

Principal Examiner Feedback

Summer 2009

GCE

GCE Physics (6PH03 1A and 1B)

6PH03

There are two routes assessment for this module: internal moderation (1A) and external marking (1B). The same assessment criteria are used for each route, and unless otherwise stated the comments below apply to both routes. The assessment criteria are published and should have been available to all candidates: they should be read in conjunction with this report.

The report on the visit or case study

This section was the only part where word processing was allowed.

Whether a case study or a visit is carried out all references must be acknowledged. Although referencing was quite good on the whole, many thought that three different web pages rather than three different types of sources would suffice if using a case study.

Tenuous evidence was often given for S7, S8 and S9: for example a case study on soil conductivity followed by the sentence "I shall be doing an experiment to measure constantan wire".

Despite their placement at the end of the marking grid, the report marks are meant specifically for the summary. The mark for R2 should not be given when subheadings are used only in sections other than the summary

Experimental Skills

The best experiments are simple ones, with a clear aim, which allow candidates a choice of method and which point to a clear numerical conclusion via a graph.

Planning

The planning should be marked separately from the implementation and analysis. Once a candidate has begun implementation of the experiment, no further planning marks should be given for planning points made amongst the subsequent work. Some plans were obviously written as an afterthought and a weak plan usually yielded an ineffective evaluation. The plan should include all relevant equations and details of planned calculations and justify assertions.

Correct measuring techniques (P6) eluded many candidates and the weaker candidates did not identify their dependent and independent variables, (P7). P8 was often awarded on tenuous evidence for a single, barely relevant, control variable, e.g. "I won't change the elastic band unless it breaks". Many students could usefully give this criterion more thought in their plans. When commenting on whether repeat readings will be necessary (P9), candidates should support their comment with some reasoning. "I will draw a graph" without further qualification is not sufficient for the award of P11: full details of all data treatment are expected for this criterion.

In **Implementation and Measurement** the majority of candidates scored highly.

For M1 students were expected to give consistent and realistic numbers of significant figures in their measured values. They were also expected to give repeated values for measurements such as the radius of a wire. Most candidates used units correctly. At least six sets of measurements were expected.

Analysis

A surprising number of candidates found it difficult to draw a line of best fit, forcing it through favoured points rather than drawing it to represent the overall trend. When describing the trend (A5) candidates should use precise scientific language, not make general comments such as a 'positive correlation'. Some centres teach uncertainties very well, however, in other centres few examples of percentage uncertainty in even one quantity were seen. Conclusions (A11) did not always match the findings.

In both routes, many students showed that they had gained useful skills from their course and produced some excellent work.

Administrative matters

There were exemplar and guidance materials, and relevant forms on the Edexcel websites but it was clear that not all centres had accessed these. Nor had all centres entered candidates for the correct route: again details are on the website. Centres are reminded to use the most up-to-date paperwork, which includes record sheets to be signed by the candidate and teacher: this is a QCA Code of Practice requirement.

Moderators and examiners were very grateful to those centres that ensured that work for each candidate was written on one side of the page, clearly in three parts, held together by a long treasury tag, and named with each page numbered. Details of briefings given to candidates (for 1A and 1B) and details of internal standardisation (for 1A) should be provided. For the 1A submission route, work must be annotated, preferably with Edexcel codes near where marks are awarded, and incorrect physics marked. There were many examples, from 1A centres, of very careful marking, with clear annotation, helpful notes for the moderator and effective internal moderation.

The attention of all centres is drawn to the Ask the Expert and Coursework Consultancy services, both of which are free: details are on the Edexcel website.