

Principal Assessor Report 2005

Assessment Panel:

Physics

Qualification area

**Subject(s) and Level(s)
Included in this report**

Physics Intermediate 2

Statistical information: update

Number of resulted entries in 2004	2,240
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Number of resulted entries in 2005	2,354
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General comments re resulted entry numbers

There has again been a modest rise in the number of candidates sitting Intermediate 2 Physics. There has, however, been a change in the nature of the cohort. The percentage of candidates from S4 has risen from 17.6% to 30.5% and it is expected that this percentage will rise further in the next few years.

Statistical Information: Performance of candidates

Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- 100	-	-	-	-
A	25.3	25.3	596	69
B	16.2	41.5	381	58
C	19.6	61.1	461	48
D	9.0	70.1	213	43
No award	29.9	100.0	703	-

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

The grade boundaries are set close to the notional 50, 60 and 70%.
They are the same as they were in 2004.
The mean mark is slightly higher than in 2004 but the pass rate is the same.
There are more A grade candidates but fewer C grade candidates than in 2004.

Comments on candidate performance

General comments

There were some excellent scripts seen this year and it is pleasing that the number of A candidates has risen. There were many candidates seen, however, who presented very weak Physics. There was a wider range of average marks seen across the different topics tested than was the case in 2004.

Areas of external assessment in which candidates performed well

The following multiple choice questions had high facility values : 1, 2, 9, 11, 18 and 19.

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

- 21 (a) kinetic energy
- 22 (a) graphical interpretation
- 23 (a) potential energy
- 24 (a)(b) specific heat capacity and specific latent heat
- 25 (a) basic series circuit work
- 28 (a) wavelength from wave equation
- 29 energy, time and properties of waves

Areas of external assessment in which candidates had difficulty

The following multiple choice questions had low facility values : 5, 7, 8, 10, 15 and 16.

In the written part of the paper, the following questions caused difficulty :

- 21 (b) force from work done
- (c) momentum with two separate objects after collision
- 22 (c) friction force at steady speed
- 23 (b) transformer current
- 25 (b) power developed in a series resistor
- 26 (a) explanation of induced voltage
- 27 (a) drawing transistor symbols
- (c) voltage across one part of a voltage divider
- 30 (a) recognition of angles of incidence and refraction
- 31 (a) purposes of moderator and control rods
- (c) energy in dosimetry

Recommendations

Feedback to centres

There continue to be good responses from a number of candidates but certain areas cause difficulty as in previous years.

Apart from the specific topics outlined under the heading “Areas of external assessment in which candidates had difficulty”, it is recommended that the following receive attention :

Prefixes are required knowledge and still cause difficulty for some candidates

Scientific notation is still causing difficulty including its use in division e.g. question 29

Terminology incorrect language in describing Physics processes e.g. question 26