



Cambridge IGCSE™

PHYSICS

0625/63

Paper 6 Alternative to Practical

May/June 2020

MARK SCHEME

Maximum Mark: 40

Published

Students did not sit exam papers in the June 2020 series due to the Covid-19 global pandemic.

This mark scheme is published to support teachers and students and should be read together with the question paper. It shows the requirements of the exam. The answer column of the mark scheme shows the proposed basis on which Examiners would award marks for this exam. Where appropriate, this column also provides the most likely acceptable alternative responses expected from students. Examiners usually review the mark scheme after they have seen student responses and update the mark scheme if appropriate. In the June series, Examiners were unable to consider the acceptability of alternative responses, as there were no student responses to consider.

Mark schemes should usually be read together with the Principal Examiner Report for Teachers. However, because students did not sit exam papers, there is no Principal Examiner Report for Teachers for the June 2020 series.

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

Cambridge International is publishing the mark schemes for the June 2020 series for most Cambridge IGCSE™ and Cambridge International A & AS Level components, and some Cambridge O Level components.

This document consists of **8** printed pages.

Question	Answer	Marks
1(a)(i)	$l = 15.0$ (cm)	1
	centre of weight at 25(.0) cm seen or implied / clear subtraction of 10.0 cm from candidate's value	1
1(a)(ii)	1.3 (N)	1
1(a)(iii)	ensure distances from bench at both ends are equal OR use set square between rule and stand OR align with known horizontal line (e.g. window ledge)	1
1(b)	graph: - axes labelled with quantity and unit - appropriate scales (plots occupying at least $\frac{1}{2}$ grid) - plots all correct to $\frac{1}{2}$ small square and precise plots - well judged line <u>and</u> thin line	1
1(c)(i)	F_0 correct from graph	1
1(c)(ii)	W_R in range 1.2 to 2.0	1
1(d)	hang load from cotton loop on metre rule <u>and</u> cotton can be placed on precise mark on metre rule	1

Question	Answer	Marks
2(a)(i)	correct voltmeter symbol in parallel with resistor	1
	correct ammeter symbol in series	1

Question	Answer	Marks
2(a)(ii)	$V_A = 2.4 \text{ (V)}$	1
	$I_A = 0.48 \text{ (A)}$	1
2(a)(iii)	correct calculation of $R_A = 5(.0) / \text{ecf}$	1
2(b)	correct unit for $R - \Omega$	1
2(c)	all R values to consistent 2 or consistent 3 significant figures	1
2(d)	statement matching results	1
	justification matching statement with <u>values</u> from results used, e.g. within limits of experimental accuracy	1
2(e)(i)	correct symbol for potentiometer	1
2(e)(ii)	can obtain average value / plot a graph	1

Question	Answer	Marks
3(a)(i)	$u = 4.0 \text{ (cm)}$ and $v = 8.6 \text{ (cm)}$	1
3(a)(ii)	$U = 20.0 \text{ (cm)}$ and $V = 43.0 \text{ (cm)}$	1
3(a)(iii)	$f_1 = 13.7$ and unit	1
3(a)(iv)	move screen backwards and forwards / slowly	1
3(b)(i)	$v = 3.5 \text{ (cm)}$ and $V = 17.5 \text{ (cm)}$	1
3(b)(ii)	$h_0 = 2.0 \text{ (cm)}$ and $h_1 = 0.8 \text{ (cm)}$	1
3(b)(iii)	$M = 0.4$ and no unit	1
3(b)(iv)	$f_2 = 12.5 \text{ (cm)}$	1

Question	Answer	Marks
3(c)	any one from: mark position of lens on holder clamp rule / place rule on bench ensure screen, lens and object all perpendicular view scale perpendicularly	1
3(d)(i)	difficult to measure height of image (accurately) as image is small	1
3(d)(ii)	use larger object / graph paper on screen OR mark top and bottom of image and measure later	1

Question	Answer	Marks
4	MP1 additional apparatus: <u>voltmeter</u> , <u>protractor</u> , metre rule	1
	MP2 control variable (one from): distance of lamp from solar panel height of lamp / height of solar panel brightness of lamp	1
	MP3 method (one from): measure angle between panel and stand / other fixed datum (switch on lamp) measure potential difference	1
	MP4 repeat for different angle	1
	MP5 table: appropriate columns with clear headings and units	1
	MP6 analysis: suitable analysis of readings, e.g. calculation of rate of change of potential difference with angle draw a suitable graph with correct axes stated	1

Question	Answer	Marks
4	MP7 additional point / precaution (one from): reading with only ambient light first / subtract ambient light reading make room dark fix protractor keep axis of solar panel and line of lamp perpendicular to each other at least five sets of data taken repeat each reading and take an average repeat for different distance of lamp	1