



Cambridge IGCSE™

PHYSICS

0625/32

Paper 3 Core Theory

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MARK SCHEME

Maximum Mark: 80

Published

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This document consists of **14** printed pages.

Question	Answer	Marks
1(a)	1000 – 400	C1
	600 (m)	A1
1(b)	stationary / not moving / zero speed / at rest, etc.	B1
1(c)	CD	B1
	steep(est (gradient) OR larger distance in smaller time idea	B1
1(d)	(average speed =)(total) distance ÷ (total) time in any form	C1
	1000 ÷ 500	C1
	2(.0)	A1
	m / s	B1

Question	Answer	Marks
2(a)	any three from: (put some coins) on top of each other OR in a stack idea measure the (total) thickness (of stack) 10 or more coins thickness (of one coin) = total thickness / 'length' ÷ number of coins	B3
2(b)(i)	(D) = M ÷ V in any form	C1
	52.5 ÷ 5.4	C1
	9.7(2) (g / cm ³)	A1
2(b)(ii)	floats AND coin is less dense (than mercury) ora	B1

Question	Answer	Marks
3(a)	70 – 15	C1
	55 (N)	A1
3(b)	streamline / friction / drag / air resistance	M1
	<u>reduce</u> (owtte) friction / drag / air resistance	A1

Question	Answer	Marks
4(a)(i)	balance	B1
4(a)(ii)	ruler	B1
4(b)	mass = 5(.0) kg	B1
	(W =) $m \times g$ OR $5(.0) \times 10$	C1
	50 (N)	A1
4(c)(i)	240 (cm ²)	B1
4(c)(ii)	(P =) $F \div A$ in any form	C1
	$60 \div (20 \times 12)$ OR $60 \div 240$	C1
	0.25 (N / cm ²)	A1

Question	Answer	Marks
5(a)	any three from: mark 2 x's behind string AND join x's with a line suspend from different hole repeat step 1 owtte centre of mass is where lines cross	B3
5(b)	marked on line of symmetry approximately where navel located	B1
5(c)	A	M1
	lower <u>centre of mass</u> owtte	A1

Question	Answer		Marks
6(a)	<i>property</i>	<i>object</i>	
	<i>conductor</i>	copper wire OR aluminium foil OR iron nail	B1
	<i>insulator</i>	cotton cloth OR wooden block OR plastic strip OR paper bag OR glass rod	B1
	<i>non-magnetic</i>	<i>a wooden block</i>	B1
	<i>magnetic material</i>	iron nail	
	<i>can be charged by rubbing with a cloth</i>	plastic strip OR glass rod	
	6(b)	(liquid-in-glass) thermometer	
manometer		B1	
<u>measuring cylinder</u>		B1	

Question	Answer	Marks
7(a)	any three from: convection (currents) (candle) heats air (warm) air less dense (warm) air rises (rising / moving) air pushes on fan	B3
7(b)(i)	strip curved downwards	B1
7(b)(ii)	bimetallic strip curves upwards	B1
	bell rings OR switches circuit on owtte	B1

Question	Answer	Marks
8(a)(i)	hot / molten rocks	B1
8(a)(ii)	kinetic (to)	B1
	electrical	B1
8(b)(i)	Any two from: no sulphur dioxide OR acid rain produced no carbon dioxide / greenhouse gases produced OR no (contribution to) global warming no need to transport coal renewable (energy source) no fuel costs	B2
8(b)(ii)	locations limited / land instability / distribution costs high / water pollution / smaller energy output / rocks may cool (over time)	B1

Question	Answer	Marks
9(a)(i)	b	B1
9(a)(ii)	c	B1
9(b)	ray from lamp extended to mirror as straight line (by eye)	M1
	ray reflected to car B	A1

Question	Answer	Marks
10(a)(i)	(electric) current	B1
10(a)(ii)	tick in third box A_1 is equal to A_3	B1
10(b)(i)	resistors in parallel	B1
	connected to battery AND correct circuit symbol for battery	B1
10(b)(ii)	same brightness / if one fails the rest are still lit / lamps can be switched off independently / same p.d. across owtte	B1
10(c)(i)	potential divider / potentiometer	B1
10(c)(ii)	dimmer / change light output / intensity	B1
10(c)(iii)	move the slider	B1
	varies p.d. (across lamp)	B1

Question	Answer	Marks
11(a)	strong(er) magnet	B1
	move (magnet) more quickly / faster movement	B1
	more turns / coils (per unit length)	B1
11(b)(i)	(soft) iron	B1
11(b)(ii)	$V_p / V_s = N_p / N_s$ in any form	C1
	$(V_s =) 240 \times 50 / 1000$	C1
	12 (V)	A1

Question	Answer	Marks
12(a)(i)	gamma OR	B1
12(a)(ii)	alpha OR	B1
12(b)	same atomic number / Z / number of protons	B1
	different nucleon number / A / number of neutrons	B1
12(c)	idea of 2 half-lives	C1
	1 / 4	A1