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**General Certificate of Education (A-level)
January 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	Complete the following table which displays the characteristics of users that could be considered when designing ICT systems. The first has been done for you.	(4 marks)
	Characteristics of users	
	Physical Characteristics	

Guidance for examiners on how to mark this question	
1 mark for each characteristic Do not credit physical characteristics Allow disabilities	

Example answer	
Characteristics of users	
Physical Characteristics	
Experience	
Environment	
Task to be undertaken	
Age	

2	*Using the example of a supermarket checkout, explain the difference between data and information.*	*(5 marks)*
	Guidance for examiners on how to mark this question 1 mark for explaining the meaning of data and 1 mark per expansion or example in context. 1 mark for explaining the meaning of information and 1 mark per expansion or example in context.	
	Example answer Data just raw facts or figures which have no meaning. (1) An example of this would be the barcode on a product. (1) The checkout till produces a receipt. (1) The receipt provides information which is data processed to give it context/meaning (1), for example the cost of the item. (1)	

3	*Wireless ICT networks use radio waves as the medium to transfer data.* *State **two** other types of media used to transfer data across ICT networks.*	*(2 marks)*
	Guidance for examiners on how to mark this question One mark for each type of data transfer media stated.	
	Example answer Data can be transferred by copper cable (1) or fibre optic cable. (1)	

4	*Explain, with examples, how ICT systems can provide:*
	   Improved presentation of information.
	   Improved accessibility to information.
		(8 marks)

	Guidance for examiners on how to mark this question 1 mark for each point stated and 1 for each expansion/example. Max 6 marks if only presentation or accessibility covered. Marks can be awarded flexibly for depth and/or breadth answers.	
	Example answer Electronic data projectors (1) can be used to display animated computer graphics. (1) Data can be manipulated to show trends. (1)The legibility of Information can be improved. (1) ICT systems can provide access to the world wide web (1) and a search engine can be used to access information. (1) ICT can provide software to create searchable databases. (1) ICT interfaces can be provided for disabled users. (1)	

5(a)	*Figure 1* shows a job description for an ICT professional. *Identify some of the personal qualities mentioned in the job description in* **Figure 1** *and explain why an ICT professional would need them to carry out this job effectively.*	*(8 marks)*
	Guidance for examiners on how to mark this question 1 mark for identifying a personal quality from the advert. Marks for explanations Must have at least 2 qualities for max marks. Do not credit explanations without an appropriate personal skill. Maximum 4 marks for only identifying personal qualities with no explanations.	
	Example answer The help desk administrator would need exceptional problem solving skills (1) in order to be able to provide a fast, effective solution to new problems (1) or to recognise when it needs to be referred to someone with more expertise. (1) The help desk administrator would need good oral communication skills (1) because she would have to be able to explain solutions to novice users. (1) She also needs to be a good listener. (1) The help desk administrator would need strong documentation skills (1) because she would have to write up clear solutions to new problems encountered by help desk users. (1)	

5(b)	*The Helpdesk Administrator referred to in* **Figure 1** *is required to join a team of ICT professionals.*	*(8 marks)*
	Describe the characteristics of an effective ICT team.	
	Guidance for examiners on how to mark this question 1 mark for identifying a characteristic and additional marks for expansion/example Max 5 if just a list of characteristics	
	Example answer One characteristic is the appropriate allocation of a team member to a task (1) to utilise the strengths of team member (1) e.g. send a networking specialist to solve a problem relating to a network server. (1) The team must have adherence to agreed standards (1) to ensure that the resultant system is fully understandable and maintainable by another team in the future (1) e.g. to provide modifications to the user manual. (1) The team must have good leadership (1) in order to keep the team motivated and on task. (1)	

6(a)	*Figure 2 below shows a camera which is part of an ICT system designed to recognise car number plates. The data captured by the camera is processed and used to identify the registered owner of the vehicle.* *What form is the data in when it is captured by the camera?*	*(1 mark)*
	Guidance for examiners on how to mark this question 1 mark for the data form	
	Example answer The data captured by the camera will be in the form of a still image. (1)	

6(b)	*This data must be processed to allow the registered owner to be identified.* *Explain what has to be done to achieve this.*	*(2 marks)*
	Guidance for examiners on how to mark this question 1 mark for the form of data that the image is changed into 1 mark for explaining how it could be used to identify the registered owner	
	Example answer The data must be processed into text. (1) It could then be used to search a database. (1)	

6(c)	*Information from car number plate recognition systems can be used in a number of ways.* *Discuss the consequences of using such systems for individuals and society.*	*(12 marks)*
	Guidance for examiners on how to mark this question **Low Mark Range** Candidate identifies some consequences for individuals **or** society. **0 – 4 marks** **Middle Mark Range** Candidate describes some consequences for individuals **and** society. **5 – 8 marks** **High Mark Range** Candidate discusses consequences for individuals **and** society. **9 – 12 marks**	

7	*The article in* **Figure 3** *outlines one example of how economic and cultural factors have affected the use of ICT.* *Discuss how economic and cultural factors have affected the use of ICT using this and other examples.*	*(10 marks)*
	Guidance for examiners on how to mark this question **Low mark range** Candidate identifies some effects of how cultural and/or economic factors have affected the use of ICT using the example given. **0 – 3 marks** **Medium mark range** Candidate describes some effects of how cultural and economic factors have affected the use of ICT. Candidate may have referred to other examples. **4 – 7 marks** **High mark range** Candidate discusses effects of how cultural and economic factors have affected the use of ICT using other examples. **8 – 10 marks**	

8	*Mr Kapur is a landscape gardener and uses several computers and software to produce designs for his customers. Mrs Kapur runs a child minding service using her own computer. The Kapurs' three children all have their own computers which they use for school work and socialising. All of the family's computers are connected to a home network which has access to the Internet.*	(20 marks)
	Mr and Mrs Kapur are worried about the security of the considerable amount of data stored on their home network as they each depend upon computers to run their home businesses.	
	Discuss the threats to this data and the measures that the family need to take to ensure its security and to enable its successful recovery.	

Guidance for examiners on how to mark this question

Low mark range
Candidate identifies some of the possible threats to data or some security measures. The candidate has used a form and style of writing which is barely appropriate for its purpose. The candidate 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
Candidate outlines some of the possible threats to the data and/or some security measures demonstrating some understanding of these threats and measures. The candidate has used a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. The candidate 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
Candidate describes many of the possible threats to data and some security measures demonstrating a good understanding of these threats and measures. Meaning is clear. The candidate has in the main used a form and style of writing appropriate for its purpose, with only occasional lapses. The candidate has expressed moderately complex ideas clearly and reasonably fluently. Candidate 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
Candidate discusses in context many of the possible threats to data and measures for maintaining security including recovery of the data, clearly demonstrating an in-depth understanding of these threats and measures. Meaning is clear. The candidate 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