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Examiners' report

A LEVEL

PHYSICS B (ADVANCING PHYSICS)

OCR Level 3 Advanced GCE in Physics B (Advancing Physics)

H557

For first teaching in 2015

H557/02 Summer 2025 series

Contents

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. A selection of candidate responses is also provided. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from Teach Cambridge.

Paper 2 series overview

Paper 2 – Scientific literacy in physics is a synoptic paper that includes questions on an Advance Notice Article. The three questions in Section A are of medium length, usually contributing a total of around 30 marks each to the paper. Section B comprises three longer questions, including a Level of Response question. Section C is based on the Advance Notice Article and includes short and long questions and a Level of Response question.

The Advance Notice Article information focused on the development of microphones and some of the physics behind sound recording. As always, the article gave candidates and teachers some idea of the areas of physics that could be tested but the section also included questions based on other areas of the course. It was clear that many centres prepared the candidates thoroughly for the questions on the Advance Notice Article.

In this series a higher proportion of candidates found explanatory tasks challenging whereas the quality of mathematical and arithmetical work was generally of a similar standard to previous series. There was little evidence of candidates running out of time in the examination although some candidates did not make any response on a number of questions.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
• showed full working and in arithmetical questions and in algebraic responses • used technical vocabulary with precision • drew diagrams/tangents with care and attention to detail • used ideas central to the specification when answering questions in novel contexts • combined an understanding of different areas of the course to approach synoptic questions.	• did not use standard techniques for finding gradients • did not show complete working in mathematical questions or in algebraic analysis • showed poor understanding of technical vocabulary • showed poor recall of factual content • did not make connections between ideas from different parts of the specification • did not complete their arguments in written explanations.

Section A overview

Section A comprises three questions of about ten marks each. In this examination, the questions focused on materials, field strength and ionisation, and radioactive decay linked to time dilation. Each question focused on more than one area.

Question 1 (a)

1 This question is about measuring the sizes of atoms and using the structure of materials on a microscopic scale to explain large-scale properties.

(a) **Fig. 1** shows an image of a sheet of gold atoms. Use the image to determine the radius of a gold atom. Explain your choice of the number of significant figures in your answer.

Fig. 1

Image of atoms removed due to third party copyright restrictions

radius = ... m

....

.... **[3]**

Most candidates gained marks from this question. The majority measured the distance between a number of atoms as expected. However, a significant proportion either ignored the gaps between the atoms in the image and/or gave an answer that was the diameter of the atom rather than the radius. The majority of candidates gave correct reasons for their choice of the number of significant figures.

Question 1 (b) (i) and (ii)

(b) An estimate of the radius of a gold atom can be calculated from the density of gold.

One mole of gold contains 6.02×10^{23} atoms.

The mass of one mole of gold is 0.197 kg. The density of gold is $19\,320\,\text{kg}\,\text{m}^{-3}$.

(i) Show that there are approximately 6×10^{28} gold atoms m^{-3}.

[2]

(ii) The manner in which the gold atoms are packed together means that only 74% of the volume of a sample of gold is taken up by the atoms themselves. Use this percentage and your answer from **(i)** to calculate the radius of a gold atom.

Assume that gold atoms are spherical.

radius of atom = ... m **[2]**

Nearly all candidates gained both marks for part (b) (i). Part (b) (ii) proved more challenging. Many candidates thought that the packing suggested the radius of the atom was larger than would be calculated if all the volume was taken up by the atoms, rather than 74%.

Question 1 (c)

(c) Images of arrangements of atoms in a metal sometimes reveal **dislocations** in the microscopic structure. Describe what dislocations are and how the presence of dislocations changes the properties of the metal.

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.... **[3]**

There were many excellent responses to this question which showed good use of technical vocabulary and an understanding of the links between the microscopic structure and macroscopic properties of materials. Less successful responses showed a confusion between the movement of dislocations and crack propagation.

Question 2 (a) (i) and (ii)

2 An alpha particle of kinetic energy 5.4 MeV produces 4.4×10^6 ions per metre in dry air. It transfers all its kinetic energy over 0.035 m.

(a)

(i) Show that the average energy to remove an electron from a molecule (ionisation energy) in air is less than 6×10^{-18} J.

[2]

(ii) A free electron in air travels about 700 nm between collisions with molecules. Use your answer to **(a)(i)** to calculate the strength of a uniform electric field required to give an electron sufficient kinetic energy to ionise molecules in air.

Assume that the electron accelerates from rest for 700 nm.

field strength = ... V m^{-1} **[2]**

Question 2 (a) (i) is a straightforward calculation which the majority of candidates answered clearly and accurately. Part (ii) was more challenging and there was evidence that some candidates did not read the stem of the question with enough care and did not make the link between the energy required to ionise a molecule and the field strength. The majority of correct responses considered the energy transferred from the field, as in the mark scheme, but some used the equations of motion in their reasoning.

Question 2 (a) (iii)

(iii) Explain why the number of ions formed per second will initially rise at increasing rate after the first ionisation event.

