External Assessment Report 2012

Subject(s)	**Physics**
Level(s)	**Higher (Traditional)**

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

There has been a small decrease in the number of candidates sitting the examination this year. This decrease is due to some centres deciding to present candidates for the revised Higher examination (available for the first time in this examination diet). However, the total number of candidates sitting Higher Physics this year (traditional plus revised) has increased by approximately 180 compared to last session.

Markers have again reported that this year's paper provided good accessibility for 'C' grade candidates and, at the same time, included appropriate questions to provide good discrimination for those performing at 'A' and 'B'.

Markers say that a small percentage of candidates were very poorly prepared for this year's Higher examination, receiving very few marks. These candidates may have achieved better success if they had attempted the subject at a lower level.

It remains the case that although questions requiring candidates to perform calculations are generally answered well, most candidates continue to perform less well in questions requiring written descriptions and explanations.

Markers have commented that some of the areas of weakness that have been highlighted in previous external assessment reports have been answered to a better standard this year. It is hoped that one of the reasons for this is that candidates and centres have used previous external assessment reports, and the advice included within them, to better prepare for this year's examination.

Areas in which candidates performed well

The multiple-choice section of the paper was found to be reasonably straightforward by most candidates, with Questions 1, 10 and 19 being answered particularly well (at least 80% of candidates choosing the correct answers).

Question 21: In general, candidates answered this question well. They took better care this year about when to use the relationship for average speed and when to use the one for average velocity.

Question 22: Parts (a) (i) and (a) (ii) were well answered, most candidates carefully using an appropriate relationship and substitutions to analyse the projectile's motion.

Question 23: Parts (a) (i) and (a) (ii) required candidates to calculate the electrical potential energy of a xenon ion and then use this in the kinetic energy relationship to find the final speed of the ion. Most candidates worked through this very well.

Question 24: In part (b), most candidates were able to use the kinetic model to give at least a partial explanation of how increasing the temperature of a gas causes an increase in pressure. Despite some weaknesses in their answers (see the section on 'Areas which candidates found demanding' for further information), candidates were better at describing how the model explains the cause of gas pressure (ie that moving molecules collide with the walls of the container).

Question 25: Parts (a) (i), (a) (ii) and (a) (iii) required candidates to calculate the current, lost volts and power output. These calculations were generally done very well.

Question 26: In part (b), a very high proportion of candidates were able to select information from the graph and substitute into Ohm's law to find the resistance of *R*. As will be mentioned in the next section, however, many also made a unit error in taking the reading from the graph.

Question 27: In part (a), most candidates were able to select information from the graph and then substitute into the Wheatstone bridge relationship to confirm that the resistance of the variable resistor is 120 Ω.

Question 28: Parts (a) and (b) (ii) required candidates to use Snell's law to calculate the angle of refraction and the critical angle respectively. These calculations were both done very well.

Question 29: Part (a) was well done, candidates correctly using the grating formula to calculate the slit spacing.

Question 30: Part (c), in which candidates had to carry out a calculation using the relationship between irradiance and distance, was well done by a high percentage of candidates.

Question 31: This whole question was done well. Both parts (a) and (b) required candidates to choose and use appropriate dosimetry relationships. The majority of candidates handled the relationships and calculations well.

Areas which candidates found demanding

In the multiple-choice section of the examination, there were two questions that were answered correctly by less than half of the candidates (Question 5 (46%) and Question 16 (48%)).

Question 21: Candidates showed reasonable ability in dealing with displacements and velocities. However, many lost marks due to carelessness or lack of precision.

Specific areas of weakness were as follows.

Part (a) (i)

- Using a scale that made diagrams too small and inaccurate
- Candidates failing to use their chosen scale consistently (ie different lines in the vector diagram were drawn to different scales)
- Inaccurate measurement of resultant vector on completed diagram.
- Wrong values of angles drawn — due to lack of experience using a protractor?
- Attempting to apply Pythagoras' theorem to a triangle that is not right-angled
- Failure to quote a direction in the final answer for the displacement

Part (a) (ii)

- Failure to convert the given time of 1 hour 15 minutes to a correct numerical value (ie 1·25 hours or 4500 seconds) when attempting to calculate velocity — some candidates substituted this time as being 1·15 hours
- Using the abbreviation 'hr' for hours rather than 'h'
- Failure to quote a direction in the final answer for the velocity

Part (b) (i)

- Failure to quote a direction in the answer for the displacement

Part (b) (ii)

- Failure to quote a direction in the final answer for the velocity

Question 22: The numerical calculations in this question (parts (a) (i) and (a) (ii)) were generally answered well. The written descriptions and justifications given in part (b) were often unclear and imprecise.

