**General Certificate of Education (A-level)
June 2012**

ICT   **INFO1**

(Specification 2520)

Unit 1: Practical Problem Solving in the Digital World

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

GENERAL GUIDANCE NOTES FOR EXAMINERS

Overall guidelines

1. All examples accepted should be clearly related to the subject area and should not be "generalised" examples.

2. Attention should be paid to ensure that marks are not awarded for simple restating of the question or the stem, often involving the exact same terms.

3. It should be remembered that scripts could be seen after they are marked and so consistency of approach and correct mechanics of marking are essential.

4. Rules on positioning of ticks and marks are to aid in checking and remarking of scripts.

5. Do not expect the student to use the exact wording given in the mark scheme. If you are in doubt as to the correctness of an answer given by the student, consult your Team Leader.

6. The answers given in the mark scheme are exemplars. Credit must be given for other correct answers not given in the mark scheme. Please refer to Team Leaders where there is any doubt.

7. One-word answers, where acceptable, will be indicated on the question paper.

8. The meaning of ICT-specific words and phrases are generally as defined by *BCS Glossary of Computing and ICT* (current edition).

Specific marking guidelines

9. The basic rule is one mark one tick. The tick to be positioned at the point where the mark is gained in the answer and definitely not in the margin.

10. The only figures in the margin should be sub-totals for parts of questions and a final total for the whole question in the box provided.

11. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.

12. Where students have added extra to their answers on additional pages, the total mark should be indicated as 'including x marks from supplementary page y'. The total mark should be written in the appropriate printed box on the question paper.

13. The use of the following symbols/marks is acceptable:

   a. BOD – where the benefit of the doubt is given for the point the student is making. This is generally where poor writing or English is an issue. Its widespread use should be avoided.

   b. An omission sign ^ should be used where the student has given insufficient information to gain a mark. This is particularly useful when a teacher or student looks at scripts against a mark scheme.

   c. It may be appropriate to indicate where the same point has been covered more than once by an arrow or where a point has been covered in several lines of prose by the use of brackets.

   d. For questions where students' answers are assessed for QWC, no individual ticks should be written on the script as it should be marked holistically.

14. Markers are responsible for checking:

   a. The transposition of marks to the front cover

   b. That all work has been marked on each script

   c. That all marks for individual questions are totalled correctly

   d. That the script total is transferred to the box at the top right of the script.

   e. That they **clearly** initial the script, under the total at the top right, so it is possible for the Principal Examiner to identify each markers work.

SECTION A

1	*It is advisable to organise files on computers using a folder structure.* *Draw a diagram to show a suitable folder structure that a student, who studies four AS levels, could use to organise their computer files into subjects, units in each subject and homework.*	*(3 marks)*
	Guidance for examiners on how to mark this question Hierarchical structure diagram. (1) Completeness of diagram. (1) Meaningful names used for folders. (1)	

	Example answer
	
	An example of a student's response is:
	
	• student –- AS level 1 Unit 1 homework
	          (subject) Unit 2 homework
	
	       -- AS level 2 Unit 1 homework
	          (subject) Unit 2 homework
	
	       -- AS level 3 Unit 1 homework
	          (subject) Unit 2 homework
	
	       -- AS level 4 Unit 1 homework
	          (subject) Unit 2 homework	

2	*Cloud storage, where data is stored on multiple virtual servers hosted by third parties, is the chosen storage method for many people.*	
	Describe why they might choose cloud storage.	*(3 marks)*
	Guidance for examiners on how to mark this question Up to 3 marks for reasons/benefits.	
	Example answer A person might choose cloud storage because it saves them purchasing and installing physical storage devices (1) and they only have to pay for the storage they use. (1) It is easy to access data files from anywhere that there is an Internet connection. (1)	

3	*Describe why a regular computer user needs a height-adjustable chair when they are working with ICT.*	*(2 marks)*
	Guidance for examiners on how to mark this question 1 mark for simple statement. 2 marks for description.	
	Example answer A regular computer user requires a height-adjustable chair so that they can adjust the height to the correct position for them (1) to ensure they do not suffer from back ache. (1)	

4	Complete the test plan below.				(6 marks)

Guidance for examiners / example answer

One mark for each correct answer.

Test Number	Test Description	Test Data	Test Data Type	Expected Result
1	To test the range check of 100 – 2000 on customer number	Any integer between 100 and 2000 inclusive	Normal data	User allowed to proceed
2	To test the range check of 100 – 2000 on customer number	3400	Erroneous	An error message is displayed e.g.' data not within range'
3	To test the presence check on the membership number on a members form	No data	Erroneous	User not allowed to proceed with data entry

5	*Database Management Software can be used to perform many different tasks.*	
	Identify a task for which Database Management Software would be suitable and explain how the functionality of the software would help to complete the task effectively.	*(6 marks)*
	Guidance for examiners on how to mark this question Any reasonable task. (1) Up to 3 marks for functionality. Up to 3 marks for explaining the effectiveness of the functionality. Max 5 marks + task mark.	
	Example answer A task for which Database Management Software would be suitable is to produce an invoice for a local bicycle shop. (1) I used the query function to search for a customer's name and address. (1) I used the make report function to produce an up to date invoice (1) and used validation rules to ensure robust data entry. (1) I created a macro and a button to allow for the user to print reports by clicking on the pre defined button (1) rather than having to go through the process of the long procedure needed to print within the database software. (1)	