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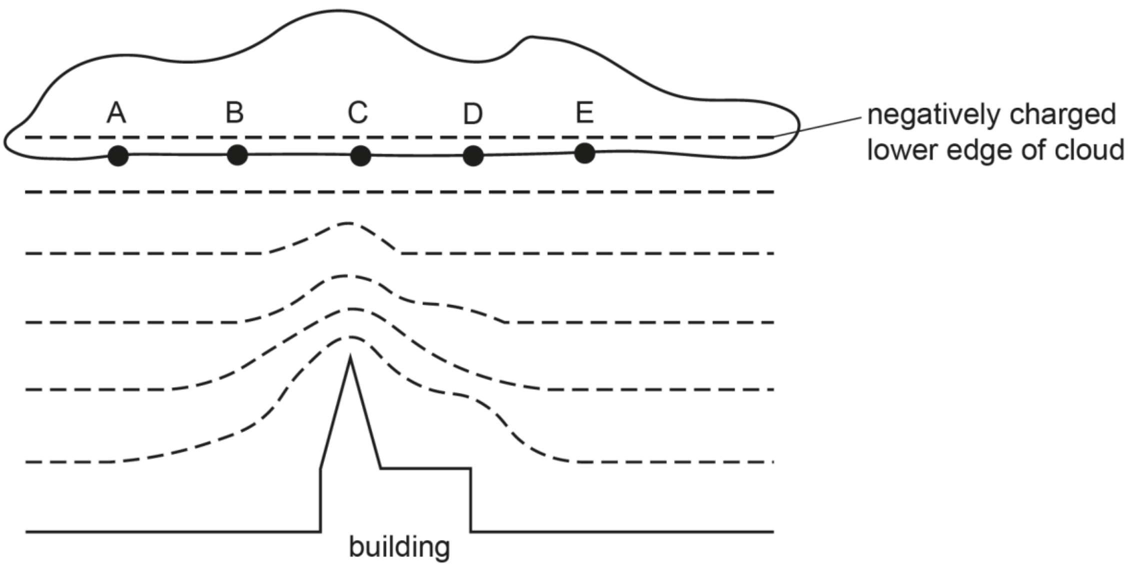
.... **[2]**

Weaker responses focused on alpha particles rather than electrons and only the stronger responses considered newly released electrons accelerating in the field and producing further ionisations.

Question 2 (b) (i)

(b) **Fig. 2** is a representation of a thundercloud above a flat landscape with a tall building. The dotted lines represent equipotential lines with equal potential differences between each line.

Fig. 2



The surface of the ground and the building are at zero potential.

(i) Draw field lines linking the points on the bottom of the cloud marked A to E to points of zero potential. **[2]**

Many candidates seemed unaware that field lines cross equipotential lines at right angles. A significant proportion did not draw direction arrows on the field lines.

Misconception

?

Many candidates suggested that the direction of the electric field is from negative to positive. This may have been because the question states that the ground and buildings are at zero potential.

Question 2 (b) (ii)

(ii) State and explain where the force on free electrons will be the greatest in the region between the zero potential surface and the lower edge of the cloud.

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....

.... **[2]**

Candidates sometimes did not gain both marks for this question because their responses were not precise enough. A common response was 'between the top of the building and point C' which is too vague.

Misconception

?

Some candidates assumed that the strength of the field will always be greatest nearest to the charge – not differentiating between the field due to a point charge and the situation described in the question.

Question 3 (a) (i) and (ii)

3 This question is about radioactive decay and time-dilation when bodies move at near-light speeds.

A radioisotope thermal generator (RTG) uses the decay of plutonium-238 (Pu-238) to generate electrical power.

In a science fiction story, an RTG provides 3.50×10^{4} W to the living quarters of a spaceship when the spaceship is launched.

(a)
(i) Show that the initial activity of the plutonium source is about 4×10^{16} Bq.

Energy released in one decay of Pu-238 = 8.96×10^{-13} J

[1]

(ii) Calculate the initial mass of Pu-238 in the generator.

Decay constant of Pu-238 = $2.48 \times 10^{-10}\,s^{-1}$

Mass of one plutonium-238 atom = 3.95×10^{-25} kg

mass = ... kg **[2]**

Most candidates handled these two calculations correctly and gained all the marks available.

Question 3 (b) (i)

(b)

(i) Show that the power output of a **stationary** RTG will have fallen to about 72% of its original value after 42 years.

Initial power of RTG = 3.50×10^4 W

[2]

This calculation was accurately performed by the majority of candidates.

Assessment for learning

Many responses gained both marks by calculating the power after 42 years and finding the percentage change. They did not use the fact that the power is proportional to the activity of the sample, allowing the percentage change to be found from the ratio of activities, given by $\frac{A}{A_0} = e^{-\lambda t}$.

Question 3 (b) (ii)

When the spaceship is launched a radio signal is sent to WST-A, a planet 30 light years away. The spaceship arrives at WST-A 12 years after the radio signal is detected at the planet.

