

Cambridge IGCSE™

PHYSICS**0625/22**

Paper 2 Multiple Choice (Extended)

February/March 2026

MARK SCHEME

Maximum Mark: 40

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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This document consists of **3** printed pages.

Question	Answer	Marks
1	C	1
2	D	1
3	B	1
4	A	1
5	C	1
6	C	1
7	A	1
8	D	1
9	D	1
10	A	1
11	C	1
12	C	1
13	D	1
14	B	1
15	D	1
16	A	1
17	D	1
18	B	1
19	B	1
20	C	1
21	A	1
22	C	1
23	B	1
24	B	1
25	A	1
26	B	1
27	C	1
28	C	1

Question	Answer	Marks
29	B	1
30	D	1
31	D	1
32	B	1
33	B	1
34	C	1
35	A	1
36	C	1
37	C	1
38	A	1
39	B	1
40	D	1

Paper 4



Cambridge IGCSE™

PHYSICS

0625/04

Paper 4 Theory (Extended)

For examination from 2023

MARK SCHEME

Maximum Mark: 80

Specimen

This document has **12** pages. Any blank pages are indicated.

Question	Answer	Marks
1(a)	mention of gradient of graph at $t = 30$ s OR tangent drawn at $t = 30$ s and triangle drawn OR values of t and v taken from graph	C1
	$a = \frac{\Delta v}{\Delta t}$ OR calculation shown	C1
	acceleration in range 0.30 to 0.45 m / s ²	A1
1(b)	acceleration less / at a slower rate	B1
	less driving force OR greater resistive force / friction / air resistance / drag AND resultant force less	B1
1(c)	area under graph / area under line	C1
	distance = $(20 \times 40) + (\frac{1}{2} \times 40 \times 10)$ OR $\frac{1}{2} \times (30 + 20) \times 40$	C1
	1000 m	A1

Question	Answer	Marks
2(a)	force	B1
	impulse	B1
2(b)(i)	$(p =) mv$ OR 0.046×65	C1
	3.0 kg m / s OR 3.0 N s	A1
2(b)(ii)	$(F =) \frac{m(v-u)}{t}$ OR $\frac{3.0}{0.00050}$ OR $a = \frac{(v-u)}{t}$ and $F = ma$ or $\frac{0.046 \times 65}{0.00050}$ or $0.046 \times 130\,000$	C1
	6000 N OR 6000 N	A1
2(b)(iii)	elastic (energy) OR strain (energy)	B1

Question	Answer	Marks
3(a)(i)	nuclear fusion	B1
3(a)(ii)	nuclei combine / join together	B1
3(b)	small nuclei to larger nuclei OR hydrogen to helium (in some way) OR loss of mass any suitable resource, e.g. fossil fuels; hydroelectric; wave; wind NOT geothermal, nuclear renewable OR not (according answer) AND matching explanation	B1 M1 A1
3(c)	any two advantages from: no polluting gases / quiet / low maintenance / can be placed on roofs / clean / cheap to run any two disadvantages from: intermittent supply / unattractive / takes up space / uses land / d.c. output	B2 B2

Question	Answer	Marks
4(a)	atoms collide with wall (and rebound) OR atoms rebound from wall (atoms) undergo change of momentum force on wall = (total) rate of change of momentum (of atoms) OR = change of momentum (of atoms) per second OR = change of momentum (of atoms) / time	B1 C1 A1
4(b)(i)	fewer atoms per unit volume OR density of gas less rate of collision (with walls of balloon) decreases OR fewer collisions per unit area	B1 B1
4(b)(ii)	$PV = \text{constant}$ OR $P_1 V_1 = P_2 V_2$ OR $(P_2 =) \frac{P_1 V_1}{V_2}$ OR $\frac{1.0 \times 10^5 \times 9.6}{12}$ $8.0 \times 10^4 \text{ Pa}$	C1 A1

Question	Answer	Marks
5(a)	<i>arrangement:</i> Ice: in lattice / regular / arranged / orderly / fixed in place Water: random / irregular / not arranged / not orderly <i>motion:</i> Ice: vibrate Water: move (around) or slide over each other	B2

Question	Answer	Marks
5(b)(i)	$d = \frac{m}{V}$ in any form OR ($m =$) Vd OR $1800 \times 0.025 \times 920$	C1
	41 000 kg	A1
5(b)(ii)	$(\Delta E =) cm\Delta\theta$ OR $2.1 \times 10^3 \times 41\,000 \times 3.5$	C1
	3.0×10^8 (J)	A1

