



GCE AS EXAMINERS' REPORTS

PHYSICS

SUMMER 2023

Introduction

Our Principal examiners' reports offer valuable feedback on the recent assessment series. They are written by our Principal Examiners and Principal Moderators after the completion of marking and moderation, and detail how candidates have performed.

This report offers an overall summary of candidates' performance, including the assessment objectives/skills/topics/themes being tested, and highlights the characteristics of successful performance and where performance could be improved. It goes on to look in detail at each question/section of each component, pinpointing aspects that proved challenging to some candidates and suggesting some reasons as to why that might be.ⁱ

The information found in this report can provide invaluable insight for practitioners to support their teaching and learning activity. We would also encourage practitioners to share this document – in its entirety or in part – with their learners to help with exam preparation, to understand how to avoid pitfalls and to add to their revision toolbox.

Further support

Document	Description	Link
Past papers	Access the bank of past papers for this qualification, including the most recent assessments. Please note that we do not make past papers available on the public website until 6 months after the examination.	www.wjecservices.co.uk or on the Eduqas subject page
Grade boundary information	<p>Grade boundaries are the minimum number of marks needed to achieve each grade.</p> <p>For unitised specifications grade boundaries are expressed on a Uniform Mark Scale (UMS). UMS grade boundaries remain the same every year as the range of UMS mark percentages allocated to a particular grade does not change. UMS grade boundaries are published at overall subject and unit level.</p> <p>For linear specifications, a single grade is awarded for the overall subject, rather than for each component/unit that contributes towards the overall grade. Grade boundaries are published on results day.</p>	<p>For unitised specifications click here:</p> <p>Results and Grade Boundaries (eduqas.co.uk)</p>

Exam Results Analysis	WJEC Eduqas provides information to examination centres via the WJEC secure website. This is restricted to centre staff only. Access is granted to centre staff by the Examinations Officer at the centre.	www.wjecservices.co.uk
Classroom Resources	Access our extensive range of FREE classroom resources, including blended learning materials, exam walk-throughs and knowledge organisers to support teaching and learning.	https://resources.eduqas.co.uk/
Become an examiner with Eduqas.	We are always looking to recruit new examiners or moderators. These opportunities can provide you with invaluable insight into the assessment process, enhance your skill set, increase your understanding of your subject and inform your teaching.	Exam Marking jobs Examiner & Moderator Vacancies From Eduqas

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Subject Officer's Executive Summary

The accessibility of the papers was in line with previous series. There was a very low entry for the qualification but the candidates entered were very high performing. The candidates demonstrated a uniformly high standard of response across the specification.

Areas for improvement	Classroom resources	Brief description of resource
Qualitative responses	<u>TEXT TOOLS</u>	A bank of tools that allow teachers to use their own piece of text to generate a range of activities.

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COMPONENT 1

Overview of the Component

Very well done albeit there were only a small number of candidates mainly from a very well-prepared centre. It was pleasing to see that many of the laws and definitions had been learnt and also that the numerical skills, of the vast majority of candidates, was very good. There did not appear to be any time issues with the paper as all candidates attempted every question.

Comments on individual questions/sections

- Q.1** Vectors very well done with the majority of candidates realising that an angle needed to be determined along with the force.
- Q.2** In part (a) the QER produced mixed marks as expected ranging from 1 – 6. The majority of candidates expressed themselves clearly and legibly.
- Q.3** Moments was very well answered; however many lost the last mark in (b)(ii) for not giving a direction (upwards).
- Q.4** In part (b)(ii) a number lost a mark as they made the general comment “using better equipment” rather than specifying using a micrometer / Vernier callipers. They also needed to specify the resolution of the instrument as 0.01 mm.
- Q.5** Very well answered. In part (b)(ii) some made general comments such as “it changes velocity” rather than calculating the area under the graph and showing it to be 32 m s^{-1} . The acceleration-time graph was very well done.
- Q.6** The particles question was very well done with candidates showing clearly how they used the conservation laws to determine the nature of the unknown particle. The weakest part was, surprisingly the “issues” question, (c)(ii) whether every country should contribute to CERN, often only one relevant comment was provided.
- Q.7** Well done generally but often one out of the two marks was dropped in (c)(i) as expected.

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COMPONENT 2

Overview of the Component

There were only a very small number of candidates. All AOs were tested in accordance with the mark scheme and guidelines set. The range of the syllabus was tested. Candidates performed to a very high standard across the component specification.

Comments on individual questions/sections

- Q.1** Part (a) was answered well, and the only errors were converting cm to m leading to incorrect values of speed. Part (b) was not answered well. Nearly all candidates stated that only transverse waves can be polarised but could not explain clearly that the direction of oscillations could not be determined from the graph.
- Q.2** Part (a)(i) was answered well but (a)(ii) was not answered well with only a few candidates being able to explain what is meant by the term phase. For part (b)(i); only a few candidates realised that the path difference is $2 \times$ wavelength for the fringe to be formed at A. Part (b)(ii) was answered well by all candidates. In part (c); nearly all candidates scored full marks but for part (c)(ii); it was not evident that candidates realised the steps involved and simply inputted the numbers into an equation. This obtained full marks.
- Q.3** The concept of refraction was understood well by all candidates.
- Q.4** For part (a); there was a range of marks with some candidates being able to give limited responses. Part (b) was answered poorly with hardly any responses on the applications of the photon model of light in lasers or electron microscopes.
- Q.5** Parts (a) and (b) were answered well with nearly all the candidates being able to derive the equation $I = nAve$. In part (c) the explanation for the change in drift velocity did not refer to the motion of the free electrons.
- Q.6** This was answered well by all candidates and d.c. circuit analysis was well understood. Also the synoptic element was answered well.

Supporting you

Useful contacts and links

Our friendly subject team are on hand to support you between 8.30am and 5.30pm, Monday to Friday.

Tel: 029 2240 4252

Email: science@edugas.co.uk

Qualification webpage: [AS and A Level Physics | Edugas](#)

See other useful contacts here: [Useful Contacts | Edugas](#)

CPD Training / Professional Learning

Access our popular, free online CPD/PL courses to receive exam feedback and put questions to our subject team, and attend one of our face-to-face events, focused on enhancing teaching and learning, providing practical classroom ideas and developing understanding of marking and assessment.

Please find details for all our courses here: <https://www.edugas.co.uk/home/professional-learning/>

Regional Rep Team

Our regional team covers all areas of England and can provide face-to-face and online advice at a time which is convenient to you.

Get in contact today and discover how our team can support you and your students.

[Regional Support Team | Edugas](#)

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ⁱ *Please note that 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.*