CAMBRIDGE
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Cambridge IGCSE™

PHYSICS **0625/63**

Paper 6 Alternative to Practical **May/June 2024**

MARK SCHEME

Maximum Mark: 40

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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 [Turn over

Question	Answer	Marks
1(a)(i)	l = 6.2 (cm) w = 3.0 (cm) h = 2.4 (cm)	**1**
1(a)(ii)	V_A = 44.6 cm^3	**1**
1(b)	difficult to measure irregular dimensions / owtte	**1**
	repeat in several places (for each dimension) and take averages	**1**
1(c)	m_A = 80.4 (g) and ρ_A = 1.8	**1**
	unit g / cm^3	**1**
1(d)	W_B = 0.35 (N)	**1**
1(e)(i)	V_1 = 56 (cm^3)	**1**
1(e)(ii)	line of sight perpendicular / at eye level / at right angles	**1**
1(f)(i)	V_2 present and ρ_B = 1.9(4) (g / cm^3)	**1**
1(f)(ii)	suggestion supported by valid reason e.g.: • ρ_B as volume is measured directly • ρ_A as measuring cylinder is less precise	**1**

Question	Answer	Marks
2(a)	θ_R = 18 (°C)	**1**
2(b)(i)	any **two** suitable precautions e.g: • view scale reading perpendicularly • wait until readings stops rising • avoid thermometer touching beaker	**2**
2(b)(ii)	s, °C both correct	**1**
2(c)	statement matching readings in table	**1**
	comparison of temperature changes over 180 s, matching statement	**1**
2(d)(i)	x_1 = 0.12 and x_2 = 0.089	**1**
	unit °C / s	**1**
2(d)(ii)	explanation matching values of x_1 and x_2	**1**
2(e)	any **two** from: • volume(s) of water • same / size / material / surface area of beaker • room temperature	**2**

Question	Answer	Marks
3(a)	move screen slowly / back and forth	1
3(b)(i)	h_O = 2(.0) and h_I = 3.2	1
	both to nearest mm	1
3(b)(ii)	W = 0.63	1
3(c)	graph: • axes labelled with quantity and unit	1
	• appropriate scales (plots occupying at least ½ grid between plotted points)	1
	• plots all correct to ½ small square and precise plots	1
	• well-judged line and thin line	1
3(d)(i)	G present and triangle method seen on graph	1
3(d)(ii)	f in range 14.0 (cm) to 17.5 (cm) and to 2 or 3 significant figures	1
3(e)	values of h_I become very small / difficult to measure or greater % uncertainty	1

Question	Answer	Marks
4	MP1 **apparatus:** ammeter and voltmeter	1
	MP2 **circuit diagram:** correct circuit symbols shown in correct connection	1
	MP3 **method:** record diameter measure p.d and current repeat for new diameter	1
	MP4 **control variable:** any **one** from: • length of wire • material of wire • temperature of wire	1
	MP5 **table:** columns, with units, for diameter, p.d., current, (resistance) any variable mentioned must have correct units	1
	MP6 **analysis:** compare readings in the table to see if change in diameter produces change in resistance plot line graph (with axes specified)	1
	MP7 **additional point** any **one** from: • at least 5 sets of data taken • repeat for each value of independent variable and take average • 2nd appropriate control variable stated	1