General Certificate of Secondary Education
June 2004

INFORMATION AND COMMUNICATION TECHNOLOGY 3528/HR
SPECIFICATION B (SHORT COURSE)
Higher Tier

Monday 24 May 2004 1.30 pm to 3.00 pm

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ASSESSMENT and
QUALIFICATIONS
ALLIANCE

No additional materials are required.
You may use a calculator.

Time allowed: 1 hour 30 minutes

Instructions.
- Use a blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** the questions in the spaces provided.

Information
- The maximum mark for this paper is 60.
- Mark allocations are shown in brackets.

3528/HR

Answer **all** questions in the spaces provided.

1 Roboshop sell robots.
   A secretary is writing a letter using wordprocessing software. The letter looks like this:

Roboshop
Unit 12
Xenon Industrial Estate
Acton
AC1 2DH

01247 343434

12/05/2004

Dear Mr Pettiford,

Many thanks for your order for robot R32. This is now out of stock. New
stocks will be not available for at least 6 months.

You could purchase robot R35. This is available immediately from stock.
By purchasing robot R35, you would receive a higher specification robot at
a lower price.

Please consider our offer and let me know if you wish to purchase robot
R35. I will reserve one of these for you for one week.

Yours sincerely,

J Wood

J Wood

(a) The secretary has a picture of the robot that has been saved on disk.
     Describe how the picture of the robot can be put into the letter.

     ....

     ....

     ....

     ....

     ....

     ....
                                                                                              (2 marks)

(b) The secretary wants to improve the appearance of the letter.
     State **two** other features of wordprocessing software that could be used to improve the
     appearance of the letter.

     Feature 1: ....

     Feature 2: ....
                                                                                              (2 marks)

(c) (i) The secretary wants to send an e-mail to the manufacturer that makes the robots.
          The secretary inserts attachments in the e-mail.
          The attachments are sent to the manufacturer with the e-mail.
          Tick **two** boxes to show items that can be inserted as an attachment.

	Tick **two** boxes
A website	
A word processed document	
An Internet Service Provider (ISP)	
A spreadsheet	
A hyperlink	

                                                                                              (2 marks)

     (ii) State **one** other item that can be inserted as an attachment.

          ....

          ....
                                                                                              (1 mark)

$\overline{7}$

Turn over ▶

2 A plumber uses a computer to estimate the cost of refitting a bathroom for a customer. This is part of the information displayed on the monitor.

	A	B	C	D
1	**Materials**	**Unit Cost**	**Quantity**	
2	Bath	£400.00	1	£400.00
3	Bath taps	£100.00	2	£200.00
4	Basin	£90.00	1	£90.00
5	Basin taps	£75.00	2	£150.00
6	Shower unit	£100.00	1	£100.00
7	Copper pipe (2 metres)	£25.00	6	£150.00
8	Total cost of materials			£1090.00
9	Labour costs			£500.00
10	Total cost of materials and Labour			£1590.00
11	VAT at 17.5%			£278.25
12	Total cost to customer			£1868.25

(a) Name the type of software the plumber has used.

....
(1 mark)

(b) Write the cell reference (if any) of the cell that contains each formula.
If the formula is not in any cell, write 'none'.

Formula	Cell reference
=B5*C5	
=SUM(D2:D7)	

(2 marks)

(c) The plumber is going to buy a new standalone computer to run the software.
The plumber looks at adverts in the newspapers to find a suitable computer.

   (i) Name **two** input devices the computer could have other than a keyboard.
   For each input device, describe what it could be used for.

   Name of input device 1:..

   What it could be used for:...

   ....

   Name of input device 2:..

   What it could be used for:...

   ....
   (4 marks)

   (ii) Name **one** backing storage device the computer could have.

   ....
   (1 mark)

TURN OVER FOR THE NEXT QUESTION

3 A hospital keeps information about patients in a database on a computer.
This is part of the database.

Patient Number	Patient Name	Gender	Admission Date	Doctor
0232	McLoughlin	M	07/02/2004	Clarke
0617	Iqbal	F	07/01/2004	Stevens
0825	Morgan	F	20/03/2004	Stevens
0713	Rooney	M	15/03/2004	Clarke
0324	Wrig75	F	04/01/2004	Harrison
0611	Feather	M	17/04/2004	Stevens

The information about a patient is written on a form by the doctor.
The information on the form is input to the computer by a clerk.

(a) An error has been made. A **Patient Name** has been input incorrectly.

Tick **one** box to show a verification check that should detect this error.

	Tick **one** box
The clerk inputs the **Patient Name** then inputs the information on the next form.	
When the **Patient Name** has been input, the clerk checks again that the **Patient Name** on the monitor is the same as that on the form.	
The check digit is re-calculated when the **Patient Name** is input.	
The **Patient Number** is input twice.	
The **Patient Name** is input by the doctor as the doctor is more accurate than the clerk.	

(1 mark)

(b) The **Patient Number** is the key field.

Describe **one** essential feature of a key field.

