



External Assessment Report 2013

Subject(s)	Information Systems
Level(s)	Intermediate 2

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

Once again, a good standard of response was achieved by most candidates, with fewer very low marks being achieved. However, there are a number of worrying trends appearing and the team has taken steps to take account of this:

- ◆ A number of candidates are putting in multiple answers for the one question. For a **describe/explain** type question, markers have been instructed to ignore what is wrong and mark what is correct. However, for a **state** type question, only one response is expected. If a candidate gives multiple responses, markers have been instructed to mark only the **first** response given.
- ◆ A number of candidates when asked to describe/explain are only responding with one-word answers. This type of answer is not a description and could mean a variety of things. Therefore, for a **describe/explain** type question, markers have been instructed to expect a description, and if a description is not given then it is to be awarded 0 marks.

Uptake for the optional topics, shows that Expert Systems had the fewest centres presenting, with Applied Multimedia having the most, and The Internet fewer. There is evidence to suggest that those candidates presented for the Expert Systems unit did considerably better than those candidates for the other optional topics.

Many markers noted a lack of technical knowledge from candidates doing The Internet or Applied Multimedia options. For example, almost no candidates were able to define the terms *sampling rate/sampling depth* or *state what TCP/IP stands for*. These are the basic technical details that all candidates who attempt these options are expected to know.

Section I

Section 1 on the whole, was poorly answered this year in comparison to previous years.

- ◆ Question 2a): Many candidates did not respond **in relation to this information system**.
- ◆ Question 3 was poorly answered, eg 'Don't use capitals'. This is clearly wrong, but simply by expanding the answer a bit further into 'Don't use all capitals' would have been awarded the mark.
- ◆ Question 4a): Very few candidates were able to explain what is meant by data retrieval.

Section II

Section II was completed to a very good standard this year, and candidates and centres are to be congratulated.

- ◆ Question 8b) (the normalisation question) was completed to a very high standard, with most candidates gaining the majority of the 7 marks available. This was evident to the extent that some candidates who were getting very few marks for both sections 1 and 2 in total, were able to gain 6 or 7 marks for 8b). Candidates and centres should be aware that there is more to the course than just the normalisation question.

- ◆ Question 9c)ii): Candidates were asked to state two responsibilities of the data controller. A good number of candidates answered this question in terms of the rights of the data subjects and therefore lost marks. It would help candidates if centres would reinforce that, when responding in terms of the data controller's responsibilities, they are expected to respond in terms of the data protection principles.

Section III

Once again, it was good to see that even fewer candidates answered all three sections this year. All optional topics were completed satisfactorily, although there is considerable evidence that candidates are less knowledgeable about the optional topics than they are the core units with most candidates barely gaining half marks for the optional topic.

Applied Multimedia

As indicated before, many markers commented on the lack of technical knowledge demonstrated by most candidates attempting this option. For example:

- ◆ Question 11e)i): Many candidates did not know the capacity of a DVD-ROM.
- ◆ Question 12c)i), ii) and iii): Few candidates were able to explain what is meant by sampling rate or sampling resolution. Very few candidates were able to give an example of a common sound effect, with most confusing this with sounds that could be added, like a dog barking.

As was indicated last year, candidates doing the Applied Multimedia option should ensure that sufficient time and practice is allocated to learning the underlying theory behind the unit. Also, candidates will benefit from being given examples of theory questions in context, and from being aware that they will only gain full marks by responding to the question in terms of the context.

Expert Systems

Although the number of candidates entered for Expert Systems is much lower than for the other two options, candidates who answered all questions gained better marks.

- ◆ Candidates need to learn that responses about a particular expert system **must** include a reference to the actual expert system described. Question 13c) asked candidates 'to describe the contents of the expert system used at Woodland Wanders'. The response must refer to the Woodland Wanders expert system; yet a very large number of candidates do not do this and therefore lose valuable marks.
- ◆ Some candidates had not learned the basic theory behind the unit so were unable to describe the role of the knowledge engineer (Question 14b) or explain what is meant by Forward Chaining (Question 15a)ii).
- ◆ The decision tree and the creation of rules were in the whole answered well.