Part (a) (i)

Despite the availability of the data booklet, a small number of candidates started by writing a wrong relationship, eg ‘distance = speed divided by time’.

Part (a) (ii)

The graphs in the question show that the time of flight of the ball is 3·06 seconds. A significant number of candidates failed to use half of this value of time in their calculations to find the maximum height.

Part (b)

The question informs the candidate that when the effects of air resistance are **not** ignored, the golf ball follows a different path. It then asks ‘Is the ball more or less likely to hit the tree?’ A surprising number of candidates wrote ‘Yes’. Markers were often unable to discern which of the two options the candidate favoured and so could not award any marks.

There are a variety of ways a candidate could use to justify that it is more likely for the ball to hit the tree, but all of them require precision in the description. For example, an acceptable answer could be ‘On its way up, the ball’s vertical velocity would decrease *more quickly than before* and so the maximum height would be less than before. This would mean that it is more likely for the ball to hit the tree’.

Markers often read very vague statements such as ‘The ball’s speed would decrease and so it would not reach its maximum height’. Even when air resistance is ignored, the ball’s speed decreases (due to gravitational effects). (This answer does not make clear that the vertical component of velocity has decreased more rapidly than before.) The ball always reaches a maximum height in its flight. (This answer does not make clear there is a *lower* maximum height when air resistance is taken into account.)

It is also important that an answer makes clear whether the candidate is referring to the vertical component of velocity or the horizontal component of velocity. Answers that vaguely refer to ‘velocity’ or ‘speed’ are not precise enough to receive the mark for the justification.

Question 23: Specific areas of weakness were as follows.

Part (a) (i)

This is a 'show' question and the candidate must start by writing the relevant formula ($E = QV$ in this case) and then substitute the relevant, given data. It is not acceptable to start with just numbers in the answer to this type of question.

The final line of the candidate's answer must state the value that they were asked to show — in this case $1{\cdot}95 \times 10^{-16}$ (not $1{\cdot}952 \times 10^{-16}$).

Part (a) (ii)

The candidate is asked to 'calculate the speed of a xenon ion'. This requires equating the given value of energy to the kinetic energy formula in order to find *v*. Several candidates substituted the mass of the *spacecraft* rather than the mass of the ion in $E_k = \frac{1}{2} mv^2$. This careless mistake is very costly for a candidate.

Many candidates demonstrated a lack of awareness of appropriate significant figures. It was not unusual for a Marker to see the final answer written as '$v = 42296{\cdot}46$ m s^{-1}'. In the question, *three* significant figures are used for the data. It is therefore appropriate to round the answer to the same number of significant figures, giving $v = 42\,300$ m s^{-1} (or $4{\cdot}23 \times 10^4$ m s^{-1}).

Part (b)

This part of the question asks for the change in velocity of the spacecraft. It is most efficiently answered using $v - u = Ft/m$. It can also be answered in two 'stages'. Firstly, finding *a* (from *F*/*m*) and then $v - u$ (from *at*). Candidates using this second method must avoid rounding their answer for *a* to the extent that it changes the final answer for $v - u$.

Part (c)

This part of the question gives the candidate various pieces of information about a 'different engine' which uses krypton ions. It then asks 'Which of the two engines produces a greater force?' Some candidates did not *name* an engine in their answer but just referred to the 'first' engine. The question did not state or imply that the engines were used in any time related order. (The first engine met at the start of Q23 is the xenon engine, but the first engine mentioned in this part of the question is the krypton engine.) Markers could not award marks unless the correct engine was named.

Question 24: Although this question was answered well by most candidates, areas of weakness were as follows.

