Principal Assessor Report 2005

Assessment Panel:	**Physics**

Qualification area

Subject(s) and Level(s) Included in this report	**Physics Intermediate 1**

Statistical information: update

Number of resulted entries in 2004	1,073

Number of resulted entries in 2005	1,555

General comments re resulted entry numbers

There has been another large increase in the number of candidates sitting Intermediate 1 Physics. As was the case in 2004, 95% of these candidates were from S4.
It is anticipated that the number of candidates will rise further over the next few years as Intermediate 1 replaces Standard Grade Science.

Statistical Information: Performance of candidates

Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- **84**	-	-	-	-
A	12.2	12.2	190	58
B	13.8	26.0	215	49
C	18.6	44.7	290	40
D	12.3	57.0	192	35
No award	43.0	100.0	668	-

General commentary on passmarks and grade boundaries

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). 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 senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- 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 are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry 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
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as arrangements evolve and change.

Comments on any significant changes in distribution of awards/grade boundaries

Because of one part of one question in this year's paper proving to be less accessible to candidates than had been expected, the grade boundaries have all been set 2 marks lower than last year.
The mean mark for this year's paper is lower than in 2004 as is the pass rate.
There are more A grade candidates but fewer B and C grade candidates than in 2004.
Some good scripts were seen but there were many in which the basic Physics was poor or virtually non-existent.

Comments on candidate performance

General comments

The increase in the number of candidates presenting a lack of knowledge of the basic Physics set out in the Arrangements Document is very disappointing.
As in previous years there were also large numbers of candidates who had difficulty with Problem Solving and the application of formulae.

Areas of external assessment in which candidates performed well

The responses to multiple choice questions 1, 2 and 3 were good.

In the written part of the paper, responses were reasonably good to the following questions

6 geostationary satellites
10 reflections and lasers (properties and uses)
12 medical uses of radiations
17 logic gates and electronic components
18(a) hi-fi system

Areas of external assessment in which candidates had difficulty

The responses to multiple choice questions 4 and 5 were poor.

Candidates had particular difficulty with the following written questions :

7 different methods of sending signals including speeds
8 problem solving on colour mixing
9 circuit breakers, parallel circuits and electrical calculations
11 effect of converging and diverging lenses on parallel beams of light
13(b) knowledge of the existence of background count
14(b) problem solving using oscilloscope traces
15(a) calculation of speed in a problem solving situation
16 mass, weight and damage in collisions

Recommendations

Feedback to centres

The responses from some candidates were good.
Too many of this year's candidates, however, displayed a lack of even the most basic Physics as set out in the Arrangements Document.
Again, it is recommended that in addition to the basic Knowledge and Understanding, attention be given to the following :

Units Many units were wrong or missing.
Abbreviations such as mps are not acceptable but were all too frequently seen.

Formulae Given the very limited number of formulae that can be tested in Intermediate 1 it continues to cause great concern that large numbers of candidates lack ability in their use.