(ii) Calculate the average velocity of the spaceship during its 42-year journey.

average velocity = ... $\mathrm{m\,s^{-1}}$ **[1]**

This question was answered correctly by the majority of candidates.

Question 3 (b) (iii)

(iii) Explain by using relevant calculations, why the power output of the RTG when the spaceship lands on WST-A is approximately 79% of its value at launch. Assume that the spaceship travels at constant velocity throughout the journey.

[4]

This is a more challenging calculation as it requires an understanding of the mathematics of time dilation and radioactive decay. Confident candidates showed clear and accurate working. Most responses went through the process of calculating the new power, similarly to the method used by many in part (b) (i). Candidates who did not score full marks could nonetheless gain credit for calculating the time 'experienced' by the moving source.

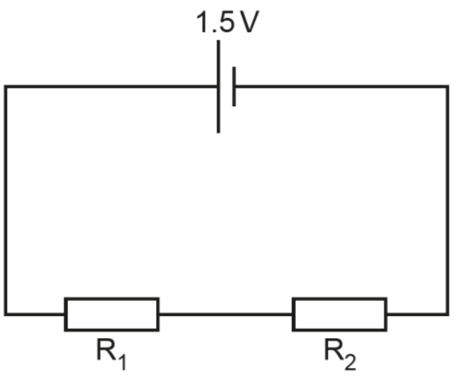
Section B overview

As usual, the three questions in Section B are longer than those of the first section and give more scope for extended writing. In this session the questions covered sensing, the relationship between gravitational and electrical fields and Boyle's Law.

Question 4 (a) (i)

4 This question is about a temperature sensor. **Fig. 4.1** shows a potential divider circuit.

Fig. 4.1



(a) The e.m.f. of the cell is 1.5 V. The cell has negligible internal resistance. The potential difference across R_1 is 0.4 V.

(i) Explain the difference in the meaning of the terms *e.m.f.* and *potential difference*.

....

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.... **[2]**

Only the stronger responses to this question used the correct technical vocabulary and few compared energy transferred to the charge in the cell and energy transferred from the charge as a potential difference (in this case across R_1).

Misconception

Many responses described e.m.f. as the *force* which drives the current around the circuit,.

Question 4 (a) (ii)

(ii) R_1 has a resistance of 30 Ω. Calculate the resistance of R_2.

resistance = ... Ω **[2]**

This relatively simple calculation proved accessible to most candidates.

Question 4 (b) (i)

(b) A student sets up the circuit shown in **Fig. 4.2** to calibrate a thermistor to measure the temperature of a baby bath.

Fig. 4.2

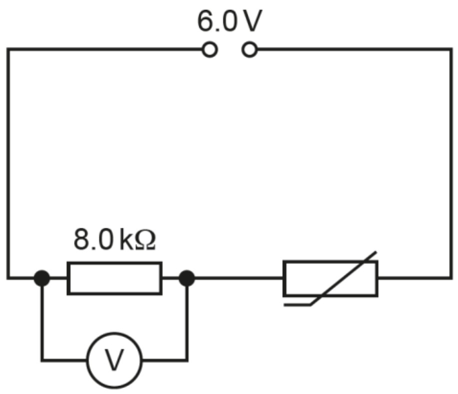
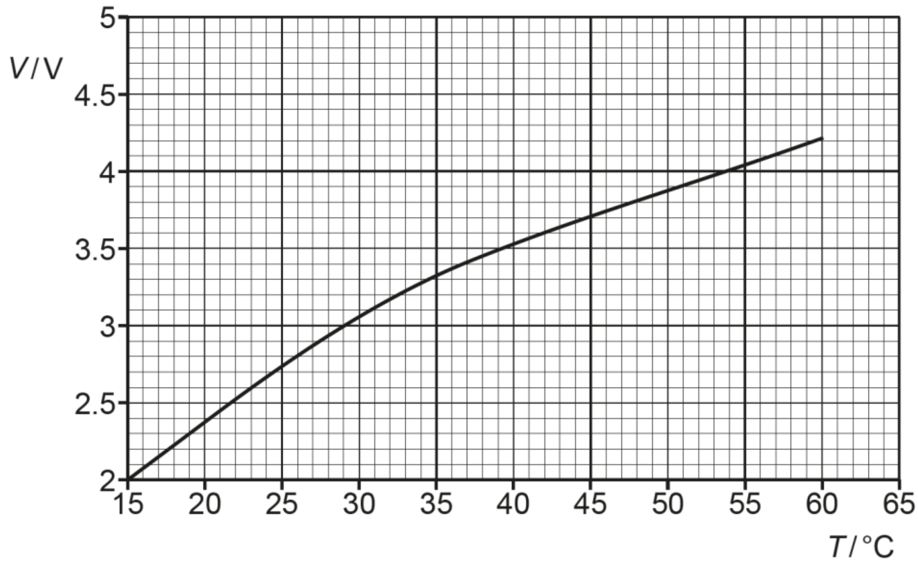


Fig. 4.3 shows how the p.d. across the 8.0 kΩ resistor varies with the temperature of the thermistor.

