



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

9691/11

Paper 1

October/November 2011

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 **10** printed pages and **2** blank pages.



1 (a) Describe the purpose of storage devices.

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..... [2]

(b) A student has a computer at home as well as using computers at school. State **two** different storage devices that the student would use on her computer and explain what she would use each for.

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..... [4]

(c) The operating system controlling the student's home computer is a single-user, multi-tasking operating system.

(i) Describe a single-user, multi-tasking operating system.

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(ii) Explain how the student can use this type of operating system.

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..... [4]

2 (a) In the systems development life cycle, describe what is involved when designing a new system.

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..... [4]

(b) When a new system has been developed it must be installed into the organisation for which it has been produced. Describe the tasks involved in installation planning and of implementing the system into the organisation.

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5 (a) (i) Describe the structure of a one-dimensional array.

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(ii) Explain how a simple serial search can be carried out to locate a specific item in a one-dimensional array.

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(b) Describe how a queue is implemented using an array.

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..... [4]

6 An air conditioning system is used to control the temperature in a room.
State an example of each of the following types of peripheral which would be used on
system giving a use for each.

(i) An input device

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..... [2]

(ii) An output device

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..... [2]

7 (a) A bank has a customer file containing the transactions made by its customers.
The file is used to

- produce a bank statement for each customer once a month
- answer customer queries when the customer telephones the bank

(i) Explain why the telephone operator uses a forms-based interface when taking
details of the query from the customer.

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(ii) Explain why an indexed sequential file is used to allow access to the data in a customer file.

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(b) Data in the customer file is regularly backed up.

(i) Explain why taking back-ups is necessary.

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(ii) Describe a procedure for doing back-ups.

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..... [4]

8 The computers in a school classroom are networked. It is decided that this network be linked to the Internet.

(a) State **two** items of hardware and **one** type of software which would be necessary to connect this network to the Internet.

Hardware 1

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Hardware 2

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Software

..... [3]

(b) When a video file is accessed on a network it can be watched as it is downloading or it can be stored for watching at a later date.
Explain the relationship between the required bit rates and the data being transmitted.

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(c) When communications are required across a network a protocol is necessary.

(i) Explain the need for a handshake as part of a protocol, giving examples of what occurs during a handshake.

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(ii) Explain why a protocol consists of a number of layers.

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(d) The school uses off-the-shelf software.

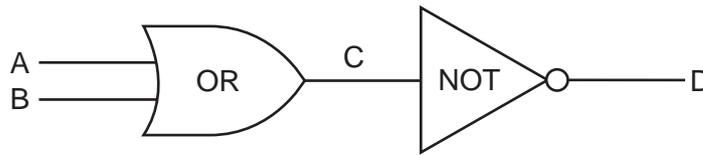
(i) State what is meant by off-the-shelf software.

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(ii) Explain the advantages of using off-the-shelf software.

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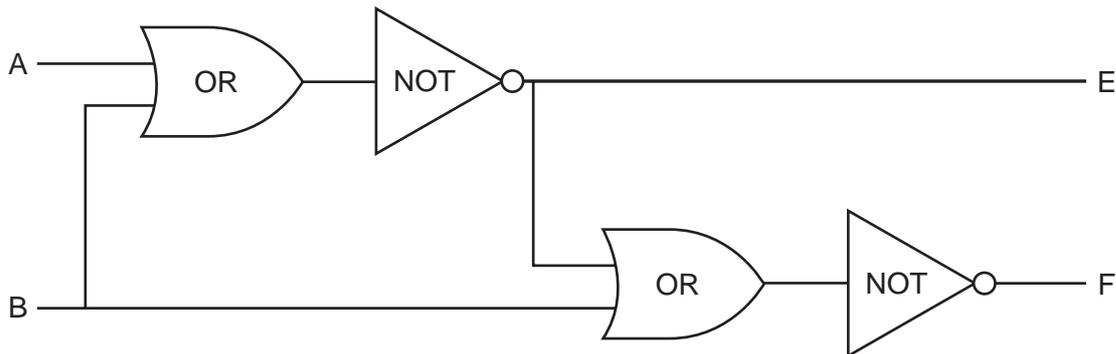
9 (a) Complete the table to show the outputs for the possible inputs to this circuit.



A	B	C	D
0	0		
0	1		
1	0		
1	1		

[2]

(b) Complete the table to show the outputs for the possible inputs to this circuit.



A	B	E	F
0	0		
0	1		
1	0		
1	1		

[4]

