CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

COMPUTING **9691/12**

Paper 1

May/June 2011

1 hour 30 minutes

Candidates answer on the Question Paper.

No additional materials are required.

No calculators allowed.

SUITABLE FOR HEARING IMPAIRED CANDIDATES

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 **11** printed pages and **1** blank page.

[Turn over

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1 **(a)** Define the terms:

   (i) hardware

   ....

   ....

   (ii) software

   ....

   .... [2]

A supermarket has a number of point-of-sale terminals.
Data is read from goods at the terminals and information is produced.

(b) State **two** output devices which would be used at the point-of-sale, giving a reason for their use.

   Device 1 ....

   Reason ....

   ....

   Device 2 ....

   Reason ....

   .... [4]

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

   Output 1 ....

   ....

   ....

   Output 2 ....

   ....

   ....

   Output 3 ....

   ....

   .... [6]

(d) The management of the supermarket 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 their use.

(i) Desktop publishing (DTP)

Use ....

....

Feature ....

.... [2]

(ii) Presentation software

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 to both analyst and manager of defining the problem accurately. You should make clear the part played by each person.

....

....

....

....

....

.... [4]

(b) (i) Explain how the evaluation of the new system will be carried out.

....

....

....

....

(ii) Explain why the evaluation is important to both the analyst and the manager.

....

....

....

.... [4]

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3   (a) (i) Explain what is meant by the character set of a computer.

....

....

....

....

     (ii) Explain how a character is represented in a computer.

....

....

....

.... [4]

   (b) Explain the representation of integers in a computer.

....

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....

....

.... [3]

4   A library membership system identifies members by their unique 6-digit ID number.

(a) Explain how the member file could be accessed using indexes.
(You may find it helpful to draw a diagram.)

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[2]

(b) (i) Explain how hashing could be used to access the member file randomly.

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....

(ii) Clashes can occur when the member file is accessed using hashing.
State what is meant by a clash and how it can be dealt with.

....

....

....

.... [4]

5 **(a)** Describe the purpose of each of the following parts of a processor:

   (i) Control unit

....

....

....

.... [2]

   (ii) Memory unit

....

....

....

.... [2]

  (iii) ALU

....

....

....

.... [2]

(b) Describe the use of buffers and interrupts in the transfer of data between primary memory and hard disk.

....

....

....

....

....

....

....

....

.... [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 An interactive computer system in a shopping mall is intended to give information to customers.

Discuss how the use of colour, layout and content will influence the design of the human computer interface (HCI).

Colour ....

....

....

....

Layout ....

....

....

Content ....

....

....

.... [6]

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

1 ....

....

2 ....

.... [2]

(b) State what is meant by each of the following types of data transmission.   Give an advantage of each.

(i) Serial   ....

....

Advantage   ....

....

(ii) Parallel   ....

....

Advantage   ....

.... [4]

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

01101101 10101010 10111101 10110001

Parity is being used as an error check.
State which **one** of the bytes has been corrupted. Explain why you chose the one that you did.

Corrupted byte ....

Reason ....

....

.... [3]

9 (a) Describe a single-user operating system.

....

....

....

.... [2]

(b) Explain how a multi-user operating system allows many users to use the computer system.

....

....

....

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....

....

....

.... [4]

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