Fig. 4.3



(i) Describe an experimental method that could be used to obtain such a calibration curve. Give **one** possible source of experimental uncertainty and suggest how it can be reduced.

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.... **[3]**

Many candidates missed opportunities to gain marks in this question by not including sufficient information. For example, some responses did not name the instrument used to measure temperature or the method used to change the temperature of the liquid. Similarly, the 'temperature measurement' was sometimes cited as an area of uncertainty, which is missing detail.

Question 4 (b) (ii)*

(ii)* The ideal temperature for a baby bath is 37 °C. The voltmeter reads to the nearest 0.01 V. The resistance of the thermistor varies from approximately 13 kΩ to 3 kΩ over the temperature range.

Calculate the sensitivity **and** resolution of the temperature sensor at 37 °C. Explain the effect of changing the value of the fixed resistor to 80 kΩ on the sensitivity of the sensor. You may use calculations in your explanation.

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.... **[6]**

Candidates generally found discussing sensitivity and resolution challenging - concepts which form part of specification section 2 (b) (ii). The relation between the resolution of an instrument and sensitivity was particularly confused. Candidates were stronger in discussing the effect of changing the value of the fixed resistor, with many responses suggesting that the fixed resistor value should be in the middle of the resistance range of the thermistor to give the greatest sensitivity – and showing through calculations why this is the case.

Exemplar 1

Sensitivity = gradient of graph = $\frac{4.6-2.5}{65-15} = 0.042\,V\,°C^{-1}$

Resolution: Smallest change in V = 0.01 V

0.01 V corresponds to a change in T of

$\frac{0.01}{0.042} = 0.238°C$ based on the sensitivity at 37°C

$V_{out} = \frac{R_{Fixed}}{R_{Fixed} + R_{Therm}} V_{in}$ ~~At 37°C, V_{out} = 3.4 V with~~

80 kΩ resistor: max $V_{out} = \frac{80\times10^3}{80\times10^3 + 3\times10^3} \times 6 = 5.78\,V$ ~~with 80 kΩ resistor~~

min $V_{out} = \frac{80\times10^3}{80\times10^3 + 3\times10^3} \times 6 = 5.16\,V$ ~~not with 80 kΩ resistor~~

8 kΩ resistor: max $V_{out} = \frac{8\times10^3}{8\times10^3 + 3\times10^3} \times 6 = 4.36\,V$ (3sf)

min $V_{out} = \frac{8\times10^3}{8\times10^3 + 13\times10^3} \times 6 = 2.29\,V$ (3sf)

With the 80 kΩ resistor, the voltage range is 5.78 − 5.16 = 0.62 V whereas with the 8 kΩ resistor it is 4.36 − 2.29 = 2.07 V. Decreasing the voltage range means the sensitivity is lower. Hence using an 80 kΩ resistor instead of an 8 kΩ resistor will decrease the sensitivity. **[6]**

This response gained a Level 3 mark. The candidate has correctly calculated the sensitivity and resolution of the sensor, giving clear reasoning. Illustrative calculations of the effect of resistance change have been included, together with written reasoning.

Question 4 (c)

(c) The resistance of the thermistor (a semiconductor) decreases when its temperature increases.

Explain this by considering the behaviour and number density of the mobile charge carriers in the semiconductor.

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.... **[3]**

There were some excellent responses to this question. Most candidates gained at least one mark, but only a small minority gave sufficient detail to finish off the argument required by the third marking point – that resistance will decrease as there will be more current *for the same potential difference*.

Question 5 (a) (i), (ii), and (iii)

5 This question is about gravitational and electrical fields.

(a)

(i) The Earth orbits the Sun at a distance of 1.5×10^{11} m. Calculate the angular velocity and the orbital speed of the Earth.

Orbital period = 3.2×10^{7} s (1 year)

angular velocity = ... rad s^{-1}

orbital speed = ... m s^{-1}
[2]

(ii) Use your answer to **(a)(i)** to show that the centripetal acceleration of the Earth in its orbit is about 6×10^{-3} m s^{-2}.

[1]

(iii) Use the value from **(a)(ii)** to calculate the mass of the Sun.

mass = ... kg **[3]**

These three arithmetical questions were answered well by most candidates.

Question 5 (b) (i)

(b)

(i) Calculate the ratio of the force due to the electric field (electrostatic force) between a proton and an electron and the gravitational force between the same particles at a separation *r*.

ratio $\frac{\text{electrostatic force}}{\text{gravitational force}}$ = ... **[3]**

This more challenging question was also answered correctly by most of the candidates. A noteworthy error made by some was to confuse the electric force constant with the Boltzmann constant.

Question 5 (b) (ii)

(ii) State why gravity is the dominant force in the large-scale structure of the Universe even though it is weaker than the electrostatic force on an atomic level.

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.... **[2]**

Few responses to this question gained both marks. Although the previous question shows clearly how much the electrostatic force dominates at the atomic level, very few candidates linked the dominance of gravity on a universal scale to the overall neutrality of atoms.

