



## Course Report 2015

Subject	Computing Science
Level	National 5

The statistics used in this report have been compiled before the completion of any Post Results Services.

This report provides information on the performance of candidates which it is hoped will be useful to teachers, lecturers and assessors 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 assessment and marking instructions for the examination.

## **Section 1: Comments on the Assessment**

### **Component 1: Question paper**

It was evident from the review of the question paper that the candidates performed as expected.

### **Component 2: Assignment**

The marks gained for the assignment were higher than for the previous year.

This year new marking instructions for the assignments were provided, adding clarity, and training events and materials have been provided through the SQA's Understanding Standards activity.

## **Section 2: Comments on candidate performance**

### **Component 1: Question paper**

Teachers had applied the knowledge they had acquired at the Understanding Standards Course events to ensure candidates were prepared for the examination. Candidates have developed increased skills in problem solving. However, they are required to link their solution to the question rather than give generic solutions, especially in section 2 questions. Candidates need to expand their knowledge and experience in the Information System Design and Development Unit.

### **Component 2: Assignment**

Overall, the candidates made an excellent attempt at the assignment with strengths in the implementation but weaker in the design.

## **Section 3: Areas in which candidates performed well**

### **Component 1: Question paper**

#### **Section 1**

- Question 1: Most candidates were confident in number conversions.
- Question 2: Most candidates were confident in the knowledge of datatypes for a number of pupils (eg had to be a whole number – Integer).
- Question 5: Most candidates were able to read and interpret the code to enable them to select appropriate test data.
- Question 7: Most candidates were confident in interpreting the code including the loop and re-entering of data.

- Question 8: Most candidates answered this question with 'thinking skills' looking at compression with transfer time and cloud storage capacity. This showed they were applying their knowledge.
- Question 9: Most candidates were very confident in how to make code readable.
- Question 12: In this question candidates either knew the Communications Act or they did not.
- Question 13: Most candidates answered in terms of keylogging and security; however, several made no reference to security and just described keylogging which was not the question.
- Question 14: Most candidates could give an advantage of the wired network over the wireless one in a work situation.
- Question 15: Most candidates were confident in the testing that can be carried out on an information system.

## **Section 2**

Section 2 questions are 10-mark questions. Candidates performed well in some parts but found them demanding in other parts. All Section 2 comments are in Section 4 'Areas which the candidates found demanding'.

## **Component 2: Assignment**

The majority of candidates demonstrated that they were able to build appropriate information systems and write computer code to solve the problem given.

## **Section 4: Areas which candidates found demanding**

### **Component 1: Question paper**

#### **Section 1**

- Question 3: Some candidates omitted to read the word 'inclusive', which led to the range of values being incorrect.
- Question 4: Some candidates were unclear on the functions of a web browser.
- Question 6: Some candidates were unclear about issues with inconsistent and unclear links.
- Question 10: Some candidates were unclear on the datatype string and gave an Information System Design and Development Unit solution of text.
- Question 11: Most candidates are still finding challenge in identifying the application of peer to peer and client server networks.

## **Section 2**

### **Question 16**

Some candidates could not identify features that aided good user interface design. In part (b) candidates were clear in their understanding of the fact that websites are coded, but several candidates discussed web browsers rather than answering the question. In part (c) candidates had a good understanding of standard file formats but in the second part of the question most candidates did not know addressing types. In the third part of the question candidates generally did well in the calculation and demonstrated a range of different ways to solve the problem. In part (d) candidates had difficulty in applying knowledge.

### **Question 17**

In part (a) some candidates did not apply their answer to storage. In part (b)(i) most candidates could name the translator used but could not link this to the question. In parts (c) and (d) most candidates were confident in the type of programming language and the execution of code. In part (e) Candidates gave an answer on the human computer interface rather than interfaces as described in the stem of the question where a hard disk was being connected.

### **Question 18**

Candidates were confident in applying their knowledge to the questions on the website. Several candidates could not provide answers on accessibility in part (c). In part (g) several candidates could not provide a sort solution to the task.

### **Question 19**

Candidates performed well in this question apart from part (c). In part (c) some candidates only gave partial answers.

### **Question 20**

Some candidates had difficulty in expressing solutions in this Information System Design and Development question. In part (a) most candidates identified the type of validation, however in part (b) most candidates could not 'describe a potential problem when changing this data in a flat file database'. Some candidates also could not state the purpose of a primary key. Some candidates were confident in the disposal of computer systems.

### **Question 21**

Some candidates had problems with data validation; candidates should be able to apply this standard algorithm to a range of problem scenarios. Some candidates were confident in part (b). In part (c) candidates were asked to describe how a pre-defined function could be used to solve a problem. This required them to apply their knowledge of pre-defined functions and apply problem solving techniques — the question was 'describe' not 'state' the pre-defined function to be used. In part (d) some candidates were able to state the number of variables required.

## **Question 22**

In part (a) some candidates gave a description of solid state storage rather than answer the question, which asked why solid state storage is more suitable in this situation. Part (b) was answered well by most candidates. In part (c) some candidates did not link their answer to the task, but gave generic advantages of tablets. In part (d) candidates were clear on cloud storage and the majority of candidates interpreted the question to correctly answer part (ii). Most candidates were confident in the concern of WiFi.

## **Component 2: Assignment**

### **Stage 1: Analysis**

Candidates found it challenging to put the problem into their own words, and are reminded that it not acceptable just to copy out the problem.

### **Stage 2(b)(i): Building a solution (program): Design & Development**

Some candidates did not create a design of the user interface. An annotated sketch is more than sufficient.

### **Stage 2(b)(ii): Building a solution (program): Testing & Refinement**

Candidates should ensure that the test data matches the outputted samples.

### **Stage 3: Reporting**

Candidates should ensure that any legal or security implications identified should be in context of the problem and not just generic answers.

## **Section 5: Advice to centres for preparation of future candidates**

### **Component 1: Question paper**

The purpose of the question paper is to assess breadth of knowledge from across the Course, depth of understanding, and application of this knowledge and understanding to answer appropriately challenging questions.

As in last year's report, candidates found ISDD more challenging and found it more difficult to respond to the application of ISDD, eg linking ISDD to real life scenarios, why are interfaces designed in such a way, or what is actually happening when a user selects an object or clicks a link. Centres are advised to further prepare candidates in this Unit.

### **General**

- ◆ Candidates are advised to read questions with care.

- ◆ When carrying out practical searches and sorts on databases, candidates should explain what is actually happening when the search or sort is executed, both in terms of the programming and the action on the data.
- ◆ 'Explain' questions require an explanation rather than one-word answers which are linked to questions.
- ◆ 'Describe' questions requires a description of the solution which are linked back to the question being asked.

## **Component 2: Assignment**

Centres should ensure that candidates:

- ◆ Complete all parts of the assignment
- ◆ Have evidence for each part of the assignment
- ◆ Keep an accurate log of their progress

## Statistical information: update on Courses

Number of resulted entries in 2014	5853
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Number of resulted entries in 2015	7663
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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 - 150				
A	34.0%	34.0%	2605	107
B	27.8%	61.8%	2131	92
C	21.7%	83.5%	1663	77
D	6.7%	90.2%	516	69
No award	9.8%	-	748	-

For this Course, the intention was to set an assessment with grade boundaries at the notional values of 50% for a Grade C and 70% for a Grade A. The question paper was to standard, however it was felt that, as a consequence of the application of the marking instructions of the course assignment, that demand had been eased in this area. As a consequence, grade boundaries were moved by two marks at all levels (as an interim measure until the Course Assignment issues are addressed).