Part (a)

This part of the question asks the candidate to use **all** the relevant data to establish a relationship between pressure and temperature. However, a significant number of candidates did not use **all** the data as instructed. Candidates failed to gain marks because of these omissions. There was even a significant minority of candidates who did not show any use of the data — they simply stated the relationship between pressure and temperature. These candidates could not, of course, be awarded any marks.

Part (b)

Candidates were asked to 'Use the kinetic model to explain…'. Answering in terms of the kinetic model requires an answer to include a description of the *gas molecules colliding with the walls of the container*. A significant minority of candidates failed to supply this. They provided only vague references to 'collisions' and did not say what were doing the colliding or what they were colliding with. In an answer like this, the basis of the kinetic model is missing and the candidate cannot be awarded any marks.

An increase in the *frequency* of the collisions (between the molecules and the walls) has to be given as part of the explanation. Again, many candidates provided incomplete answers such as 'more collisions' rather than 'more collisions per second' or 'more frequent collisions'.

Many candidates stated that the increase in temperature gave molecules 'more energy' rather than 'more *kinetic* energy'. The increased kinetic energy means that the molecules have a greater speed. Many candidates failed to state that, as well as increasing the frequency of the molecular collisions with the walls, this greater speed also increases the force that *each collision* exerts on the container wall.

Candidates should use words to express the terms 'increasing' and 'decreasing'. Although seen less frequently by Markers this year, there were still a few candidates using up (↑) and down (↓) arrows in their descriptions. It has been repeatedly highlighted that this is not acceptable in examination answers.

Part (c)

The purpose of this part of the question was to find out if candidates appreciated one way of designing the experiment to maximise the likelihood of the gas being at a uniform temperature. Many candidates' answers were so vague as to be meaningless. For example: 'To produce a more accurate reading'; 'To make the results more reliable'; and 'To make it a fair experiment'.

The answers of numerous other candidates were completely wrong physics, referring to the possibility of pressure changes, or even of gas escaping from the container. The frequency of such wrong answers made many Markers wonder whether these candidates had any experience of the 'real' experiment in the laboratory.

Question 25: Areas of weakness were:

Part (a) (i)

Most candidates answered this part well. However, there were some who failed to add the internal resistance of the power supply to the lamp's resistance in order to find the total circuit resistance in their calculations to find the current.

Part (a) (ii)

Most candidates also answered this part well. However, there were some who failed to give any units after calculating their value for the 'lost volts'. This was perhaps because of the terminology 'lost volts'. However, candidates must understand that answers could be given in terms of millivolts, kilovolts, etc and so they must clearly state the units that they have decided to use in their answer.

Part (a) (iii)

Again, this part of the question was answered very well by most candidates. However, there was a significant minority who used either the total circuit resistance or the e.m.f. in their calculation to find power. This finds the value of the *total* power output in this circuit and not the power output of the lamp.

Part (b)

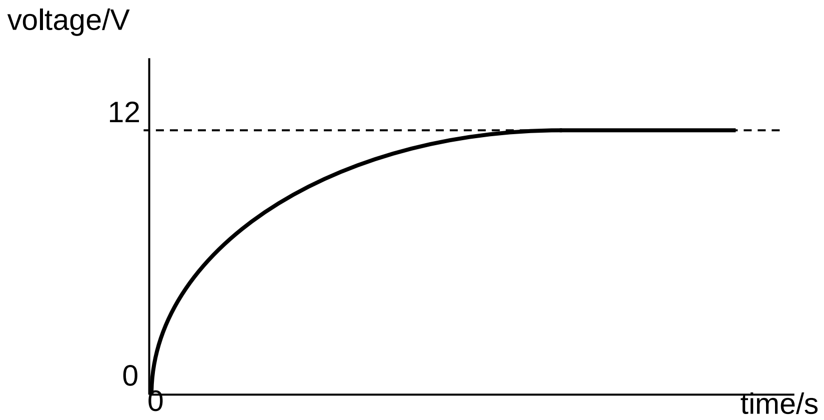
Candidates were asked whether the internal resistance of the different power supply is less than, equal to, or greater than that of the first power supply, and then to justify their answer. A small percentage of candidates again used up (↑) and down (↓) arrows in their answers.