Misconception

?

Many candidates suggested that the electrostatic force had a shorter range than the gravitational force. This is possibly due to the reference to the 'atomic level' in the stem of the question or a confusion with the strong nuclear force.

Question 5 (c) (i)

(c) An early model of the hydrogen atom pictured the electron orbiting the proton in a similar manner to a planet orbiting the Sun. This is called the 'planetary model'.

(i) Calculate the centripetal acceleration of an electron orbiting a proton at a separation of 0.5×10^{-10} m.

centripetal acceleration = ... m s^{-2} **[2]**

Some responses did not gain marks for this calculation by assuming that the centripetal acceleration was produced by the gravitational force between the proton and electron, giving a very low value for the centripetal acceleration rather than the expected high value.

Question 5 (c) (ii)

(ii) Accelerating charges emit electromagnetic radiation. Suggest and explain why this shows that the planetary model of the hydrogen atom is incorrect.

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.... **[2]**

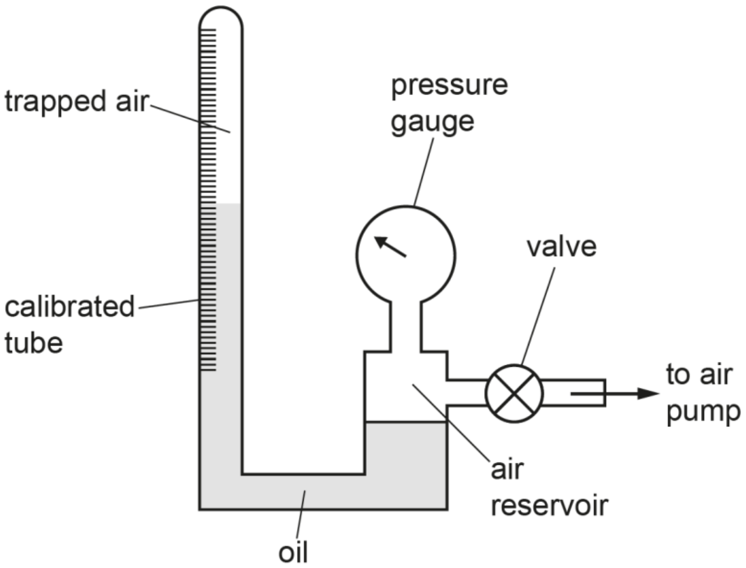
Those candidates who missed scoring on this question generally wrote rather vague answers. For example, writing that 'hydrogen atoms do not radiate' is not the same as 'hydrogen atoms do not constantly radiate'. There is no requirement to use the word 'constantly', but the sense has to be there to gain the mark. Similarly, ending the argument by stating 'the electrons are not accelerating' misses the conclusion 'and therefore cannot be orbiting the proton'.

Question 6 (a) (i)

6 This question is about Boyle's Law and ideal gas behaviour.

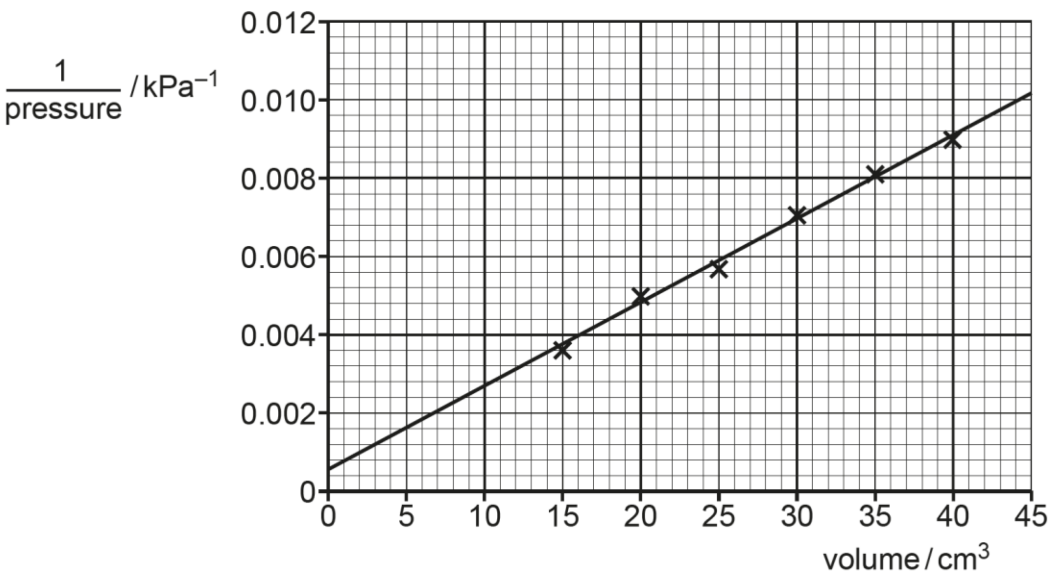
A demonstration is performed to show the relationship between the volume of a gas and the pressure it exerts. **Fig. 6.1** shows the apparatus used.

