

Cambridge IGCSE™

PHYSICS

0625/32

Paper 3 Core Theory

May/June 2020

MARK SCHEME

Maximum Mark: 80

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 **10** printed pages.

Question	Answer	Marks
1(a)	(time =) $20 \div 50$	C1
	0.4 (s)	A1
1(b)(i)	measuring cylinder	B1
1(b)(ii)	$W = m \times g$	C1
	(W =) 0.21×10	C1
	2.1 (N)	A1

Question	Answer	Marks
2(a)	(s =) $d \div t$ OR $s = d \div t$ in any form	C1
	(average speed =) $30 \div 5.4$	C1
	5.6 (m / s)	A1
2(b)(i)	first section and third section horizontal straight lines	B1
	second section line with negative gradient	B1
	first section horizontal line at 16 m / s AND third section horizontal line at 13 m / s at correct times	B1
2(b)(ii)	(d =) $\frac{1}{2} \times (a + b) \times t$ OR area under graph	C1
	$\frac{1}{2} \times (24 + 30) \times 2.5$ OR $(24 \times 2.5) + (\frac{1}{2} \times 6 \times 2.5)$	C1
	67.5 (m)	A1

Question	Answer	Marks
3(a)	$P = F \div A$ in any form	C1
	$120 \div 0.5$	C1
	240 (N / cm ²)	A1
3(b)	Less (than)	B1
3(c)	elastic OR strain OR potential	B1

Question	Answer	Marks
4(a)	B C A	B2
4(b)	any three from: during first eight minutes temp rises (because) internal energy of water rises (from thermal energy input) during next five minutes temperature is constant / stays the same (because) internal energy does not rise (at boiling point)	B3

Question	Answer	Marks
5(a)(i)	normal	B1
5(a)(ii)	p	B1
5(a)(iii)	r	B1
5(a)(iv)	speed decreases	B1

Question	Answer	Marks
5(b)	reflects off flat surface at same angle (by eye)	B1
	passes through curved surface without deviation	B1
5(c)(i)	D – total internal reflection	B1
5(c)(ii)	E – dispersion	B1
5(c)(iii)	F – spectrum of visible light	B1

Question	Answer	Marks
6(a)(i)	reflects / does not allow transmission of	B1
	infrared / thermal radiation	B1
6(a)(ii)	heat loss by conduction cannot take place	B1
	heat loss by convection cannot take place	B1
	because particles are needed for conduction and / or convection	B1
6(b)(i)	non-metal	B1
6(b)(ii)	metals are good conductors of heat / non-metals are good insulators / poor conductors	B1

Question	Answer	Marks
7(a)(i)	top – visible light	B1
	bottom – microwaves	B1

Question	Answer	Marks
7(a)(ii)	any two from: transverse wave travel at same speed do not need a medium	B2
7(b)(i)	X-rays	B1
7(b)(ii)	infrared	B1
7(b)(iii)	microwaves	B1

Question	Answer	Marks
8(a)	vibrates	B1
	reflected	B1
	amplitude	B1
	frequency	B1
	matter	B1
8(b)	vibrations with higher frequency than sound	B1

Question	Answer	Marks
9(a)	any three from: use of plotting compass next to magnet mark point of compass needle move compass other side of dot align needle with dot put dot other side of needle and repeat start again from another position next to magnet	B3

Question	Answer	Marks
9(b)	any two from: no field lines crossing looping from N to S away from ends field lines straight out from ends	B2
	arrow(s) on field lines pointing N to S	B1

Question	Answer	Marks
10(a)(i)	increased	B1
	decreased	B1
10(a)(ii)	the same	B1
10(b)	correct voltmeter symbol	B1
	in parallel with battery	B1
10(c)	$R = V \div I$ in any form	C1
	$3(.0) \div 0.15$	C1
	20	A1
	Ω / ohms	B1

Question	Answer	Marks
11(a)	any two from: increase current increase magnetic field strength field more turns on coil	B2
11(b)	$(V_p / V_s) = (N_p / N_s)$ in any form	C1
	$N_s = (12 \div 240) \times 900$	C1
	45	A1

Question	Answer	Marks
12(a)(i)	6	B1
12(a)(ii)	8	B1
12(a)(iii)	6	B1
12(b)	changes to a different element / gains a proton	B1
12(c)(i)	lead	B1
12(c)(ii)	any one from: minimise time for handling maximise distance from source use of shielding prevent contamination	B1