Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/62**

Paper 6 Alternative to Practical **October/November 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)(i)	d = 5.0 (cm)	**1**
1(a)(ii)	D = 50 cm	**1**
1(a)(iii)	clear correct use of set-square AND vertical ruler	**1**
1(b)(i)	28.12	**1**
1(b)(ii)	1.406 / 1.41 / 1.4	**1**
	unit s / secs / seconds seen in **1(b)(i)** or **1(b)(ii)** at least once	**1**
1(c)	statement to match readings justification to include the idea of within (or beyond e.c.f.)	**1**
	the limits of experimental accuracy e.g. (very) close / almost equal	**1**
1(d)	final box ticked	**1**
1(e)	V, V, V, V, P, P all correct = 2 marks 4 or 5 correct = 1 mark Fewer than 4 correct = 0 marks	**2**

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Question	Answer	Marks
2(a)	24 (°C)	**1**
2(b)	34 (°C)	**1**
2(c)	30 (°C) AND °C seen once in **2(a)**, **2(b)** or **2(c)**	**1**
2(d)	to make sure that the temperature is the same throughout / to allow the water to mix and reach its final temperature faster	**1**
2(e)	heat loss (to surroundings) / time delays in transferring the water / did not wait for thermometer readings to stabilise / (initial) temperatures of the (cold / hot) <u>water</u> not the same	**1**
2(f)	insulation	**1**
2(g)	same starting temperature (of hot / cold water) / same room temperature	**1**
2(h)	recognisable measuring cylinder	**1**
	perpendicular viewing	**1**
	to bottom of mensicus	**1**

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Question	Answer	Marks
3(a)	Graph	
	axes correctly labelled	**1**
	suitable scales	**1**
	all plots correct to ½ small square	**1**
	good best-fit curve judgement thin, continuous line based on all the plots	**1**
3(b)(i)	2 points and straight line correct	**1**
3(b)(ii)	u_1 and v_1 read correctly to ½ small square	**1**
3(b)(iii)	correct (calculation of) *f* from candidate's values *f* value rounding to 14 – 16cm	**1**
3(c)	any **two** from: upside down less bright / brighter coloured edges different sizes	**2**
3(d)	any **two** from: darkened room / bright object object AND lens AND screen perp. to bench / vertical object and lens same height (from bench) move screen (**not** lens) slowly / backwards and forwards clamp rule / fix rule to bench	**2**

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Question	Answer	Marks
4	**method:** **MP1** measure length of band	**1**
	MP2 hang load, measure new length	**1**
	MP3 repeat with different thicknesses/widths	**1**
	control variable: **MP4** use same (original) length of band each time	**1**
	table: **MP5** table with columns for thickness, (load) and length / extension with units	**1**
	conclusion: **MP6** plot a graph of extension / length against thickness (for the same load) OR load against extension / length for different thicknesses OR comparison via a table e.g. compare extensions / lengths of different thicknesses for the same load	**1**
	one additional point: **MP7** use same load / same range of loads use at least 5 thicknesses / take at least 5 different readings to plot a graph show how to measure extension e.g. $l - l_0$ use same type / material of rubber band	**1**

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