



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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2017 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

© IGCSE is a registered trademark.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **5** printed pages.

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 meniscus	1

Question	Answer	Marks
3(a)	Graph	
	axes correctly labelled	1
	suitable scales	1
	all plots correct to $\frac{1}{2}$ 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 $\frac{1}{2}$ small square	1
3(b)(iii)	correct (calculation of) f from candidate's values f value <u>rounding to</u> 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 <u>screen</u> (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