



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

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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COMPUTING

9691/01

Paper 1 Written

For Examination from 2011

SPECIMEN PAPER

1 hour 30 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

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.

Answer **all** questions.

No marks will be awarded for using brand names of 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.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
7	
8	
Total	

This document consists of **10** printed pages.



1 (a) State what is meant by

(i) operating system software,

.....
..... [1]

(ii) applications software.

.....
..... [1]

(b) Explain the difference between batch processing and real-time operating systems.

.....
.....
.....
..... [2]

(c) Identify **one** application which would need to use batch processing and give a reason for your answer.

Application

Reason

.....
..... [2]

2 (a) Explain the meaning of the following modes of data transmission.

(i) Simplex

.....
..... [1]

(ii) Full-duplex

.....
..... [1]

(iii) Half-duplex

.....
..... [1]

(b) (i) Describe how buffers and interrupts are used in the transfer of data from primary memory to secondary storage.

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.....
..... [5]

(ii) State which of the modes of data transmission in part (a) would be most suitable for the procedure in (b)(i), justifying your answer.

Mode of data transmission

Reason

..... [2]

(c) Communication between the computer system and the administration staff employed by the firm is to be through a human computer interface (HCI).

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Examiner's
Use*

Discuss the importance of:

(i) colour,

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.....

(ii) layout,

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.....
.....

(iii) content,

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.....
.....

in the design of the HCI.

[9]

- 5 The computer system in a factory is used to store personnel records and to manage the payroll. Workers in the factory register when they arrive for work by placing a card in a machine (clocking on) and repeating the process when leaving (clocking off). This machine is not connected to the main computer system, although the information collected will eventually be used as the input to a device which will provide data for the payroll program.

The data on the cards consists of a barcode and OCR data.

Describe how these two types of data are read by the input device.

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.....

State what the data are used for in this application.

.....

..... [6]

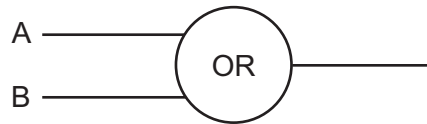
6 (a) Describe how an array is initialised in the memory of a computer.

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.....
..... [4]

(b) Describe how the contents of an array may be searched serially to find a specific item.

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.....
.....
..... [4]

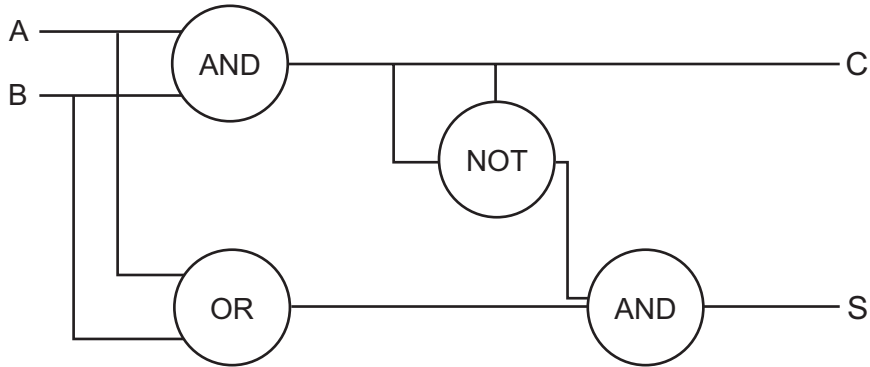
7 (a) Complete this table for an OR gate.



A	B	Output
0	0	
0	1	
1	0	
1	1	

[2]

(b) (i) Complete this table for the circuit.



A	B	C	S
0	0		
0	1		
1	0		
1	1		

[4]

(ii) Give a possible use for this circuit in a processor, explaining your answer.

.....

.....

.....

..... [2]

8 (a) State what is meant by a protocol.

.....
.....
.....
..... [2]

(b) Communication across a network can be done by using circuit switching or packet switching.

(i) Explain the difference between circuit switching and packet switching.

.....
.....
.....
..... [2]

(ii) Give **one** advantage of using circuit switching when sending data across a network.

.....
.....

(iii) Give **one** advantage of using packet switching when sending data across a network.

.....
..... [2]

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