Many answers were not rigorously argued. For this type of question, a complete answer is likely to require the (re)statement of a relevant formula followed by discussion of what happens to each of the variables, leading to a conclusion about the effect on the dependent variable. Markers often saw answers like '$P = VI$. The power increases, so the current must increase...' This answer has failed to discuss the possibility that the power increase is due to an increase in V.

Question 26: Areas of weakness were:

Part (a)

Candidates were asked to sketch a graph of voltage/time for a charging capacitor. It appears that many candidates are still misinterpreting ‘sketch’ as meaning ‘rough’ or ‘inaccurate’. A sketched graph is one which is *not drawn to scale*, ie there is no need to ensure that values are positioned in proportion along the axes. However, appropriate values still need to be shown on the axes and the graph line should be drawn neatly in correct relation to these important values. It would also be good practice to link any important values to the graph line with a dotted reference line. Axes need to be labelled with the names and units of the quantities. The origin needs to be labelled. A fully correct answer to this part could be:



Errors seen by Markers included:

- unlabelled axes
- unlabelled origin
- freehand lines curving the wrong way (ie upwards)
- carelessly drawn freehand lines which did not stay at a steady level
- graph line flattening out above (or below) the 12 V value
- graph line stopped, but *still on a rising trend*, when the 12 V value is reached
- the value of ‘12’ shown, but no unit indicated anywhere on the voltage axis
- a gap between the start of the graph line and the origin

Some candidates produced two conflicting answers to this question — one in their booklet and another on separate graph paper. Markers need to be clear which version the candidate wishes to be marked. Candidates should delete any draft answer(s).

Part (b)

Many candidates correctly read the starting current value from the graph as ‘2’, but failed to notice that the units were milliamperes, not amperes.

Some candidates wrongly used the highest value shown on the scale of the vertical axis (‘2·5’) as the starting current.

Part (c) (i)

Many candidates stated that the initial discharge current remains the same because ‘it does not depend on capacitance’. This fails to get to the heart of the reason, which is that the initial discharge current depends only on the voltage and the resistance, neither of which have been changed.

Part (c) (ii)

Candidates were asked how the capacitance of the new capacitor compared with that of the original 220 μF capacitor. They were told that they ‘must justify’ their answer. Any answer that made no attempt at a justification could not be awarded any marks.

Some candidates wrote ‘the new capacit*or* is smaller’. This shows a lack of precision in the use of language since it refers to the physical size of the capacitor, which bears no relationship to its capacitance.

The question shows graphs for the two capacitors discharging. Some candidates discussed how the capacitors were *charging* — this could not be accepted as appropriate.

There were frequent other examples of candidates using wrong/inappropriate terminology in their answers. Examples are: ‘current is being lost quicker with the second capacitor’ and ‘the original capacitance was better’.

Some candidates made a correct statement such as ‘the second capacitor discharges quicker than the first’, but they failed to answer the question as they did not say how the two capacitances compared to each other.

A significant number of candidates attempted to answer this question using the relationship $Q = It$, stating that ‘the current is constant’. This statement is wrong physics. Although the initial value of the discharging current is the same in both cases, at all other times the discharge current for the second capacitor is less than that for the first capacitor and, of course, both currents decrease to zero.

Question 27: Areas of weakness were:

Part (a)

This part of the question requires the candidate to 'show' that a resistance is a certain value. As was mentioned in Question 23 (a) (i), any answer to a 'show' question must quote the relevant formula followed by the correct substitutions. The candidate must then write down that this calculation equals the required answer. It should not just be 'juggling' numbers. The candidate needed to find the resistance of the fabric (= 40 Ω) by taking a reading from the given graph. It is in their own interests to specifically state this fact and not just have the number 40 'appear' in the middle of a calculation. Few candidates made such a statement.

Part (b) (i)

A small, but not insignificant, proportion of candidates could not identify that the op-amp is connected in differential mode. Markers saw answers such as 'inverting', 'inverted' and 'difference'.

Some candidates could not spell 'differential' correctly; the likes of 'deferential' cannot be given the mark!

Part (b) (ii)

There were many instances of candidates wrongly giving a negative gain for the op-amp in this mode.

