

Cambridge IGCSE™

PHYSICS	0625/32
Paper 3 Core Theory	October/November 2022
MARK SCHEME	
Maximum Mark: 80	

Published

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Question	Answer	Marks
1(a)(i)	accelerating / increasing speed	B1
1(a)(ii)	50 (m / s)	B1
1(a)(iii)	C	B1
1(a)(iv)	150 (m)	A3
	5×30	(C2)
	(distance =) area under graph	(C1)
1(b)(i)	friction / air resistance / drag	B1
1(b)(ii)	number <u>greater</u> than 0 AND <u>smaller</u> than 750 (N)	B1
1(b)(iii)	750 (N)	B1
1(c)	75 (kg)	A3
	$750 \div 10$	(C2)
	$W = mg$ OR $(m =) W \div g$ OR $W \div 10$ in any form	(C1)

Question	Answer	Marks
2(a)(i)	(mercury / U-tube) manometer	B1
2(a)(ii)	160 (mm)	A2
	242 – 82	(C1)
2(b)	920 (mm of mercury)	B1
2(c)	density (of water) too small / manometer would be too high / big owtte	B1
2(d)	levels at same height	B1

Question	Answer	Marks
3(a)(i)	steam above pure boiling water (at standard atmospheric pressure)	B1
3(a)(ii)	<u>melting ice</u> (made from pure water)	B1
3(a)(iii)	calibration owtte / <u>scale</u> / idea of increased accuracy	B1
3(b)(i)	expansion / contraction	B1
3(b)(ii)	<u>length</u> / <u>resistance</u> / <u>e.m.f</u>	B1

Question	Answer	Marks
4(a)(i)	evaporation	B1
4(a)(ii)	any three from the following: at the surface more energetic molecules escape (from liquid) out (as they) overcome / break forces / bonds (between molecules) (liquid (molecules) →) gas / vapour (molecules)	B3
4(b)	any two pairs (surround container with) insulation / lagging / cotton wool or similar – conduction change material of cup to better insulator – conduction (surround container with) foil / silver / (paint) shiny white – radiation (surround container with) vacuum – conduction OR convection lid – evaporation / convection	B2

Question	Answer	Marks
5(a)(i)	S	B1
5(a)(ii)	Q	B1
5(b)	transverse	B1
5(c)	(number of) cycles / vibrations / waves per unit time / second	B1
5(d)(i)	gamma / γ (rays) on lhs	B1
	ultraviolet / uv (rays) between X rays and visible	B1
5(d)(ii)	the same (speed)	B1
5(e)(i)	infrared	B1
5(e)(ii)	microwaves	B1

Question	Answer	Marks
6(a)(i)	<u>normal</u> (line)	B1
6(a)(ii)	correct angle clearly indicated	B1
6(a)(iii)	angle of incidence = angle of reflection	B1
6(b)	same size	B1
	upright	B1
6(c)(i)	single ray with correct refraction in glass	B1
	emergent ray with correct refraction	B1
6(c)(ii)	<u>refraction</u>	B1

Question	Answer	Marks
7(a)(i)	electro(magnet)	B1
7(a)(ii)	switch on and off / can control its strength	B1
7(a)(iii)	1 increase current / emf / supply voltage	B1
	2 more turns (on coil)	B1
7(a)(iv)	scrap yard / metal separators / (door / alarm)bell / buzzers / relay / motor / MRI scanners / (magnetic) locks / (loud)speakers	B1
7(b)(i)	steel cannot be temporary magnet OR steel (will be) permanently magnetised owtte	B1
7(b)(ii)	not work / reduced strength owtte	B1

Question	Answer	Marks
8(a)	ammeter, battery and test wire in complete series circuit	B1
	voltmeter in parallel with AB	B1
	correct circuit symbols for ammeter AND voltmeter	B1
8(b)	14	A3
	$1.56 \div 0.112$	(C2)
	(R =) $V \div I$ in any form OR $V = I \times R$	(C1)
	Ω / ohm(s)	B1

Question	Answer	Marks
9(a)	alternating (current)	B1
9(b)	step-up	B1
9(c)	(soft) iron	B1
9(d)	40 (V)	A3
	(V_S =) $800 / 200 \times 10$	(C2)
	$V_P / V_S = N_P / N_S$ in any form	(C1)
9(e)	zero	B1

Question	Answer	Marks
10(a)(i)	1 <u>increase</u> the current / pd / emf / voltage (of cell)	B1
	2 <u>stronger</u> magnet	B1
10(a)(ii)	reverse battery OR reverse current (direction) OR reverse magnetic field owtte	B1
10(b)	3 or more correct lines	B1
	direction from N to S indicated	B1

Question	Answer	Marks
11(a)(i)	neutron	B1
11(a)(ii)	electron	B1
11(a)(iii)	14	B1
11(b)	electron	B1
11(c)	17 400	A2
	16000 – 8000 – 4000 – 2000 OR 3 half lives	(C1)