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

ICT   **INFO2**

(Specification 2520)

Unit 2: Living 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.

1	*What is ICT?*	*(4 marks)*
	Guidance for examiners on how to mark this question Marks for a definition or examples of the definition. Max 4.	
	Example answer ICT is the use of technology for the input (1), storage (1), processing (1) of data and the output of information. (1)	

2	*Complete the table below to show the different forms that data can take. The first has been done for you.*	
	Form of Data	
	Moving images	
		(4 marks)

	Guidance for examiners on how to mark this question
	1 mark for each form of data.
	Do not credit moving images.

	Example answer

Form of Data
Moving images
Text
Sound
Numbers
Pictures/still images

3	*An ethical issue in ICT arises from the easy access available to other peoples' unsecured wireless networks which can then be misused.*	
	*Describe **two** other ethical issues in ICT.*	*(4 marks)*
	Guidance for examiners on how to mark this question 1 mark for each issue. 1 mark for each expansion. Must have 2 issues for full marks.	
	Example answer Monitoring software (1) can be used by employers to read private employee emails. (1) A student could cheat on their coursework (1) by finding a completed piece of work on the Internet and passing it off as their own. (1)	

4	*You have brought home your coursework on a USB pen drive. Unfortunately, when you try to access the data on your home computer, you receive a message saying that the data is corrupt and cannot be loaded.*	
	Discuss what backup and recovery options you should have put in place to deal with the situation.	*(8 marks)*
	Guidance for examiners on how to mark this question 1 mark for each option/point. 1 mark for each expansion/example **in context.** Max 6 if only back-up **or** recovery.	
	Example answer You could have saved your work regularly (1) on to another storage medium (1) for example a CDRW (1) so that you have more than one copy. (1) This can be used as a backup. (1) You could have attached the files to an email and emailed it to yourself. (1) You could have used an Internet facility that would allow you to store the files. (1) You could have checked that you can access these files successfully if they are needed in an emergency. (1)	

5	*Many retailers provide a system via a website which allows customers to purchase items online and have them delivered to their home.*	
	Explain, using examples, how different types of processing could be used by such a system.	*(10 marks)*

Guidance for examiners on how to mark this question

1 mark for each type of processing.
1 mark for each relevant expansion/example.
Must have at least two types of processing with examples for full marks.

Max 6 if answers not related to retailing context.

Example answer

The system could use transaction processing (1) to allow each transaction to be completed. Each transaction is dealt with as it is received (1) and another cannot be started until the previous one is complete (1) allowing the stock levels to be updated immediately. (1)

Interactive processing could also be used. (1) The system responds immediately to a user's actions (1), for example a user's shopping basket would be updated as purchases were added. (1)

The system could use batch processing (1) to process the order details for delivery. (1) The batches could be sorted by delivery area. (1)

6(a)	*What type of computer interface is shown above?*	*(1 mark)*
	Guidance for examiners on how to mark this question 1 mark for naming menu driven interface.	
	Example answer Menu driven interface. (1)	

6(a)	*What type of computer interface is shown above?*	*(1 mark)*

6(b)	*Touch-screen technology is available for use in hairdressing salons.* *Suggest an alternative type of interface to your answer in 6(a) that could be used to take advantage of this technology.*	*(1 mark)*
	Guidance for examiners on how to mark this question 1 mark for naming an interface.	
	Example answer A graphical user interface would be suitable for touch screen technology in this context. (1)	

6(c)	*With reference to your answers given in 6(a) and 6(b), describe how the features of the two types of interface could be suitable for use by staff in hairdressing salons.*	*(8 marks)*
	Guidance for examiners on how to mark this question 1 mark for each feature. 1 mark for each relevant expansion. Max 6 if only describes the features of one type of interface. Max 7 if two are described but one is incorrect. Max 6 if answer not in context. No marks for description of command line interface as it is not suitable for this scenario. With the exception of command line interface, credit marks for interfaces named in 6(a) and 6(b) even if 6(a) and/or 6(b) have been given no credit.	
	Example answer A menu driven interface provides a choice of options (1) that could display a list of the services provided by the salon (1) which would help less experienced users. (1) The hairdressers could just point and touch (1) to select an appointment slot and book it. (1) Each hairdresser could have their own customised desktop using a GUI (1) which would allow them immediate access to regular customer details. (1) Windows allow the hairdresser to quickly switch between booking and payment applications. (1)	

7(a)	*A friend is setting up a small home network that is to have access to the World Wide Web.*	
	What elements would be required to set up such a network and why would they be needed?	*(8 marks)*
	Guidance for examiners on how to mark this question	
	1 mark for each element and 1 mark for each expansion.	
	Max 6 for a list of elements.	
	Example answer	
	She would need a suitable communications device (1) for example a router/hub. (1)	
	A wireless connection is needed (1) to transfer data across the network. (1)	
	She would need network software (1) to enable the machines to communicate with each other. (1)	
	She would need a suitable telephone line/communications link. (1)	
	She would need a web browser to access the world wide web. (1)	

7(b)	*Identify possible external threats to data that is stored on a network and explain how you would try to prevent them.*	*(8 marks)*
	Guidance for examiners on how to mark this question 1 mark for each threat/preventative measure identified. 1 mark for each relevant expansion/example. Max 6 if only one threat or no prevention identified.	
	Example answer The network could be targeted by hackers (1) who are trying to gain unauthorised access to the network. (1) This could be prevented by installing a firewall. (1) A virus could be introduced via email (1) which could delete all data on the network. (1) This could be prevented by running virus scanning software (1) which would detect and isolate them. (1) The virus scanning software must be kept up-to-date if it is to be effective. (1)	

7(c)	*Explain why standards are needed when transferring data from one device to another on a network.*	*(4 marks)*
	Guidance for examiners on how to mark this question	
	Marks for any of:	
	• Identification of a need/needs	
	• Good explanation of need	
	• Examples of standard(s) that meet the need.	
	Max 2 if no explanation.	
	Example answer	
	Standards are needed for the successful transfer of documents. (1)	
	An example would be portable document format (PDF). (1)	
	The successful use of hyperlinks on web pages (1) requires the HTTP standard. (1)	

8	*People have been subjected to blackmail, harassment, theft and fraud for centuries.* *ICT is not changing the types of crime committed but has changed how they are committed.* *Discuss this statement with reference to current ICT-related legislation and regulations that exist to try to prevent criminal activities.*	*(20 marks)*

Guidance for examiners on how to mark this question

Low mark range
Student identifies the ways that a few of these crimes are committed. Legislation or regulations may not be mentioned The student has used a form and style of writing which is barely appropriate for 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

Medium mark range
Student outlines the ways that some of these crimes can be committed using ICT. Legislation or regulations are mentioned but may be unconnected. Some understanding of them is demonstrated. The student has used a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. The student has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well-connected. Information or arguments may sometimes stray from the point of information or may be weakly presented. There may be some errors of spelling, punctuation and grammar, but not such as to cause problems in the reader's understanding and not such as to suggest a weakness in these areas. Text is legible.

6 – 10 marks

Good mark range
Student describes the ways these crimes can be committed using ICT mentioning related legislation and regulations, demonstrating a good understanding of them. Meaning is clear. The student has in the main used a form and style of writing appropriate for its purpose, with only 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 provides an in depth discussion of the changes and the different ways that these crimes can be committed using ICT, clearly relating them to current legislation and regulations, demonstrating an excellent understanding of them. 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. Specialist vocabulary has been used appropriately. There are few if any errors of spelling, punctuation and grammar. Text is legible.

16 – 20 marks