6(a)	*With reference to your Sample Work, explain what is meant by a* client.	*(2 marks)*
	Guidance for examiners on how to mark this question	
	Check page reference first (no page reference or incorrect page reference no marks)	
	The person who requires the solution to a problem. (1) Name of client/name of company/job role. (1)	
	Example answer My client, Sally Smith (1) was the person who required the website to advertise her business. (1)	

6(b)	*Explain what is meant by an* audience *for an ICT solution.*	*(2 marks)*
	Guidance for examiners on how to mark this question Up to 2 marks for an explanation of an audience.	
	Example answer In the case of a retail website the audience will be the people who view the website (1) they are the people the solution is aimed at. (1)	

6(c)	*Explain what your client expects from your solution.*	*(6 marks)*
	Guidance for examiners on how to mark this question	
	Check page reference first (no client requirements, no page reference(s) or incorrect page reference(s) no marks)	
	One mark for each requirement/expansion. Max 3 marks for just a list of client requirements with no explanation.	
	Example answer	
	My client expects the output to be accurate (1) so that the customers are charged the correct amount. (1) She also required the company logo to be shown on the invoice (1) so that the company was easily identifiable. (1) The layout of the invoice has to be logical (1) so that customers could understand the output. (1)	

6(d)	*Describe the processes that you would need to implement in order to create the solution for your client.*	*(8 marks)*
	Guidance for examiners on how to mark this question **Check page reference first (no IPO, no page reference(s) or incorrect page reference(s) no marks)** Max 6 if only one process described. Max 4 if list only.	
	Example answer One process was to multiply the quantity (1) by the product price (1) to give a subtotal (1) which was then added to the final total. (1) One process while creating a website was to input an image of the school which was resized (1) and position it in the correct place on the webpage (1) and to insert the school mission statement at the top of the homepage (1) in a large bold font. (1)	

6(e)	*Explain, using examples from your test plan, how your testing ensured that you met your client's requirements successfully.*	*(6 marks)*
	Guidance for examiners on how to mark this question	
	Check page reference first (no test plan, no page reference(s) or incorrect page reference(s) no marks)	
	For each example: Specifying types of test Description of test data used Description of expected results Reporting on the result.	
	Max 4 if no reference to results.	
	Example answer	
	My client wanted to make sure that the number of products ordered did not exceed 10 per customer so I needed to perform a test on the range check placed on the number of products. (1) The range was 1 to 10 and I used 11 (1) as my test data. I expected this to be rejected as it is outside the range. (1) When I entered the product number I got an error message telling me that 11 was not acceptable as the number of products ordered (1) so then I entered 8 (1) as the number of products and this was accepted and I was allowed to continue with the order. (1)	

7	*The Principal of Anytown Academy is concerned that the marketing of the school is poor and he would like you to create a website for prospective students and their parents.*	
	What should you consider before you start your design and how would this impact on what you would need to include on the web pages?	
	You may use annotated diagrams if you wish.	*(16 marks)*
	Guidance for examiners on how to mark this question	

Guidance for examiners on how to mark this question

Credit to be given if characteristics of users are discussed. Credit to be given for reference to client requirements/analysis.
Marks to be awarded for student stating what could be put on the web page(s), giving examples where appropriate.

Reference to objects
Information to be added
Uniformity
Guidance
Navigational aids

Low mark range
Student shows little understanding and has only identified considerations/design features. At least one example in context has been used.

0 – 5 marks

Mid mark range
Student describes considerations/design features. Examples in context have been used.

6 – 11 marks

Good mark range
Student explains considerations and design features used and the impact of them. Examples in context have been used.

12 – 16 marks

8	To be of any use at all a computer has to be able to take input, yet this basic idea can easily escape the modern computer user. It seems hard to believe that all computer input devices had once to be literally hardwired, for example, a scanner. Today there is a wide range of input devices available. For example, in computer gaming, for example, a character can be controlled directly by the electrical impulses from a player's brain without the need for wires.	
	Discuss the above statement with reference to the range of input devices currently available. Your answer should include examples of where and how input devices can be used appropriately.	*(20 marks)*

Guidance for examiners on how to mark this question

Low mark range
Student shows little understanding and has only identified input devices. At least one example has been used. The student has used a form and style of writing that is barely appropriate to its purpose. The student has expressed simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Information or arguments may be of doubtful relevance or be obscurely presented. Errors in spelling, punctuation and grammar may be noticeable and intrusive to understanding, suggesting weaknesses in these areas. Text is barely legible.

0 – 5 marks

Mid mark range
Student has made reference to a range of input devices. Meaning is nearly always clear. The student has, in the main, used a form and style of writing, which is appropriate for its purpose; with some lapses. The student has expressed simple ideas clearly and reasonably fluently. Student has used sentences and paragraphs. Information or arguments are generally relevant. There may be some errors of spelling, punctuation and grammar. Text is legible.

6 – 10 marks

Good mark range
Student discusses a wide range of input devices. Examples of where and or how devices are appropriate have been used. Some specialist vocabulary has been used appropriately. Meaning is clear. The student has, in the main, used a form and style of writing, which is appropriate for its purpose; with occasional lapses. The student has expressed moderately complex ideas clearly and reasonably fluently. Student has used well-linked sentences and paragraphs. Information or arguments are generally relevant and well structured. There may be occasional errors of spelling, punctuation and grammar. Text is legible.

11 – 15 marks

High mark range
Student discusses a wide range of input devices currently available and changes that have occurred. Examples of where and how devices are appropriate have been used. Any specialist vocabulary has been used appropriately. Meaning is clear. The student has selected and used a form and style of writing appropriate to purpose and has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another clearly and coherently. There are few, if any, errors of spelling, punctuation and grammar. Text is legible.

16 – 20 marks