AQA

General Certificate of Secondary Education
Higher Tier
June 2010

Information and Communication Technology (Specification B)(Full Course)

3522/H

H

Written Paper

Monday 21 June 2010   9.00 am to 11.00 am

> **You will need no other materials.**
> You may use a calculator.

Time allowed
● 2 hours

Instructions
● Use black ink or black ball-point pen.
● Fill in the boxes at the top of this page.
● Answer **all** questions.
● You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
● Do all rough work in this book. Cross through any work you do not want to be marked.

Information
● The marks for questions are shown in brackets.
● The maximum mark for this paper is 120.

3522/H

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

1   ZoneGem sells watches and jewellery.
A secretary is writing a letter using word processing software. The letter looks like this.

ZoneGem
Universe House
Little Norton
Anderstown
AN12 2ZZ

01288 674765
bn@ZoneGem.com

21/06/2010
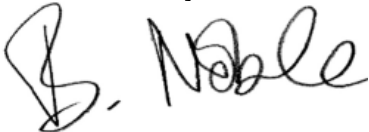
Dear Mr Kowalczyk

Manyy thanks for your order. We do not have all the items on your order in stock.

You can choose: next day delivery; within 3 working days; or economy.   }Paragraph A

We have the SWgold watch in stock at a cost of £350.   }Paragraph B

Yours sincerely

B. Noble

B Noble

---

1 (a)   Tick **three** boxes to show features of word processing software that could be used to improve the letter.

	Tick **three** boxes
Bar chart	
Bold	
Sound	
Font size	
Wizard	
Spell checker	

(3 marks)

1 (b) The secretary wants to align some text.
Write **one** label in each box to name the type of alignment shown.

Label	Type of Alignment
A	Left
B	Centred
C	Right
D	Justified
E	Horizontal

1 (b) (i)

	Write **one** label in the box

(1 mark)

1 (b) (ii)

	Write **one** label in the box

(1 mark)

1 (c) Describe how the secretary could rearrange the letter so that paragraph A is below paragraph B.

....

....

....

....

(2 marks)

Turn over ▶

1 **(d)** The secretary is designing a logo for ZoneGem to be used in the letter heading.
Write **one** label in each box to name the feature used.
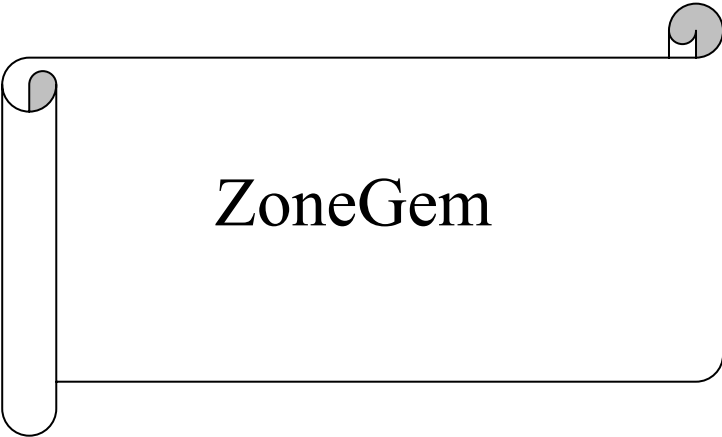
Label	
A	Page layout
B	Wizard
C	Autoshape
D	Template
E	Word art
F	Text box

1 **(d) (i)**

Feature	Write **one** label in the box
ZoneGem	

(1 mark)

1 **(d) (ii)**

Feature	Write **one** label in the box
ZoneGem	

(1 mark)

1 (d) (iii)

Feature	Write **one** label in the box
ZoneGem	

(1 mark)

1 (e) The secretary inserts a picture of the SWgold watch that has been saved on the hard disk.

1 (e) (i) Tick **two** boxes to show different file types the picture could have.

	Tick **two** boxes
.doc	
.xls	
.bmp	
.html	
.gif	

(2 marks)

1 (e) (ii) State **one** other file type the picture could have.

....

(1 mark)

1 (f) The secretary sends the letter as an e-mail attachment.
Describe **two** possible security threats to ZoneGem.

Security threat 1:...

....

Security threat 2:...

....

