

# Examiners' Report/ Principal Examiner Feedback

## Summer 2010

GCE

### GCE Physics (6PH03) Paper 1A/ 1B

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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. This was the second year of the specification and there were fewer centre issues but it was clear that some centres are not accessing the Edexcel website where the latest forms and guidance are available.

Many candidates showed that they had gained useful skills from their course and produced some excellent work.

The assessment criteria are published and should be made available to all candidates: they should be read in conjunction with this report.

For the 1A route, annotation using the marking codes was generally good and the moderators were pleased to receive helpful notes, including details of internal moderation.

### The report on the visit or case study

This section was the only part where word processing was allowed: not all centres had realised this.

Whether a case study or a visit is carried out, all references must be acknowledged. Although referencing was generally quite good, many thought that three different web pages rather than three different types of sources would suffice if using a case study. Some candidates copied and pasted long extracts from sources without any of their own commentary or discussion: this makes the award of criteria such as using specialist terminology correctly (S5) difficult. Without the inclusion of the briefing notes given to candidates it is not possible for examiners or moderators to know whether or not to award S5.

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 unambiguous aim, which allow candidates a choice of method and which point to a clear numerical conclusion via a graph. For example, the determination of the viscosity of a liquid is a better aim for an experiment than an investigation of the variation of viscosity with temperature. The latter aim generally restricts the award of some analysis criteria, in particular A6 and A7.

### Planning

The planning should be marked separately from the implementation and analysis: it should be written before the experiment is carried out. Once a candidate has begun implementation of the experiment, no further planning marks should be given for planning points made amongst the subsequent work. The plan should include all relevant equations, details of planned calculations and justify assertions about choice of measuring instruments and repeat readings.

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.

#### Implementation and Measurement

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. Some candidates explained in planning that they would make measurements with a metre rule because it had a precision of  $\pm 0.5$  mm and then recorded results only to 0.1 m: they could not then be awarded M1. They were also expected to give repeated values for measurements such as the radius of a wire. Most candidates used units correctly, but not always in the conclusion. 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: general comments such as a 'positive correlation' do not merit the award of this criterion. 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. Award of the mark was sometimes triggered by the heading "conclusion".

#### 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. Fewer centres entered candidates for the incorrect route this year: 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. Centres are asked not to use plastic envelopes for candidates work. 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.

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.

## Statistics

Grade	Max mark	A	B	C	D	E	N
Raw boundary mark	40	35	31	27	23	20	17
Uniform boundary Mark	60	48	42	36	30	24	N/A

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