Fig. 6.1



Readings of pressure and volume are taken as the pressure of the trapped air is increased. The graph in **Fig. 6.2** is plotted using the results of the demonstration.

Fig. 6.2



(a)
(i) Explain why it is necessary to keep the temperature of the air constant during the demonstration. Use ideas from kinetic theory to explain the effect of the temperature of the air increasing as the pressure increases.

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.... **[4]**

Most responses gained at least one mark in this question, but only a small proportion gained all marks. Some candidates focused on the change of pressure and volume producing a temperature change rather than the consequences of the change, but these responses still gained credit for their use of ideas from kinetic theory.

Question 6 (a) (ii)

(ii) Suggest and explain why the graph is a straight line with a positive *y* intercept.

....

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.... **[2]**

This question was generally only clearly answered by those candidates who gained a high score on the paper overall. Many responses focused on the linearity of the graph, sometimes incorrectly suggesting that the linearity showed proportionality. Deviations from ideal gas behaviour was accepted as an alternative response although such deviations would be minor at the pressures used in A Level physics.

Question 6 (b) (i)

(b)
(i) The temperature of the trapped air is 293 K. Show that the root mean square speed of the air molecules is about 500 m s^{-1}.

Assume the mass of a molecule is 4.8×10^{-26} kg.

[3]

This standard calculation was performed well by the majority of the candidates.

Question 6 (b) (ii)

(ii) The movement of particles in an ideal gas can be described as a 'random walk'. State the meaning of 'random walk' in this context.

....

.... **[1]**

Many responses did not gain the mark through being too vague, in this case not giving the reason for the changes of direction of the particles.

Question 6 (c) (i)

(c)
(i) The gradient of the graph is about 2×10^{-4} kPa^{-1} cm^{-3}.
Explain why this is equivalent to 0.2 Pa^{-1} m^{-3}.

[2]

Although many responses produced the expected value, it was often not clear how the answer was reached and the answer did not gain both marks.

Question 6 (c) (ii)

(ii) Use the value in **(c)(i)** to calculate the number of moles of trapped air in the tube.

number = ... mol **[3]**

This calculation was accurately performed by many candidates. Some responses used the gradient value in the calculation rather than its reciprocal, gaining one mark.

Section C overview

Section C is based on the Advance Notice Article, which in this series concerned the development of microphones from the 'phonautograph' to dynamic and condenser microphones. As usual, most candidates showed a familiarity with the ideas in the article and there were some excellent responses throughout the section. It was clear that teachers in many centres had discussed the ideas in the article with their students in their preparation for the examination and these candidates gave impressively detailed responses to questions based on the article.

Question 7

7 A scan of a phonoautogram (lines 18–28) produces a signal variation of 2 mV and a noise level of 75 μV.

Calculate the number of bits to best represent this sample. Make your reasoning clear.

Calculation:

number of bits = ...

Reasoning:

....

.... **[3]**

Few candidates used the ratio $\frac{\text{signal variation} + \text{noise variation}}{\text{signal variation}}$ in the calculation. Only a small proportion of the responses gained the third mark, as many correctly stated that using 5 bits will ensure all (useful) data is recorded but did not state that the recording would include some noise data.

Question 8 (a)

8

(a) Explain why the sensitivity of dynamic microphones falls at high frequencies and how this can affect the accuracy of recordings (lines 66–69).

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....