(2 marks)

15

Turn over ▶

2   A plumber uses a computer to work out the cost of refurbishing a kitchen for a customer.

Part of the information displayed on the monitor is shown below.

	A	B	C	D
1	**Materials**	**Unit Cost**	**Quantity**	
2	Sink	£200.00	1	£200.00
3	Sink taps	£50.00	2	£100.00
4	Washing machine	£350.00	1	£350.00
5	Washing machine taps	£25.00	2	£50.00
6	Wall tiles	£2.00	50	£100.00
7	Floor tiles	£5.00	100	£500.00
8	Total cost of materials			£1300.00
9	Labour costs			£500.00
10	Total cost of materials and labour			£1800.00
11	VAT			£270.00
12	Total cost to customer			£2070.00

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

....
(1 mark)

2 (b)   Write **one** cell reference in each box to show a cell with the feature described.

2 (b) (i)

Feature	Write **one** cell reference in the box
Cell content is number	

(1 mark)

2 (b) (ii)

Feature	Write **one** cell reference in the box
Cell format is currency	

(1 mark)

2 (b) (iii)

Feature	Write **one** cell reference in the box
Cell content is the formula =B5*C5	

(1 mark)

2 (b) (iv)

Feature	Write **one** cell reference in the box
Cell content is the formula =SUM(D2:D7)	

(1 mark)

2 (b) (v)

Feature	Write **one** cell reference in the box
Cell content is the formula =D10+D11	

(1 mark)

2 (c) Describe the advantages and disadvantages to the plumber in using the software.

....

....

....

....

....

....

....

....

(4 marks)

2 (d) The plumber's employer provides a laptop computer and portable printer. The plumber uses the laptop computer to play online games on the Internet during working hours.

Tick **two** boxes to show why the plumber should not do this.

	Tick **two** boxes
The laptop computer has a firewall and antivirus software	
The plumber has received an e-mail from an Internet bank	
The plumber should be working not playing online games on the Internet	
The laptop computer does not have database software	
The plumber's employer has told the plumber that the laptop computer should only be used to help with the plumber's job	

(2 marks)

Question 2 continues on the next page

Turn over ▶

2 (e) The laptop computer has been infected by malicious software downloaded from the Internet.

2 (e) (i) Tick **two** boxes to show what could be done to help protect the laptop computer.

	Tick **two** boxes
Encrypt e-mails	
Use antivirus software	
Use a burglar alarm	
Only allow access to trusted websites	
Employ a supervisor to make sure the plumber uses the laptop computer only to help with the plumber's job	

(2 marks)

2 (e) (ii) Describe **one** other way to help protect the laptop computer.

....

....

(1 mark)

15

3 A doctor looks at information about patients on a computer.
This is part of the information displayed on the monitor.

	Patient Number	Surname	Gender	Admission Date	Doctor
	0263	Janiak	F	07/04/2010	Parkinson
	0061	Singh	M	03/04/2010	Aziz
	0882	Walton	R	20/03/2010	James
	0371	Bolton	F	15/03/2010	Parkinson
	0453	Jackson	M	10/01/2010	Parkinson
▶					

3 (a) Tick **one** box to show the type of software the doctor would use.

	Tick **one** box
presentation	
database	
graphics	
e-mail	
library	

(1 mark)

3 (b) State **two** other fields that should be included in a patient's record and give reasons why the doctor would find the fields useful.

Field that should be included 1:

....

Reason why the doctor would find the field useful 1:

....

....

Field that should be included 2:

....

Reason why the doctor would find the field useful 2:

....

....

(4 marks)

Turn over ▶

	Patient Number	Surname	Gender	Admission Date	Doctor
	0263	Janiak	F	07/04/2010	Parkinson
	0061	Singh	M	03/04/2010	Aziz
	0882	Walton	R	20/03/2010	James
	0371	Bolton	F	15/03/2010	Parkinson
	0453	Jackson	M	10/01/2010	Parkinson
▶					

3 (c) A **Gender** has been input incorrectly.
Tick **one** box to show a validation check that would detect this error.

	Tick **one** box
Range check	
Check digit	
Type check for alphanumeric data	
Type check for numeric data	
Table look-up	

(1 mark)

3 (d) The **Patient Number** is the key field.
Tick **two** boxes to show essential features of a key field.

