



External Assessment Report 2010

Subject	Information Systems
Level	Higher

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

Uptake for the optional Units shows that Expert Systems and The Internet are very similar (26% for Expert Systems and 27% for The Internet) but by far the most popular is Applied Multimedia with 47%. This year, there was far more uniformity in candidate performance across the three optional Units. The average mark for Applied Multimedia was 22.4 out of 50, for Expert Systems it was 20.1 and for The Internet it was 18.95.

Section 1

The standard of candidates' responses in Section 1 was perhaps a little disappointing this year. The usual database update anomaly question (Question 1) was poorly answered this year (average 0.14 out of 2) despite this type of question featuring in all of the last five papers. Surprisingly, although a significant number of candidates knew about serif and sans serif fonts, they got them the wrong way round when asked to illustrate them.

Section 2

The responses to the normalisation question (Question 13) were not as good as previous years. The average mark was 9.02 out of 17 which is over 1 mark down on last year

The E/R diagram question (Question 14 a) continues to be very well done with candidates averaging 5.01 out of 6.

A different approach was taken this year to Question 15 (a) (the categorisation of information) where candidates were presented with a scenario and they had to categorise the information in the scenario in the form of a table. This was a more problem solving approach to this type of question but it was not well answered.

The strategy question (Question 16) continues to be answered poorly. Despite the fact that candidates will have noticed a pattern to the strategy question which tends to be asked every year, a large number of candidates did not provide an accurate and detailed answer regarding an upgrade strategy.

The question on economic implications (Question 17 c) was also not well answered. There has not been a question on this for a number of years and this seemed to throw candidates.

Section 3:

In the Applied Multimedia section, for the first time, candidates were asked to create an outline storyboard. This was successful as the average mark for Question 19 (b) (i) was 2.39 out of 3. Question 18 (a) (ii) was poorly answered as the majority of candidates did not know another comparison criteria other than the one they gave in part (a) (i) of the question. Question 19 (b) (iii) was also poorly answered as candidates did not give the correct navigational structure which could be worked out from the scenario.

In the Expert Systems section candidates continue to score well in Question 21 (a) (iii) (the rules question) although many struggled with deriving three attribute pairs in Question 21 (a) (i).

In the Internet section, candidates still struggle with the HTML questions. They also did not perform well in the integration question with relational databases — Question 26 (d) (ii).

Areas in which candidates performed well

Section 1

Question 4 (b) was answered well as candidates knew what a Boolean value was.

The cardinality question continues to be well answered although part (ii) was not as well answered as part (i).

Candidates were also able to explain the difference between the cost and value of information (Question 6).

Section 2

The E/R diagram question (Question 14 a) continues to be very well answered, as does the data dictionary question (Question 14 b) where candidates have to suggest suitable entries for the missing values.

Section 3

Applied Multimedia

Question 18 (e) (ii) was very well answered as candidates knew the ways in which a copyright licence could be breached.

The new question on creating an online storyboard (Question 19 b i) was well received as candidates did this very well.

Expert Systems

Creating rules continues to be well done by candidates (Question 21 a iii) as does the calculation of certainty factors (Question 22 a).

The Internet

Although candidates continue to struggle with the HTML questions, they did reasonably well in Question 24 (b) which was possibly less demanding than part (a).

Areas which candidates found demanding

Section 1

Despite this type of question being asked every year, Question 1 (a) was poorly answered and candidates did not realise that details about a new club could not be entered without a player. They tended to answer the other way round, ie details about a player cannot be entered without a club.

Question 9 (b) was also poorly answered as candidates' answers tended to focus on passwords rather than access rights.

The goal seek function of a spreadsheet was also something that many candidates were not familiar with (Question 12 b).

Section 2

The normalisation question (Question 13) was not as well answered as in previous years. The question was possibly more demanding in terms of the premise of the scenario and the identification of the compound key at 1NF. Rather than ask candidates for a definition of entity integrity or referential integrity which has been the case in all of the last five papers, the candidates' knowledge of these concepts were tested by asking the question (Question 14 c) in a problem solving context where candidates would need to apply their knowledge of the concepts to answer the question. This was certainly a discriminating question as the average mark was 0.6 out of 4.

Question 16 (b) was also poorly answered as candidates did not seem to have the technical knowledge in the production of a network strategy. It is still alarming that candidates are not answering the strategy questions well even though a question on strategies will feature in every paper.

Section 3

Applied Multimedia

The majority of candidates only knew one comparison criteria and were unable to give a second one in Question 18 (a) (ii) and the question on authoring software (icon-based or scripting) continues to be poorly answered.

This year Question 19 (d) focused on timelines but the majority of candidates confused the term 'timelines' with the use of timelines in project management software.

The answer to Question 20 (b) (ii) was very straightforward in that the standard file format could be used within the presentation software but candidates were looking for something more complex hence the average mark for the question was 0.07 out of 1.

Expert Systems

Question 22 (b) on the firing of rules within an expert system continues to present problems to some candidates and Question 22 (d) (i) where candidates had to comment on the advice in terms of level of detail and nature was also poorly answered. They did not realise that the

level of detail is, in fact, good as it is brief. They seemed to have got confused with the amount of detail as opposed to the level of detail.

The Internet

Candidates had real problems with the concept of client side scripting for validation in Question 26 (d) (i). They did not grasp the concept of error trapping at the client end before being submitted.

The integration question (Question 26 d ii) also caused problems as some candidates could not see the combination of the use of a database system with an online purchasing system.

Advice to centres for preparation of future candidates

Candidates must improve their technical knowledge particularly in their chosen optional Unit. Too many candidates did not have sufficient depth of technical knowledge to answer the technical questions in the detail required to achieve high marks.

Candidates must relate their answers to the scenario presented to them if asked to do this in the question.

Candidates must improve their knowledge of the main strategies in the *Using Information* Unit and become familiar with all aspects of each strategy.

Candidates must refrain from covering all alternatives in an answer by giving multiple possible answers, eg written or visual or aural, as this will not attract marks.

Candidates must become more familiar with the Arrangements document, particularly with some of the technical terms. Candidates are often asked for terms that come straight from the Arrangements document.

Statistical information: update on Courses

Number of resulted entries in 2009	1413
Number of resulted entries in 2010	1432

Statistical information: performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark — 200				
A	15.0%	15.0%	215	140
B	27.5%	42.5%	394	120
C	30.9%	73.5%	443	100
D	12.1%	85.5%	173	90
No award	14.5%	100.0%	207	—

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, therefore, SQA 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 Head of Service 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.