....

....

(1 mark)

(c) Patients' **Gender** is coded.

Describe **two** advantages of coding information.

Advantage 1:...

....

Advantage 2:...

....

(2 marks)

(d) Write down the **Patient Names** in the order they would appear after the database has been sorted into ascending order on the **Admission Date** field.
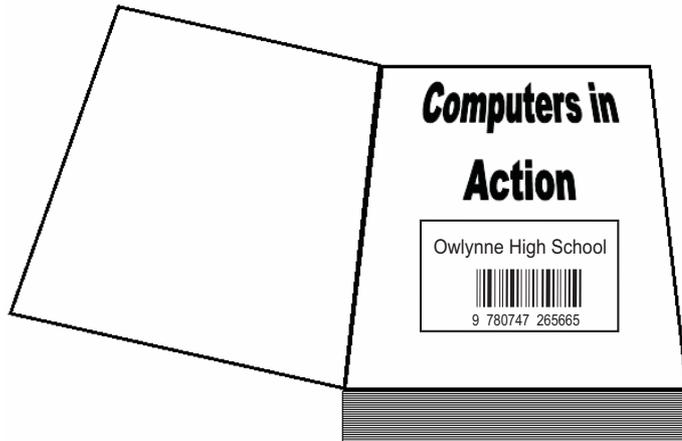
Patient Name

(3 marks)

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TURN OVER FOR THE NEXT QUESTION

Turn over ▶

4 Books in a school library are identified by a bar code inside the front cover.

Computers in Action

Owlynne High School

9 780747 265665

(a) Give **one** reason why the number is printed under the bar code.

....

....
(1 mark)

(b) Each pupil at the school has a library card.

Charles Henry Year 7

Owlwynne High School

0 695 595 342 4568 00213
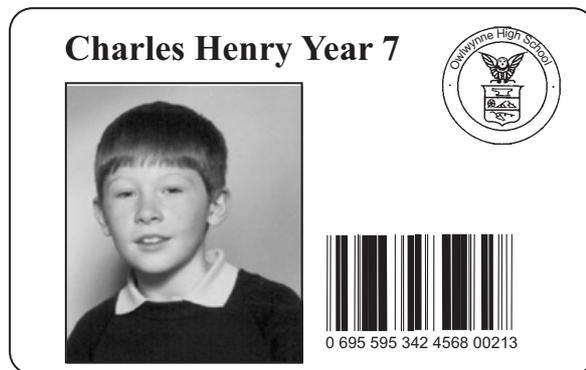
A pupil borrows a book from the school library.
The librarian scans the bar code on the library card and the bar code on the book.

Explain why the bar code on the library card and the bar code on the book are both scanned when a book is borrowed from the library.

....

....

....

....
(2 marks)

(c)   The library software runs on a LAN (Local Area Network). Users can print book lists.

Draw a **labelled** diagram of the LAN. You should show on the diagram a fileserver and at least three computers connected to the LAN.

(3 marks)

(d)   Complete the sentence using words from this list:

parents
librarians
the headteacher
the network manager
the school secretary

Technical documentation could be useful to ....

(1 mark)

(e)   The hardware and software used by the library computer system are very expensive.
Justify the use of a computer system in the library.

....

....

(1 mark)

8

0204/3528/HR

5 (a) A student writes a program in Logo.

These are examples of Logo instructions.

Instruction	What the instruction does
clearscreen	clears the screen
forward 5	moves the pen forward 5 squares
left 90	turns the direction of the pen ninety degrees to the left
right 45	turns the direction of the pen forty-five degrees to the right
repeat 4 [instructions]	repeats the instructions in the bracket 4 times

This shape is produced by these Logo instructions. The grid is not produced but is shown to help you.
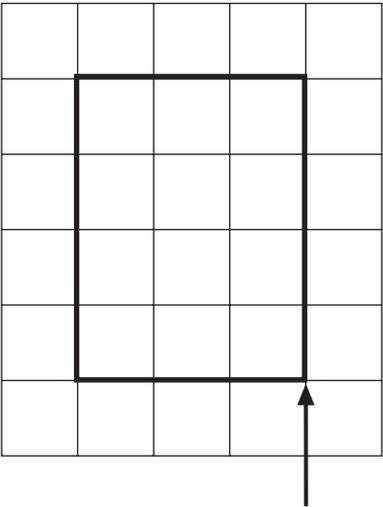
Display	Logo instructions
start here	clearscreen repeat 2 [forward 4 left 90 forward 3 left 90]

Write the Logo instructions to produce this shape.
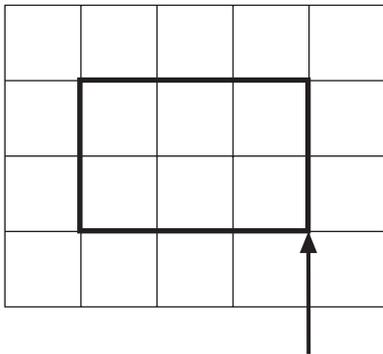
Display	Logo instructions
start here	....