	Tick **two** boxes
A key field cannot be left blank	
A key field must have the same value in every column	
Names make better key fields than numbers in a large database	
A key field must be different in every record	
Patients have a right to know their patient number	

(2 marks)

3 (e) The Gender field has been coded. Give **two** reasons why data is coded.

Reason 1: ....

....

Reason 2: ....

....

(2 marks)

3 (f) The information displayed on the monitor has already been sorted.
Write **one** label in each box to complete the sentence.

Label	
A	**Admission Date**
B	ascending
C	random
D	descending
E	**Gender**
F	**Surname**

The records have been sorted into ☐ order on the ☐ field. *(2 marks)*

3 (g) The doctor is searching for patients' information.

3 (g) (i) Write down the **Surname(s)** in the record(s) selected using this search condition.

Search Condition: **Admission Date** is NOT greater than 18/03/10
Surname(s) in the record(s) selected:

....
(1 mark)

3 (g) (ii) Write down the **Surname(s)** in the record(s) selected using this search condition.

Search Condition: **Gender** is F AND **Doctor** is Parkinson
Surname(s) in the record(s) selected:

....
(1 mark)

3 (g) (iii) Write down the **Surname(s)** in the record(s) selected using this search condition.

Search Condition: **Admission Date** is 10/01/2010 OR **Patient Number** is 0061
Surname(s) in the record(s) selected:

....
(1 mark)

15

Turn over ▶

4 E-mail is used at work and at home.

4 (a) Write down **one** valid e-mail address.

....

(1 mark)

4 (b) Name **one** type of file that can be attached to an e-mail.

....

(1 mark)

4 (c) When you receive an e-mail on a computer, you can reply to it, forward it or delete it. Tick **two** boxes to show which of these statements are true.

	Tick **two** boxes
When you reply to an e-mail, the e-mail is automatically addressed to the person who sent it to you	
When you forward an e-mail, you have to enter the e-mail address of the person you are sending it to	
When you forward an e-mail, all attachments are removed	
When you have sent an e-mail, you can never look at it again	
You can receive e-mail that is not addressed to you	

(2 marks)

4 (d) Files attached to e-mails can be zipped.

4 (d) (i) Tick **one** box to show a feature of a zipped file.

	Tick **one** box
A zipped file cannot be saved on a hard disk	
A zipped file is always very small	
A zipped file is always very big	
A zipped file is more secure	
A zipped file is compressed	

(1 mark)

4 (d) (ii) Give **two** other reasons why a file would be zipped.

Reason 1: ....

....

Reason 2: ....

....

(2 marks)

4 (e) A householder is buying the weekly shopping online and discovers a new website for shopping.
The home page is attractively designed with pictures of goods for sale on it.
The householder wants to persuade a friend to use this website. The householder could e-mail the home page to the friend or could send an e-mail with a link to the home page in it.

4 (e) (i) Tick **one** box to show an advantage to the householder in e-mailing the home page.

	Tick **one** box
When opened, the e-mail shows immediately that the home page is attractive	
The e-mail is automatically virus checked when downloaded	
The e-mail is smaller and will upload and download faster	
The e-mail link is in an attractive font and colour	
The e-mail is larger and will upload and download more slowly	

(1 mark)

4 (e) (ii) Tick **one** box to show an advantage to the householder in sending an e-mail with a link to the home page in it.

	Tick **one** box
When opened, the e-mail shows immediately that the home page is attractive	
The e-mail is automatically virus checked when downloaded	
The e-mail is smaller and will upload and download faster	
The e-mail link is in an attractive font and colour	
The e-mail is larger and will upload and download more slowly	

(1 mark)

Question 4 continues on the next page

Turn over ▶

4 (f) The householder is having difficulty with the new website and needs to contact the owners.
This hyperlink is on the home page: <u>Contact us by e-mail</u>
Describe what would happen when the householder clicks on the hyperlink.

....

....

....

....

(2 marks)

4 (g) Discuss the advantages and disadvantages of shopping online compared with going to the shops.

....

....

....

....

....

....

....

