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

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

COMPUTING **9691/13**

Paper 1 **May/June 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.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

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1 (a) Define the terms:

(i) input device

....

....

(ii) storage device

....

.... [2]

A cinema has a number of places where customers can buy their tickets.
Data is input by the cashiers at the terminals and information is produced.

(b) State **two** input devices which would be used at the terminals, justifying their use.

Device 1 ....

Justification ....

....

Device 2 ....

Justification ....

.... [4]

(c) State **two** types of output needed at the point-of-sale terminals. For each type of output explain why it is needed.

Output 1 ....

....

....

Output 2 ....

....

.... [4]

(d) The management of the cinema use a number of different types of software.
State what each of the following types of software would be used for.
Give a feature of each which makes it suitable for your use.

(i) Desktop publisher (DTP)

Use ....

....

Feature ....

.... [2]

(ii) Word processor

Use ....

....

Feature ....

.... [2]

(iii) Spreadsheet

Use ....

....

Feature ....

.... [2]

2 A systems analyst is employed to produce a new stock control system for a company. The manager of the company is not satisfied with the present system.

(a) Explain the importance of determining the information requirements of the new system in consultation with the manager of the company.

....

....

....

....

....

.... [4]

(b) (i) Explain why it is important **to the analyst** to have the new system tested.

....

....

....

.... [2]

(ii) Explain why it is important **to the manager** to have the new system tested.

....

....

....

.... [2]

3 **(a)** Explain how a character is represented in a computer.

....

....

....

.... [2]

(b) Explain how integers are represented in a computer.

....

....

....

....

....

.... [3]

(c) Explain how a Boolean value is stored in a computer.

....

....

....

.... [2]

4 A library membership system identifies members by their unique 6-digit ID number. When a member takes a book out of the library their ID number and the details of the loan are stored on a serial file.

(a) State how the details of a new loan are added to the serial file.

....

.... [1]

(b) The member file is held sequentially according to the ID numbers.

(i) Explain how indexes are used to access the member file.

....

....

....

....

....

.... [3]

(ii) When a new member joins the library their details are added to the member file. Explain how a new ID number is added to the index in the correct position.

....

....

....

.... [2]

5 **(a)** **(i)** Explain **two** differences between ROM and RAM as types of primary memory.

1 ....

....

2 ....

.... [2]

(ii) State an example of what would be stored in ROM and justify your answer.

Example ....

Justification ....

.... [2]

(iii) State an example of what would be stored in RAM and justify your answer.

Example ....

Justification ....

.... [2]

(b) **(i)** Explain the problem of speed mismatch between peripheral and processor.

....

....

....

(ii) Describe how this speed mismatch can be overcome.

....

....

....

.... [5]

6 Complete the table for this circuit of logic gates.
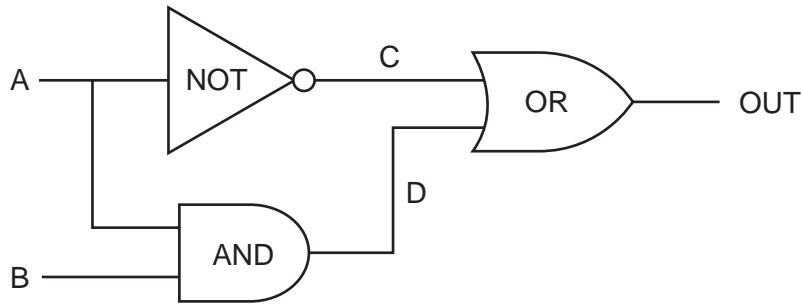
A	B	C	D	OUT
0	0			
0	1			
1	0			
1	1			

[6]

7 A spelling game is being produced which is aimed at young children who are learning to read and write.
Discuss how the use of colour, layout and content will influence the design of the human computer interface (HCI).

Colour ....

....

....

....

Layout ....

....

....

....

Content ....

....

....

.... [6]

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8 (a) State **two** differences between a local area network (LAN) and a wide area network (WAN).

1 ....

....

2 ....

.... [2]

(b) (i) State what is meant by data being transmitted serially using a simplex mode of data transmission.

....

....

....

.... [2]

(ii) State what is meant by data being transmitted in parallel using a half duplex mode of data transmission.

....

....

....

.... [2]

(c) The following bytes were sent during a data transmission.

01101100   10101010   10110001

Explain how a check sum can be used to check whether or not the bytes have been corrupted during transmission.

....

....

....

....

.... [3]

9 (a) Explain the difference between a multi-user operating system and a computer network operating system.

....

....

....

.... [2]

(b) Describe how a batch processing system works.

....

....

....

....

....

....

....

.... [4]

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