	0.7071	0.5000
55	7.3	53.29	0.0190	0.8192	0.6710

L - @ 1 mark each max – 5 marks -

 L^2 - 1 mark 1 $1/L^2$ - - 1 $\sin i$ - - 1 $\sin^2$ - - 1

(i) (b) Slope = $\frac{2.5 \times 10^{-3} \text{ cm}^{-2}}{-2.5 \times 10^{-2}} = -0.01 \text{ cm}^{-2}$ (3mks)

Intercept = $25.5 \times 10^{-3} \text{ cm}^{-2}$ (1mk)

(c) $\frac{25.5 \times 10^{-3}}{n^2} = 0.01$ (1mk)

$$n^2 = \frac{25.5 \times 10^3 \text{ cm}^{-2}}{0.01 \text{ cm}^{-2}}$$

$n = \left(\frac{25.5 \times 10^3}{0.01} \right)^{1/2} = \underline{\underline{1.597 \pm 0.1}}$ (1mk)

