
PHYSICS

0625/62

Paper 6 Alternative to Practical

October/November 2017

MARK SCHEME

Maximum Mark: 40

Published

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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