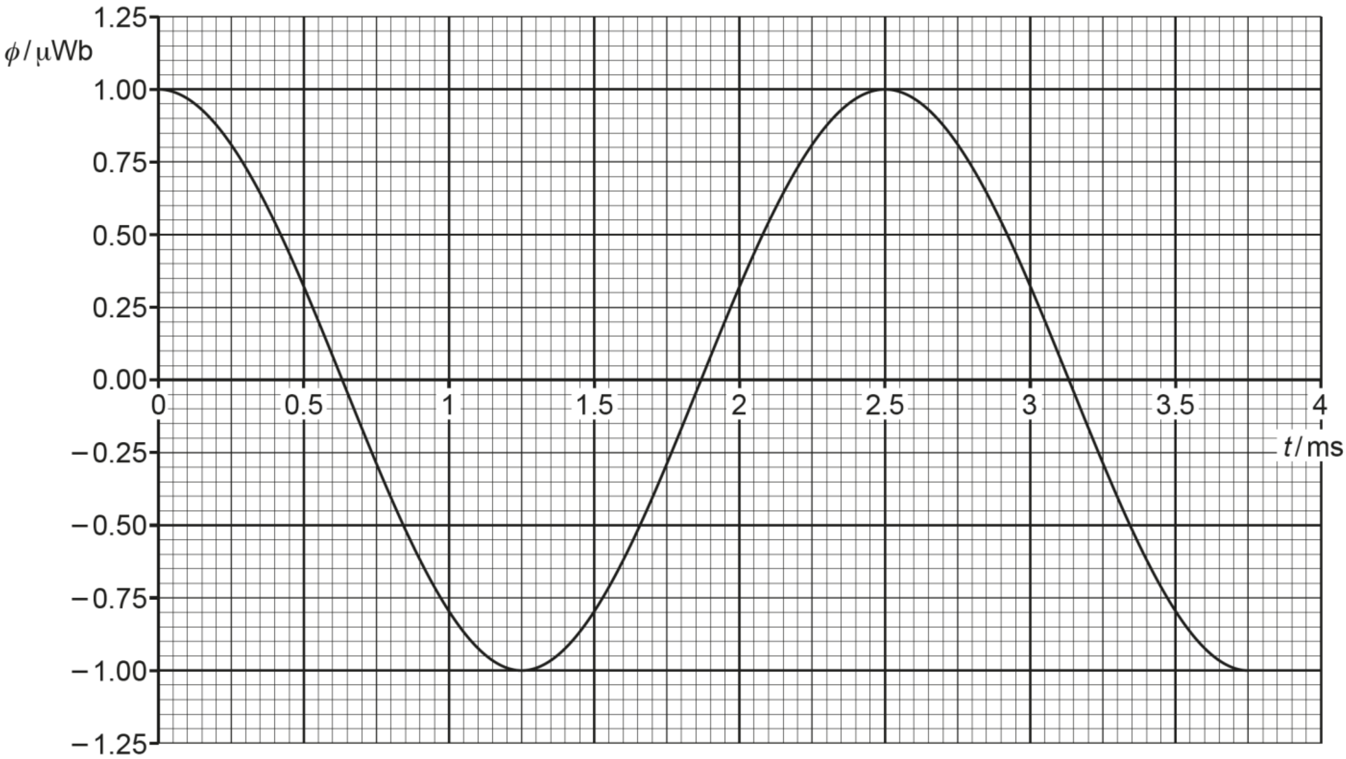
.... **[3]**

Responses that did not gain credit tended to be rather superficial.

Question 8 (b)

(b) **Fig. 8** shows how the flux through a coil of 170 turns in a dynamic microphone oscillating in a magnetic field changes with time.

Fig. 8



Calculate the maximum emf induced during the cycle.

maximum emf = ... V **[2]**

Most responses gained at least one mark from this calculation as the majority of the candidates remembered that induced e.m.f. can be calculated from the rate of change of flux *linkage* rather than rate of change of flux. Candidates who did not gain both marks often used seconds as the unit of time rather than milliseconds or incorrectly calculated the maximum gradient of the graph.

Question 9 (a) and (b)

9 Data for a capacitor in a condenser microphone with air as the dielectric are given below:

Diameter of circular diaphragm = 1.80 mm

Equilibrium separation of diaphragm and back plate = 9.6 μm

Relative permittivity of air = 1

Bias voltage = 12.0 V

A 340 Hz sine wave is incident on the diaphragm which oscillates at a frequency of 340 Hz with an amplitude of 0.1 μm.

(a) Use the equation given (line 76) in the article to show that the **maximum** value of capacitance during the oscillation is about 2.4 pF.

[2]

(b) Calculate the energy stored on the capacitor at this maximum value.

energy stored = ... **[1]**

Questions 9 (a) and (b) were accurately answered by the majority of the candidates. The most common error in part (a) was using the equilibrium separation of the diaphragm and back plate rather than the minimum separation. A few responses used the maximum separation.

Question 9 (c)

(c) The capacitance at equilibrium position is 2.35 pF. Use this value and your value from **(a)** to calculate the mean current from the capacitor as the diaphragm moves from its position in **(a)** to the equilibrium position.

mean current = ... A **[3]**

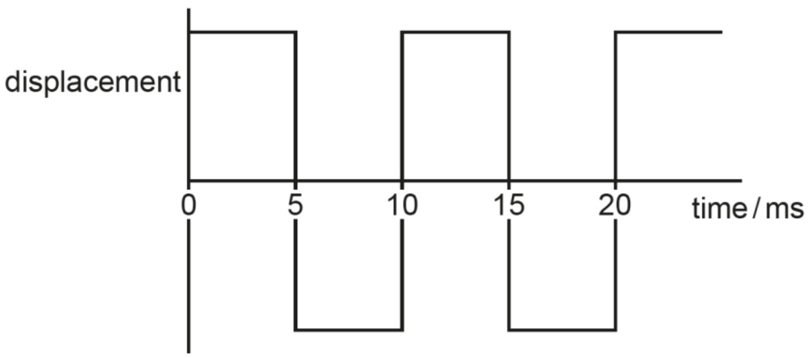
Many candidates used the period of the wave to calculate the time interval between maximum separation and equilibrium separation rather than a quarter of the period. Candidates often struggled to find a method to calculate the charge that leaves the capacitor as it changes capacitance at constant potential difference.

Question 10*

10* Using appropriate equations, explain and compare how the phase of the output signal from dynamic and condenser microphones relates to the phase of the incident sound wave (lines 73–74 and lines 90–92).