Candidates doing the Expert Systems option should ensure that sufficient time and practice is allocated to learning the underlying theory behind the unit. Also, candidates will benefit from being given examples of theory questions in context and by being aware that they will only gain full marks by responding to the question in terms of the context.

The Internet

All candidates appeared to have answered all questions by reading the instructions at the beginning of the optional topics.

Candidates still fail to demonstrate the required technical knowledge that would be expected for this topic.

- ◆ Question 16c)ii): There were good responses on the need of updating anti-virus software and the effect it would have on system performance. However, very few were able to explain why it would have this effect on system performance.
- ◆ Question 17d): Few candidates were able to distinguish between chat and a newsgroup.
- ◆ Question 18a): Few candidates could identify a multiplexor, and even fewer could give a technical description of its purpose (many confusing it with a router).
- ◆ Question 18b): A number of candidates knew what IP stood for in TCP/IP, but only a few knew what TCP stood for.

Candidates doing the The Internet option should ensure that sufficient time and practice is allocated to learning the underlying theory behind the unit. Candidates are expected to be able to respond using a technical vocabulary. Ensuring candidates are able to do this, should see candidate's performance improve.

Areas in which candidates performed well

- ◆ Question 1: Most candidates were able to give a good description of the difference between data and information.
- ◆ Question 5: Most candidates were able to give two reasons for normalising data.
- ◆ Question 8b): Nearly all candidates were able to identify and remove the multi-valued fields.
- ◆ Question 9c)i): Most candidates were able to identify the data controller.
- ◆ Question 9g): Candidates were able to identify a browser.
- ◆ Question 10d): Nearly all candidates were able to identify a one to many relationship.
- ◆ Question 12e)ii): Most candidates were able to identify an anchor.
- ◆ Question 14d)ii): Most candidates could work out the conclusion reached by the expert system.
- ◆ Question 15a)iii): Most candidates were able to create 2 out of the 3 parts of the rule.
- ◆ Question 16c)iii): Most candidates could identify why anti-virus software needs to be updated regularly.

Areas which candidates found demanding

- ◆ Question 2a) was poorly answered, with few candidates referring to the actual information system and many confusing it with *speed*.
- ◆ Question 4a): Candidates were either just rewording the terms or confusing it with *gathering*.
- ◆ Question 9d)i): A large number of candidates could not identify a row as a data object.
- ◆ Question 11e)i): Few candidates knew the capacity of a DVD-ROM.
- ◆ Question 12c)i) and ii): Candidates are unable to define the terms 'sampling rate' and 'sampling resolution'.
- ◆ Question 12c)iii): Many candidates could not identify a suitable sound effect.

- ◆ Question 15b): Although candidates knew the difference between the two structures, very few were able to evaluate the difference.
- ◆ Question 18a)i) and ii): Very few candidates were able to identify a multiplexor or explain its purpose.
- ◆ Question 18b): Very few candidates were able to state what TCP stands for in TCP/IP.

Advice to centres for preparation of future candidates

- ◆ Centres should ensure that candidates are aware that, when a question asks them to describe in terms of the scenario, to gain full marks they must:
 - make sure their answer refers to the scenario
 - give a description and not just a one-word response
- ◆ Centres should ensure that when candidates are asked to **state** a response, they do not hedge their bets and give multiple answers.
- ◆ Candidates should ensure that they look at the number of marks allocated to each question and respond accordingly. If a question is worth 2 or 3 marks, it is likely that the candidate would have to give two or three points to gain full marks.
- ◆ Centres should ensure that sufficient time is allocated to the delivery of the optional topic. Within this time allocation sufficient time must be allowed for the delivery and reinforcement of the key concepts of the chosen optional topic.

Statistical information: update on Courses

Intermediate 2

Number of resulted entries in 2012	1184
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Number of resulted entries in 2013	1281
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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	27.6%	27.6%	354	70
B	25.2%	52.8%	323	60
C	25.3%	78.1%	324	50
D	9.4%	87.6%	121	45
No award	12.4%	100.0%	159	-

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.