A small number of candidates did not appear to understand that this part of the question asked for only the gain of the op-amp circuit. They went on to find the output voltage and give that as their final answer.

Part (b) (iii) (A)

Although candidates only needed to find '$V_2 - V_1$' in this part of the question, many made it more complicated than necessary by working with the individual values of V_1 and V_2. Whilst this could still lead to the correct answer, many candidates made the mistake of 'swapping' V_1 and V_2. This is wrong physics and Markers could not then award any further marks.

A significant number of candidates misread the scale of the graph and used a value of 10·4 (rather than 10·8) for the peak output voltage.

Part (b) (iii) (B)

Many candidates could not correctly work out the potential at 'X'. This was again often due to lack of knowledge of which is 'V_1' and which is 'V_2'.

Many other candidates showed poor knowledge and/or experience of analysing potential divider circuits.

Question 28: Areas of weakness were:

Part (a)

Although most candidates were able to select the Snell's law relationship, a significant minority made errors at the substitution stage.

Part (b) (i)

The vast majority of candidates showed a lack of understanding of the term 'critical angle'. The correct answer was simply that 'θ_c is the critical angle because the angle of refraction is 90°'. Examples of wrong or poor answers seen by Markers were, 'θ_c is the critical angle because the light is being totally internally reflected' and 'θ is the critical angle because total internal reflection is about to take place'.

Part (b) (ii)

Most candidates were able to calculate the critical angle from $\sin \theta_c = 1/n$. However, a significant number of candidates rounded their value for 1/1·33 in the middle of the calculation to the extent that their final answer for θ_c was inaccurate.

Part (c)

This part of the question was surprising poorly done. A correct answer was one in which total internal reflection was shown to be occurring. There were many examples of wrong physics in candidates' diagrams; the angle of reflection not being equal to the angle of incidence; a ray of refracted light being shown emerging from the liquid's surface; the internally reflected ray being labelled as 'refracted ray'; two rays being drawn inside the liquid, one labelled 'reflected' and the other 'refracted'; some candidates appearing to believe that the incident and reflected rays should always be at right angles to each other.

Question 29: Areas of weakness were:

Part (a)

Some candidates failed to realise that the given data only allows a calculation to be carried out for ‘*n*’ = 3.

Some candidates were careless in transferring the value of the angle given in the examination paper to their answer — they used 35·5° rather than 35·3°.

Some candidates, as an intermediate calculation, worked out the sine of 35·3° but then rounded this value too much. This resulted in an incorrect final answer.

Some candidates failed to quote any units after their final answer.

Part (b)

As this question is about determining whether a manufacturer’s claim of 2% accuracy is correct, it is inappropriate for candidates to give an answer to only one significant figure.

Part (c)

Despite this question clearly requiring that the answer had to be justified with a calculation, there were a significant number of candidates who failed to show any calculation. Future candidates need to be aware that no marks can be awarded for such an answer.

Question 30: Areas of weakness were:

Part (a)

Only a small proportion of candidates did not know that the addition of impurity atoms reduces the resistance of a pure semiconductor.

Part (b) (i)

A disappointingly high number of candidates were unable to identify that the photodiode is being used in photoconductive mode in this circuit.

Part (b) (ii)

Although most candidates were able to state that the current increases when the irradiance increases, very few were able to give any detailed (or correct) description of an increased rate of photons creating more electron–hole pairs. Of those candidates who mentioned holes and electrons, many talked of them *combining* rather than being separated by the energy from the photons.

It is important in an answer to this question to state that the rate of photons incident on the junction increases. Saying ‘more photons’ is not sufficient, it needs to be ‘more photons per second’.

Part (c)

Most candidates made a good attempt at this calculation using the inverse square law relationship. Some, however, failed to square the appropriate quantities.

A small proportion of candidates carried out a calculation wrongly based on a simple inverse relationship between distance and irradiance.

Question 31: Overall, this question was answered well. Areas of weakness were:

Part (a)

The absorbed dose was given as '500 µGy' — a small number of candidates did not know the meaning/value of the prefix 'micro'.

Part (b)

Candidates were instructed to 'Justify your answer by calculation'. Some answers did not show any calculation. There were many answers where the structure and clarity of the calculations were very hard for a Marker to follow. Candidates need to understand that it is in their own interests that their logic can be followed in a clearly set-out answer.

