

ADVANCED SUBSIDIARY GCE COMPUTING

F451

Computer Fundamentals

Candidates answer on the question paper.

OCR supplied materials:

None

Other materials required:

None

Friday 27 May 2011 Morning

Duration: 1 hour 30 minutes



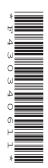
Candidate forename				Candidate surname			
Centre numb	er			Candidate nu	ımber		

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions.
- Do not write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **100**.
- This document consists of 20 pages. Any blank pages are indicated.



(a)	Stat	e what is meant by
	(i)	an input device
		[1]
	(ii)	an output device
		[1]
(b)	A ce	entral heating system is used to control the heating in a house.
	(i)	State an automatic input device which would be used with this system, explaining why it is necessary.
		[2]
	(ii)	State an automatic output device which would be used with this system, explaining why it is necessary.
		[2]

(a)	Describe the following types of data transmission:				
	(i)	Serial data transmission			
		[2			
	(ii)	Parallel data transmission			
		[2			
(b)	Stat	e a computer application which may use parallel data transmission, justifying you wer.			
	App	lication			
	Just	ification			
		[2			

search for entertainment available or reasonably priced guest houses that have vacancies.

A seaside town has a number of interactive information boards placed at intervals along the promenade. The purpose of the boards is to provide information to holidaymakers. A user might

(a)	State two peripherals which would be used at each site, justifying your answers.
	Peripheral 1
	Justification
	[2]
	Peripheral 2
	Justification
	[2]
(b)	The data needs to be up to date so the information boards are connected in a network which is controlled from the tourist information office on the promenade.
	State a method of connectivity which could be used and justify your choice.
	Method
	Justification
	[3]

(c) (i) The interface used by holidaymakers is a menus interface.
Explain why a menus interface was chosen for this application.
[3]
(ii) The interface used by workers in the tourist information office to book accommodation for holidaymakers is a forms interface.
Explain why a forms interface was chosen for this application.
[3]

A car insurance firm collects data from its customers and stores it on a computer.

(a)	The	customer name is stored using the computer's character set.
	(i)	Explain what is meant by the character set of a computer.
		[2]
	(ii)	Explain the use of code to represent a character set.
		[2]

(b) When data is input, it must be verified and validated.

(i)	When the details of a new customer are input to the system, the data must be verified. Describe one way that the data input can be verified.
	ro
	[2]
(ii)	One piece of data that is required is the make of car. An existence check and a presence check will be carried out on this data.
	Describe what is meant by
	existence check
	presence check
	[2

((The quality of written communication will be assessed in your answer to this question.)

		ſΩ

[Turn over for next question]

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A su	upermarket stores data about customers who have loyalty cards.
(a)	Explain why some customers may be concerned about giving their personal details to the supermarket.
	[2]
(b)	Describe steps the supermarket can take to reassure customers about their concerns.
	[5]

(a)	The analyst followed the stages of the systems life cycle. Describe the purpose of three of the stages of the systems life cycle which the analyst must complete before the software can be written.
	1
	[2]
	2
	[2]
	3
(b)	The analyst uses the waterfall model of the systems life cycle. Describe the waterfall model.
	[3]

(c)	Explain the importance of evaluating the system and the criteria that should be used in the evaluation.
	[4]
(d)	Describe two types of maintenance which may need to be carried out on the finished system.
	1
	[2]
	2
	[2]

A processor contains a number of special registers and buses.

(a)	Describe the contents of the following special registers.
	Memory Data Register (MDR)
	[2]
	Current Instruction Register (CIR)
	[2]
	Accumulator
	[2]
(b)	Describe the use of different types of bus in the processor.
	[4]

Data is communicated between devices in a network.

(a)	A protocol is needed in a network	
	State what is meant by a protocol.	
		[2]
(b)	Describe three parts of a protocol which would be necessary to allow communication in network.	ı a
	1	
		[2]
	2	
		[2]
	3	
		[2]

	15					
(c)	Describe packet switching to send data from one device to another on a network.					
	[E:					

[Turn over for last question]

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9	(a)	Describe each of the following types of operating system and give an example of where each could be used.
		Multi-tasking
		Use
		[4]
		Multi-user
		Use
		[4]

(b) (ı)	State what is meant by utility software.
	[1]
(ii)	A student uses a computer to produce coursework for a number of subjects.
	Explain how the student can use file handling utilities with the computer.
	[3]

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