



## External Assessment Report 2012

Subject(s)	Physics
Level(s)	Intermediate 1

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the examination.

# Comments on candidate performance

## General comments

The average percentage mark for section A was higher than for section B.

Very few candidates scored either very high marks or very low marks in this examination. Some candidates answered section B of the paper in pencil rather than in ink. Several Markers commented on this in their reports suggesting that it may have made the writing of candidates more difficult to interpret.

## Areas in which candidates performed well

Question 1: Most candidates knew that the unit of frequency was hertz.

Question 11: Most candidates could select the correct ray diagram.

Question 15: Most candidates knew that a Newton balance was used to measure weight.

Question 25 (a) (ii): Most candidates knew that a thermistor was used as a temperature sensor.

Question 28 (a): Most candidates could select the speed that would do most damage to the car.

Question 29 (a): Most candidates could complete the block diagram.

## Areas which candidates found demanding

Question 14: Most candidates did not know that an amplifier has no effect on the frequency of a signal.

Question 25 (c) (i): Most candidates could not state why gamma radiation is used as a tracer. Very few candidates stated that the gamma radiation was capable of passing out of the body and so could be detected.

Question 26 (b) (ii) B: Most candidates were unable to give an explanation for their answer to part A.

Question 27 (b): Most candidates were unable to label the forces acting on the vehicle. Several candidates wrongly labelled this diagram as balanced/unbalanced. Candidates should be encouraged to consider the particular situation they are given when answering this type of question.

Question 28 (b) (ii): Most candidates were unable to give an explanation for their answer to part (i). Many candidates simply repeated information that was given to them in the stem of the question.

Candidates are still not using units properly. Centres are reminded the mps is not acceptable as an abbreviation for metres per second and secs is not acceptable for seconds. A number of candidates are giving the units for weight as kilograms.

## **Advice to centres for preparation of future candidates**

### **Units**

Centres should remind candidates that only correct units or their correct abbreviations will be accepted. In order to avoid being penalised for incorrect abbreviations, candidates could be encouraged to write out the units in full.

### **Instructions to candidates**

Centres should encourage candidates to read the instructions on the paper carefully.

Candidates should answer questions in blue or black ink.

### **Explanations**

Candidates should be encouraged to be careful in their use of language. Candidates should also be told to be careful of repeating information that is given in the stem of the question.

### **Calculations**

Candidates should be encouraged to set out calculations formally. If candidates copy the correct formula from the Data Book at the start of a calculation and then substitute the figures correctly they will gain some credit even if they then make an arithmetic error. A number of candidates are simply entering a final answer and hence running the risk of scoring no marks for the question if they have made an error.

# Statistical information: update on Courses

## Intermediate 1

Number of resulted entries in 2011	2,721
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Number of resulted entries in 2012	2,769
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## Statistical information: performance of candidates

### Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 80				
A	24.0%	24.0%	665	55
B	26.7%	50.7%	738	47
C	20.5%	71.2%	569	40
D	10.0%	81.2%	276	36
No award	18.8%	100.0%	521	-

## **General commentary on grade boundaries**

While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.

Each year SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.

The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.

The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.

Where standards are comparable to previous years, similar grade boundaries are maintained.

An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions.

SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as Arrangements evolve and change.