



Cambridge IGCSE™

PHYSICS**0625/33**

Paper 3 Core Theory

October/November 2020

MARK SCHEME

Maximum Mark: 80

Published

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

Question	Answer	Marks
1(a)(i)	1000 + 500 OR 1500 OR 1500 – 1500 OR 1500 – their '1500' OR 1500 – 1000 OR 1500 – 500	C1
	0 / zero	A1
1(a)(ii)	2 nd box (speed stays the same)	B1
1(b)(i)	(15 + 38) = 53 (m)	B1
1(b)(ii)	reduced friction / wet / icy (conditions) / worn tyres tiredness / drugs / alcohol / higher speed / going down hill	B1

Question	Answer	Marks
2(a)(i)	$W = mg$ OR $W = 10 \times m$	C1
	12.5	A1
	kg	B1
2(a)(ii)	250×0.5 OR $X \times 125$	C1
	clockwise moment = anticlockwise moment	C1
	(X=) 1.0 (m)	A1
2(b)	air resistance / drag	B1

Question	Answer	Marks								
3(a)(i)	(gravitational) potential (energy)	B1								
3(a)(ii)	the same	B1								
3(b)	<table><tr><td>A child is sitting at the top of the stairs.</td><td></td></tr><tr><td>A picture is hanging on a wall.</td><td></td></tr><tr><td>A student is stretching a spring.</td><td>✓</td></tr><tr><td>A person is moving a chair.</td><td>✓</td></tr></table>	A child is sitting at the top of the stairs.		A picture is hanging on a wall.		A student is stretching a spring.	✓	A person is moving a chair.	✓	B1
A child is sitting at the top of the stairs.										
A picture is hanging on a wall.										
A student is stretching a spring.	✓									
A person is moving a chair.	✓									
3(c)	torch – light	B1								
	radio – sound	B1								
	fan - kinetic	B1								

Question	Answer	Marks
4(a)	any three from: pressure = force ÷ area weight or force distributed / spread or wtte (over) larger area (so) lower pressure (on the ground) (vehicle) doesn't sink into the mud owtte	B3
4(b)(i)	vacuum	B1
4(b)(ii)	atmospheric / air	B1
	pressure	B1
4(c)(i)	(pressure at hole 2 is) less (than that at hole 3) ora	B1
4(c)(ii)	water from top hole not travelling further than from middle hole	B1

Question	Answer	Marks
5(a)	arrangement: solid to 2 nd box liquid to 3 rd box gas to 1 st box } correct – 2 marks: 2 or 1 correct – 1 mark	B2
	movement: solid to 4 th box liquid to 2 nd box gas to 3 rd box } correct – 2 marks: 2 or 1 correct – 1 mark	B2
5(b)(i)	move faster / speed up / more (kinetic) energy or wtte	B1
5(b)(ii)	(pressure) increases	B1
5(c)(i)	(temperature) scale	B1
	bulb OR reservoir	B1
5(c)(ii)	mercury	B1
5(c)(iii)	(liquid / mercury / alcohol) expands	B1
	liquid level / meniscus moves along tube / scale	B1

Question	Answer	Marks
6(a)	conduction from the element to the water	B1
	<u>convection</u>	B1
	warmer water less dense (than colder water) or ra	B1
	<u>warm</u> water rises / <u>cool</u> water falls	B1
6(b)(i)	dull black / can A	M1
	(dull black) better radiator / good radiator better emitter / gives out more radiant heat / emits more infra-red / loses more energy by radiation	A1
6(b)(ii)	Any two of following pairs: lag / wrap in (named) insulator / cotton wool / polystyrene reduces heat lost by conduction cover in foil reduces heat lost by radiation add lid reduces heat loss by convection / evaporation	B4

Question	Answer	Marks
7(a)	electromagnetic	B1
	seven	B1
	red	B1
7(b)(i)	B	B1
7(b)(ii)	C	B1

Question	Answer	Marks
8(a)	1 st box - thermistor	B1
	2 nd box – fuse	B1
	3 rd box -lamp	B1
8(b)(i)	$V = I \times R$	C1
	(p.d. =) 0.30×20	C1
	(p.d. =) 6.0 (V)	A1
8(b)(ii)	voltmeter	B1
8(b)(iii)	(voltmeter) in parallel with resistor or supply correct symbol for voltmeter	B1

Question	Answer	Marks
9(a)	current (in coil / circuit)	B1
	magnetic (effect of current)	C1
	coil OR soft iron rod / bar (becomes a electro)magnet	A1
9(b)(i)	any four from: residual magnetism circuit broken OR no current in electromagnet / circuit electromagnet switched off / no longer attracts the (pivoted) arm (pivoted) arm falls current in bell OR alarm / bell circuit complete	B4
9(b)(ii)	bell rings	M0
	(because) electromagnet switched off / no longer attracts the (pivoted) arm / (pivoted) arm falls	B1

Question	Answer	Marks
10(a)	wire or rod positioned between magnetic poles	B1
	diagram or description of working circuit	B1
	current in circuit OR switch circuit on	B1
	wire / rod moves out	B1
10(b)	use resistor in series / only allow current to flow for a short time / use a smaller current / use a smaller p.d. / reduce the pd of the power supply	B1

Question	Answer	Marks
11(a)	P AND R	B1
	same number of protons	B1
11(b)(i)	alters genes / DNA OR kills cells OR (cell) mutations OR cancer	B1
11(b)(ii)	stand behind a screen / wear a lead apron	B1
	screen / apron absorbs X-rays OR X-rays cannot penetrate screen / apron	B1
11(c)(i)	beta / β	B1
11(c)(ii)	background (radiation)	B1