(2 marks)

(b)   Some Logo instructions should display a square but they do not work.

To show a method of developing and testing these Logo instructions, you should:

- Write the labels of these statements below in the boxes of the flowchart.
- Complete the flowchart, including lines with arrows to show direction.

Label	Statement
A	The picture produced is displayed on the screen
B	Change the Logo instructions
C	Is the picture a square?
D	Run the Logo instructions

Start

End

(6 marks)

8
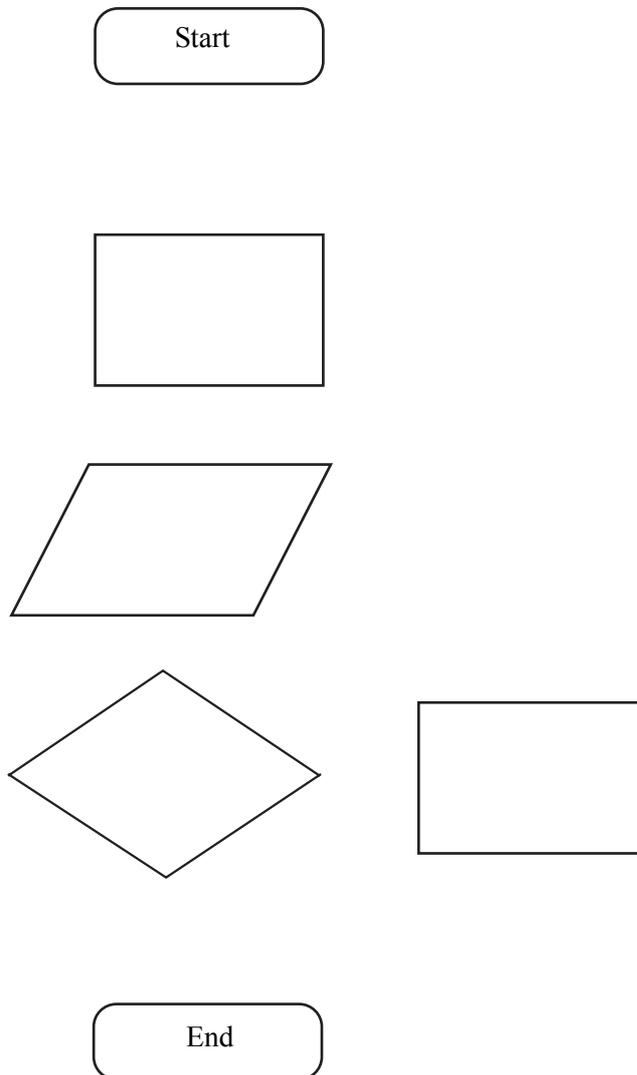
6 (a) When students log on to a network from a computer connected to it, they have to enter a username and a password.

Describe **one** sensible rule about passwords.

....

....
(1 mark)

(b) A student sometimes saves work on the hard disk of the computer being used on the network.

(i) Give **one** reason why this work is not secure.

....

....
(1 mark)

(ii) Describe what is meant by a backup.

....

....
(1 mark)

(iii) Describe **one** way students could make a secure backup of their work.

....

....

....

....
(2 marks)

(c) A student downloads some software from the Web and tries to install it on one of the computers on the network.
The computers have been set up so that students are prevented from installing software.
Give **one** reason why the computers have been set up in this way.

....

....
(1 mark)

(d) Students using computers connected to the network find that Internet access is very slow.
Give **one** reason why Internet access could be slow.

....

....
(1 mark)

7

7 (a) An accountant uses a computer at home and another computer at work.

The accountant usually works from home, but occasionally travels by car to the firm's head office in a large city.

(i) Tick **one** box to name this way of working.

	Tick **one** box
e-commerce	
teleworking	
multimedia	
downloading	
networking	

(1 mark)

(ii) Give **one** reason why this way of working can help improve the environment.

....

....

(1 mark)

(b) Describe **one** health hazard due to using a computer, and explain how this could be avoided.

Health hazard ....

....

How to avoid the health hazard ....

....

(2 marks)

(c) The Internet can be accessed throughout the world.
Explain why people in developing countries may find it hard to access the Internet.

....

....

....

....

....

....

(3 marks)

7

Turn over ▶

8 (a) Some people say that computers are more intelligent than people.

(i) Tick **one** box to show something people can do that computers cannot do.

	Tick **one** box
Print books	
Make cars	
Total the shopping bill at a checkout	
Experience religious insights and prayer	
Control the production of soft drinks	

(1 mark)

(ii) Tick **one** box to show something computers can do better than people.

	Tick **one** box
Control the operation of traffic lights	
Design new clothes	
Do the ironing	
Decide what colour to paint a room	
Help a friend	

(1 mark)

(b) Some people have parts of their bodies replaced or enhanced by computerised devices. Discuss the advantages and disadvantages of this.

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(6 marks)

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE

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