Other general issues

Many Markers commented about the difficulty they had in reading the answers from some candidates due to unclear handwriting.

Markers reported that the structure of numerical calculations were often of a poor standard and difficult to follow.

Markers reported that candidates' diagrams were often carelessly drawn and unclear or inaccurate.

Markers questioned whether many candidates had had sufficient experience in presenting their answers on blank paper prior to sitting the examination.

Advice to centres for preparation of future candidates

General

Candidates must read each question very carefully and ensure that their response really does answer what has been asked. Candidates should be encouraged to re-read a question immediately after writing their answer. This practice could reduce the frequency of inappropriate or incomplete answers.

Candidates should be encouraged to present their numerical analyses in a clear and structured way. Markers need to be able to follow the logic in candidates' answers.

Candidates must attempt to write their answers legibly. If they wish to change an answer, it is usually better to rewrite the answer than to 'overwrite' the original answer.

When a candidate makes two (or more) attempts for the same part of a question, they must score through the part(s) that they do not wish to be considered by the Marker. They must not leave alternative answers for the Marker.

Candidates must be prepared to present their answers on blank paper. It should be ensured that they have had sufficient practice in presenting written paragraphs, clearly structured calculations and neat diagrams on unlined paper prior to sitting the examination paper.

Candidates should consider using square-ruled paper for some of their answers. Answers which might be improved by using this paper include vector diagrams, sketched graphs and other diagrams such as those showing the path(s) taken by rays of light.

Candidates should use a ruler when drawing straight lines. For example, when drawing the axes of graphs and the path(s) taken by rays of light.

Candidates must take great care to transfer data accurately from the question paper to their answer. Using a different value is regarded as wrong substitution.

Candidates must remember to quote direction as well as magnitude when giving vector quantities as answers.

Candidates should not use up (↑) and down (↓) arrows in their answers rather than using words. This may be acceptable 'shorthand' for use when making their own notes, but candidates should not use this symbolism when attempting to communicate physics to others — as in examination answers.

Candidates must start their answers to 'show' questions by quoting an appropriate formula before any numbers/values are used. The substitution of numbers should then use the data given in the question without 'mental arithmetic' having been performed.

Candidates must be aware that, in a 'must justify' question, no marks can be awarded if the candidate makes no attempt at a justification.

Most candidates need more practice in writing descriptions and explanations. They need to be more careful in the detail and precision of the language used in their descriptions and explanations.

Many candidates would benefit from spending more time learning correct technical terminology (for example, total internal reflection occurs whenever the incident angle is *greater* than the critical angle) and correct spelling (like ‘differential’, not ‘diffirential’). To help them do this, candidates should be encouraged to study carefully the content statements for the Course.

Candidates must understand that to ‘sketch’ a graph does not mean that the graph can be untidy or inaccurate. The instruction to ‘sketch’ a graph only means that *it does not have to be drawn to scale*. Care should still be taken to present these sketches as neatly as possible. For example, a ruler should be used to draw the axes and any straight sections of the graph line. The origin and axes on sketch graphs must be labelled and any important values carefully shown. It is useful to link these important values to the relevant parts of the graph line using dotted reference lines. It is wise to use a pencil when attempting to draw the graph line — any wrong line(s) can then be erased to leave a neat, clear, single line as the final answer.

Some candidates would benefit from further advice and practice on presenting their final answers to an appropriate number of significant figures.

In numerical calculations, candidates should round off values only at their final answer for a part of a question. The answer(s) to any intermediate calculation(s) should not be rounded to the extent of causing inaccuracy in the final answer.

Candidates must ensure that they know all the prefixes required for the Course and that they practise using the correct power of ten for each prefix.

Statistical information: update on Courses

Number of resulted entries in 2011	9,445

Number of resulted entries in 2012	9,166

Statistical information: performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 90				
A	29.2%	29.2%	2,672	66
B	24.9%	54.1%	2,286	54
C	22.7%	76.8%	2,079	42
D	9.1%	85.9%	833	36
No award	14.1%	100.0%	1,296	-

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.