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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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

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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**

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**

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**

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**