Principal Assessor Report 2007

Assessment Panel:	**Physics**
Qualification area	
Subject(s) and Level(s) Included in this report	**Physics Intermediate 2**

Comments on candidate performance

General comments

There was an improved response to this year's paper with fewer candidates presenting poor Physics.
The situation continues, however, whereby good marks are obtained for calculations but answers to questions requiring explanations of Physics are generally at a lower standard.
The mean mark and the pass rate were both higher than in 2006.

Areas in which candidates performed well

The following multiple choice questions had high facility values : 1, 4, 11, 16, 18.

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

21 a	average speed, weight and potential energy
22	average speed, acceleration and speed/time graph
23	specific heat capacity and specific latent heat
25 b	charge, current, time relationship
28	sound waves in air and carbon dioxide
30 b	voltage, current, resistance relationship and energy change
31 c	half life calculation

Areas which candidates found demanding

The following multiple choice questions had low facility values : 2, 6, 9, 14, 15, 17.

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

21 b	conversion of potential energy to kinetic energy and the effect of air resistance
24	transformer including calculation of voltage and discussion of current
25 a	equal speeds of visible light and infrared
26	behaviour of a MOSFET circuit
27 b	use of Newton's first law to describe constant speed
29 a, c	energy, absorbed dose, mass relationship and biological harm from X-rays
30 a	ionisation – definition and problem solving
31 a, b	background count and activity calculation

Advice to centres for preparation of future candidates

Apart from the specific topics outlined under the heading "Areas which candidates found demanding" it is recommended that the following receive attention.

Units and prefixes	Many candidates could not correctly convert milli, micro etc. Abbreviations such as secs for seconds are not acceptable.

Explanations	As mentioned in the General Comments above, explanations were not very well done. Examples include how a MOSFET circuit works and why a falling raindrop falls at a steady speed. As in previous years, it is recommended that attention should be given to such written explanations.

Statistical information: update on Courses

Number of resulted entries in 2006	2,630

Number of resulted entries in 2007	3,350

Statistical Information: Performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark - 100	-	-	-	-
A	31.7	31.7	1,061	70
B	19.1	50.8	640	60
C	18.2	69.0	610	50
D	7.4	76.4	248	45
No award	23.6	100.0	791	-

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.