Question	Answer	Marks
6(a)(i)	any two rays that start at the top of the image from: - seems to come from F_1 to lens and emerges paraxially - passes through centre of lens undeviated - paraxial to the lens and passes through F_2 two correct rays traced back and image indicated	M2
6(a)(ii)	any two of: enlarged / inverted / real underlined	A1
	enlarged AND inverted AND real underlined	B1
6(b)	refracted ray in prism below yellow ray AND above normal	B1
	emergent ray diverging away from the yellow ray AND outside of prism	B1

Question	Answer	Marks
7(a)	330–350 m / s	B1
7(b)	$v = f\lambda$ OR ($f =$) $\frac{v}{\lambda}$ OR $\frac{(a)}{0.022}$	C1
	Correct answer: e.g. 330 m / s gives 15 000 Hz	A1
7(c)	use of transducer to send and receive pulses of ultrasound	B1
	(display used to determine) time for echo of pulse to return from front AND back of bubble	B1
	use of speed of sound in the metal	B1
	use of distance = speed $\times$ time to calculate position and size	B1

Question	Answer	Marks
8(a)	$R_S = R_A + R_B$ in any form OR $(R_S =) R_A + R_B$ OR $(R_S =) 4 + 8$	C1
	$(R_S =) 12 (\Omega)$	C1
	$(R_P =) \frac{1}{\left(\frac{1}{R_S} + \frac{1}{R_C}\right)}$ in any form	C1
	OR $(R_P =) \frac{R_S R_C}{(R_S + R_C)}$ OR $(R_P =) \frac{1}{\left(\frac{1}{12} + \frac{1}{6}\right)}$ OR $(R_P =) \frac{(6 \times 12)}{18}$	
8(b)	$(R_P =) 4.0 \Omega$	A1
	$V_8 = \text{supply } V \times \left(\frac{8}{12}\right)$ OR $= 24 \times \left(\frac{8}{12}\right)$	C1
	$(V_8 =) 16 \text{ V}$	A1
	OR alternative route $I_8 = \frac{\text{supply } V}{12}$ OR $= \frac{24}{12}$ OR $= 2 \text{ (A)}$	C1
	$(V_8 = 2 \times 8 =) 16 \text{ V}$	A1
Question	Answer	Marks
9(a)	ball gets –ve charge (from –ve plate)	B1
	–ve(ly charged ball) attracted to +ve / repelled from –ve	B1
9(b)	particles: electrons	B1
	direction: from left to right (through ammeter)	B1

Question	Answer	Marks
9(c)	$Q = It$ in any form OR $\frac{Q}{t}$ words, numbers, symbols	C1
	correct use of $f = 4 \text{ Hz}$ OR $T = 0.25 \text{ s}$ i.e. $8.5 \times 10^{-10} \times 4$ OR $\frac{8.5 \times 10^{-10}}{0.25}$	C1
	$(I =) 3.4 \times 10^{-9} \text{ A}$	A1

Question	Answer	Marks
10(a)(i)	${}_{93}^{237}\text{Np}$	B1
	${}^4_2\alpha$	B1
10(a)(ii)	gamma and beta will not produce enough ions / ion pairs per cm	B1
10(b)	(No of Am atoms remaining = $8 \times 10^{14} - 6 \times 10^{14}$) = 2×10^{14}	C1
	4×10^{14} (Am atoms remain after 470 yrs or 1 half-life)	C1
	$(2 \times 10^{14}$ Am atoms remain after) 940 yrs or 2 half-lives	A1

Question	Answer	Marks
11(a)	hydrogen gas in stellar cloud / nebula pulled together by gravity	B1
	temperature of hydrogen increases AND a protostar is formed	B1
	nuclear fusion begins and outward force from this reaction balances inward force of gravity	B1
11(b)	any three from: microwave radiation is observed at all points in space around the Earth o.w.t.t.e. radiation was produced when the Universe was formed this radiation has expanded into the microwave region of the electromagnetic spectrum this is evidence that the Universe expanded	B3

Question	Answer	Marks
12(a)	$\frac{N_s}{N_p} = \frac{V_s}{V_p} \text{ in any form OR } (N_s =) \frac{N_p \times V_s}{V_p} \text{ OR } \frac{8000 \times 6}{240}$	C1
	200	A1
12(b)	$I_p V_p = I_s V_s \text{ in any form OR } (I_p =) \frac{I_s \times V_s}{V_p} \text{ OR } \frac{2.0 \times 6}{240}$	C1
	0.050 A	A1