Describe how each type of microphone would respond to an incident square wave sound, as shown in **Fig. 10**, and explain which microphone is best suited to recording such a wave. You may include sketch graphs of signal amplitude (no unit) against time/ ms from the two microphones in your answer.

Fig. 10



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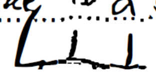
.... **[6]**

Many responses discussed the phase relationships of the two outputs with clarity and reference to the physics mentioned in the article while using their own knowledge to expand on the explanation, often referencing Faraday's Law. The better responses also described the output from the incident wave in the question and the very best discussed the limitation of the dynamic microphone in this context.

Exemplar 2

Dynamic microphones have their output signal being in phase with the rate of change of flux linkage. As $\phi = BA\cos\omega t$ and $\frac{d\phi}{dt} = -BA\omega\cos\omega t$. There is a $\frac{\pi}{2}$ phase difference between the incident sound wave and the signal. In condenser microphones, the output signal is in phase with the sound wave as it is determined by the plate separation which is in phase with the wave. Condenser microphones would be well-suited for square waves as the instant change in displacement would still be properly represented as the output signal is directly related to it The signal would follow the same shape  as the wave. Dynamic microphones on the other hand are not suited for this wave type as it has either 0 change in displacement or instant. As the signal in dynamic microphones is dependent on the change in displacement its signal would be 0 for most of the time then spike to a big +ve V or -ve V, this does not follow the shape of the wave well  [6]

This is a Level 3 response. It accurately describes the phase relationships and is shows understanding of the physics of the situation. It also explains the difference in output of the two microphones and why the condenser microphone is a better choice.

Question 11 (a) and (b)

11 The total capacitance of two capacitors in series is given by:

$$\frac{1}{C_{total}} = \frac{1}{C_1} + \frac{1}{C_2}\,.$$

(a) Using equations for the capacitance of the membrane and air-gap capacitors in an electret microphone (lines 100–105) to show that the total capacitance of the two capacitors in series is given by:

$$C_{\text{total}} = \frac{\varepsilon_0\,\varepsilon_r\,S}{\varepsilon_r\,d + h}$$

[2]

Here are some data about an electret microphone capsule:

Surface area of membrane layer and metal backplate = $4.5 \times 10^{-6}\,\text{m}^2$

Thickness of membrane layer = $1.9 \times 10^{-5}\,\text{m}$

Relative permittivity of membrane layer = 1.8

Width of air gap = $3.8 \times 10^{-5}\,\text{m}$

(b) The total charge on the capacitors is 9.7×10^{-11} C. Calculate the potential difference across the two capacitors.

potential difference = ... V **[2]**

The final question was accessible to many candidates. Some responses did not gain both marks in part (a) because the algebraic derivations did not show each step. The majority of the candidates gained both marks in part (b) although some were confused by the relative permittivity term in the equation.

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Reviews of marking

If any of your students' results are not as expected, you may wish to consider one of our post-results services. For full information about the options available visit the OCR website.

Access to Scripts

We've made it easier for Exams Officers to download copies of your candidates' completed papers or 'scripts'. Your centre can use these scripts to decide whether to request a review of marking and to support teaching and learning.

Our free, on-demand service, Access to Scripts is available via our single sign-on service, My Cambridge. Step-by-step instructions are on our website.

Keep up-to-date

We send a monthly bulletin to tell you about important updates. You can also sign up for your subject specific updates. If you haven't already, sign up here.

OCR Professional Development

Attend one of our popular professional development courses to hear directly from a senior assessor or drop in to a Q&A session. Most of our courses are delivered live via an online platform, so you can attend from any location.

Please find details for all our courses for your subject on **Teach Cambridge**. You'll also find links to our online courses on NEA marking and support.

Signed up for ExamBuilder?

ExamBuilder is the exam paper builder platform for a range of our qualifications. Find out more.

Free for all OCR centres with an Interchange account, it allows unlimited users per centre. We require an Interchange username to verify your centre's users for ExamBuilder.

If you do not have an Interchange account, please contact your centre administrator (usually the Exams Officer) to request a username.

Once you have an Interchange username, use the form on this page to sign up for ExamBuilder, or ask an existing user at your centre to create an ExamBuilder account for you.

Active Results

Review students' exam performance with our free online results analysis tool. It is available for all GCSEs, AS and A Levels and Cambridge Nationals (examined units only).

Find out more.

Tell us what you think

Your feedback plays an important role in how we develop, market, support and resource qualifications now and into the future. We want you and your students to enjoy and get the best out of our qualifications and resources, but to do that we need your honest opinions to tell us whether we're on the right track or not.

You can email your thoughts to resources.feedback@ocr.org.uk or visit our feedback page to learn more about how you can help us improve our resources.

Designing and testing in collaboration with you and your students

Helping young people develop an ethical view of the world

Equality, diversity, inclusion and belonging (EDIB) are part of everything we do

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Contact the team at:

01223 553998

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To stay up to date with all the relevant news about our qualifications, register for email updates at ocr.org.uk/updates

Visit our Online Support Centre at support.ocr.org.uk