

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS General Certificate of Education Advanced Subsidiary Level and Advanced Level

	CANDIDATE NAME			
	CENTRE NUMBER	CANDIE		
6 6 *	COMPUTING			9691/12
5 6	Paper 1		00	ctober/November 2012
2 9				1 hour 30 minutes
8 8	Candidates ans			
4	No additional ma	aterials are required.		
°	No calculators a	illowed.		

## 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.



(a)	(i)	Define what is meant by hardware.	For Examiner's
			Use
		[1]	
	(ii)	Define an input device and state why it is needed.	
		[3]	
A s	tude	nt is studying biology.	
(b)		e student's current project is to research the different types of creature found on a ach 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]	

1

(c) The student will also take a multiple choice examination paper as part of the assessment for the course. The exam papers will be input to a computer system using optical mark recognition (OMR) and then will be marked automatically.

Explain how the student's exam paper can be read using OMR and then marked automatically.

For

Examiner's Use

2	An expert system contains an inference engine.					
	Name <b>t</b> l	hree other parts of an expert system and state what each is used for.	Examiner's Use			
	Part 1					
	Part 2					
	•••••					
	Part 3					
	Parts					
	•••••	[6]				
	•••••	[0]				
3	Two out	tput formats are graphs and hard copy reports.				
	For eac each ca	h format state an application where it would be appropriate. Justify your choice in se.				
	(i)	Graphs				
		Application				
		Justification				
		[2]				
	(ii)	Hard copy reports				
		Application				
		Justification				
		[2]				

4

A student has a stand-alone computer at home. 4 For Examiner's Use Describe the following examples of utility software and state how they would be used by the student. (i) Disk formatter Description [2] Use ......[1] (ii) File compression Description \_\_\_\_\_ [2] Use \_\_\_\_\_ .....[1]

**5** A new piece of software has been produced to control a drilling machine on a production line.

For Examiner's Use

State **five** sections that will be in the technical documentation required for maintaining the software.

2 3 4	1	
2 3 4		
<sup>3</sup>		
34	2	
34		
4		
4	0	
	4	
5	5	
[5]		[5]

(a) Describe the functions of the ALU in the processor during the execution of instructions. \_\_\_\_\_ [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] .....

For Examiner's Use

6

8

(a)	Exp	plain the difference between serial and sequential organisation of files.	For Examiner's Use
		[2]	
(b)	(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]	

7

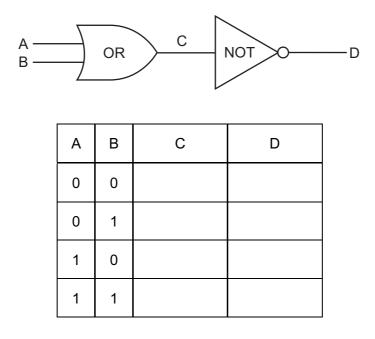
Use (a) (i) State an input device which would be suitable for use in this application. Justify your choice. Device Justification ..... [2] ..... (ii) State an output device which would be suitable for use in this application. Justify your choice. Device Justification ..... ..... [2] ..... (b) Discuss the human computer interface (HCI), with reference to: (i) the colours (ii) the way that the content is laid out ..... [5] .....

8 A pocket sized game system is based around a microprocessor.

For Examiner's

9	(a)	Des	scribe what is meant by the following types of data transmission:	For
		(i)	serial, half duplex transmission	Examiner's Use
			[2]	
		(ii)	parallel, simplex transmission	
			[2]	
			[2]	
	(b)	Def	ïne the term protocol.	
		•••••	[2]	
	(c)		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 new series in a new series in the series of t	
			[4]	I

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



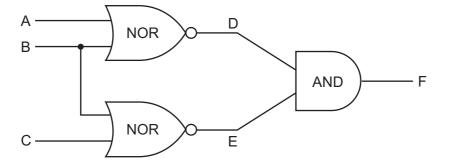
[1]

For Examiner's Use

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

[1	1
 F.,	-

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



А	В	С	D	Е	F
0	0	0			
0	0	1			
0	1	0			
0	1	1			

[4]

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