

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS General Certificate of Education

Advanced Subsidiary Level and Advanced Level

CANDIDATE NAME				
CENTRE NUMBER		CANDIDATE NUMBER		

9691/12 **COMPUTING**

Paper 1 October/November 2012

1 hour 30 minutes

Candidates answer on the Question Paper.

No additional materials are required.

No calculators allowed.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer all questions.

No marks will be awarded for using brand names for software packages or hardware.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This document consists of 12 printed pages.



1	(a)	(i)	Define what is meant by hardware.			
			[1]			
		(ii)	Define an input device and state why it is needed.			
			[3]			
	As	tude	nt is studying biology.			
	(b) The student's current project is to research the different types of creature found on a beach at different times of the year.					
			te how the following software can be used by the student to help them with the duction of their project:			
		(i)	word processor			
			[1]			
		(ii)	database			
			[1]			
		(iii)	desktop publisher (DTP)			
			[1]			

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Explain how the student's exam paper can be read using OMR and then mark automatically.	æd
	[6]

An expe	
Name t	hree other parts of an expert system and state what each is used for.
Part 1	
Part 2	
Part 3	
	rea
Two ou	put formats are graphs and hard copy reports.
For each ca	h format state an application where it would be appropriate. Justify your choice in
(i)	Se.
	se. Graphs
	Graphs
	Graphs Application
(ii)	Graphs Application Justification
(ii)	Graphs Application Justification [2] Hard copy reports
(ii)	Graphs Application Justification [2] Hard copy reports Application
(ii)	Graphs Application Justification [2] Hard copy reports Application
(ii)	Graphs Application Justification [2] Hard copy reports Application

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4 A student has a stand-alone computer at home.

For
Examiner's
Use

Describe the following examples of utility software and state how they would be used by the student.

Disk formatter	
Description	
	••••
	[2]
Use	
	[1]
File compression	
Description	
	••••
Use	
	Use

A new piece of software has been produced to control a drilling machine on a production line.
State five sections that will be in the technical documentation required for maintaining the software.
1
2
3
4
5
[5]

6	(a)	Describe the functions of the ALU in the processor during the execution of instructions.	For Examiner's Use
		[3]	
	(b)	State what is meant by:	
		(i) a buffer	
		[1]	
		(ii) an interrupt	
		[1]	
	(c)	Describe how buffers and interrupts are used to control the transfer of data from primary memory to a printer on a stand-alone computer system.	
		[4]	

Explain the difference between serial and sequential organisation of files.			
	[2]		
(i)	The student file in a school administration system is implemented as a serial file.		
	If a new student begins at the school during the school year, state where their record will be added to the student file.		
	[1]		
(ii)	The student file in a school administration system is implemented as a sequential file.		
	If a new student begins at the school during the school year, describe how their record can be added to the student file.		
	[4]		
	 (i)		

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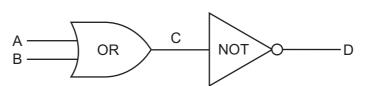
A p	ocke	et sized game system is based around a microprocessor.	For
(a)	(i)	State an input device which would be suitable for use in this application. Justify your choice.	Examiner's Use
		Device	
		Justification	
		[2]	
	(ii)	State an output device which would be suitable for use in this application. Justify your choice.	
		Device	
		Justification	
		[2]	
(b)	Dis	cuss the human computer interface (HCI), with reference to:	
	(i)	the colours	
	(ii)	the way that the content is laid out	
		[5]	
			1

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(a)	Describe what is meant by the following types of data transmission:				
	(i)	serial, half duplex transmission			
		[2]			
	(ii)	parallel, simplex transmission			
		[2]			
(b)	Def	ine the term protocol.			
		[2]			
(c)	cor	en data is transmitted between devices it can be corrupted. One method to detect ruption is the use of echoing. Plain how echoing can be used to detect the presence and correction of errors in a dismission.			

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10 (a) (i) Complete the truth table for this logic circuit.



Α	В	С	D
0	0		
0	1		
1	0		
1	1		

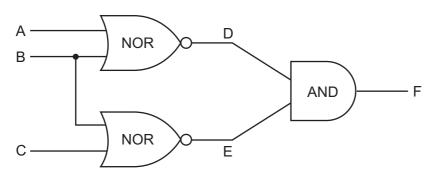
	1	
L	•	J
_		-

For Examiner's Use

(ii)	State a single logic gat	e which	would	have	the	same	final	outcome	as	this	pair	of
	logic gates.											

r	F 4	-
	11	1
	1 '	1
	-	-

(b) Complete the truth table for this logic circuit.



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А	В	С	D	E	F
0	0	0			
0	0	1			
0	1	0			
0	1	1			

[4]

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