....
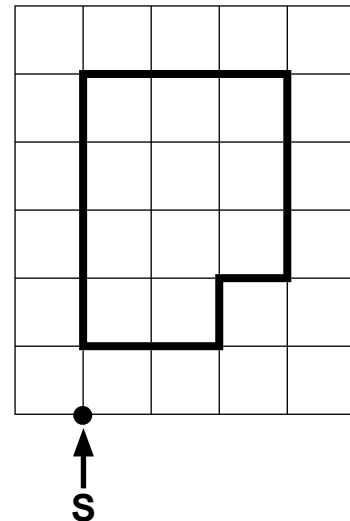
(4 marks)

15

5   A worker is using a computer controlled cutter to cut a shape out of a sheet of rigid plastic.

These are examples of instructions that control the cutter.

| Instruction	What the cutter does
Up	The cutter stops cutting and is raised above the plastic sheet
Down	The cutter moves into the cutting position on the plastic sheet
Move 5	Move forward 5 units. In the down position the plastic sheet will be cut but in the up position the cutter moves over the sheet without cutting it
Left	Turn left 90 degrees
Right	Turn right 90 degrees
To start	Returns the cutter to the starting position

5 (a)   These instructions cut out the shape below. The cutter starts at S and is returned to S.

Up
Move 1
Down
Move 4
Right
Move 3
Right
Move 3
Right
Move 1
Left
Move 1
Right
Move 2
Up
To start

Draw on the grid the shape cut out by the instructions below. You should start at S and return to S.

Up
Move 2
Down
Move 2
Right
Move 3
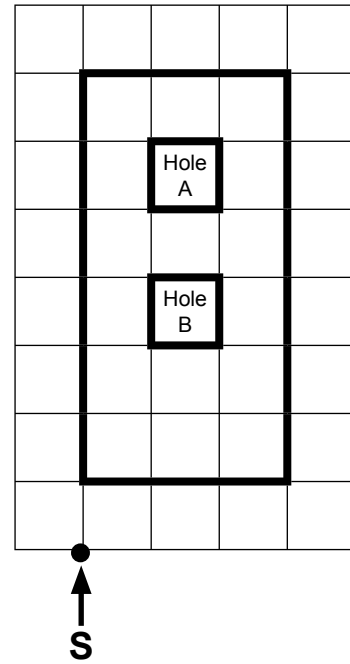Right
Move 2
Right
Move 3
Up
To start
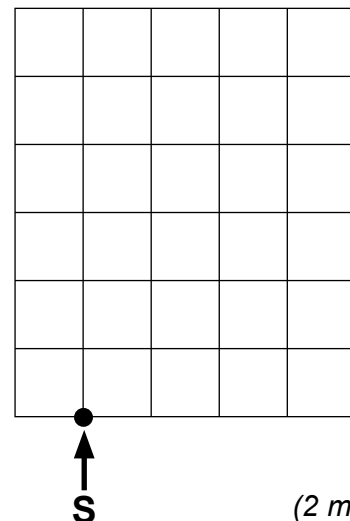
(2 marks)

Turn over ▶

5 **(b)** These instructions remove hole A. The cutter starts at S and is returned to S.

Up
Move 5
Right
Move 1
Down
Move 1
Left
Move 1
Left
Move 1
Left
Move 1
Up
To start

Write the instructions to remove hole B. The cutter starts at S and is returned to S.

....

....

....

....

....

....

....

....

....

....

....

....

....

(4 marks)

5 (c) Write the instructions to cut out the shape below. The cutter starts at S and is returned to S.

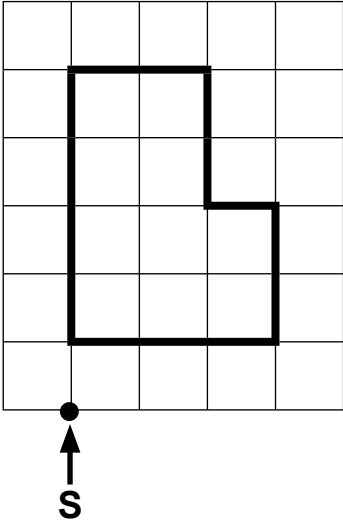..

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

..

(4 marks)

Question 5 continues on the next page

Turn over ▶

5 **(d)** The worker writes some instructions to cut out a shape but they do not cut out the shape wanted.
Write the labels of these statements in the flowchart boxes to show a method of developing and testing the instructions.

Label	Statement
A	Is the shape wanted cut out?
B	Change the instructions
C	Run the instructions

Start

No

Yes

End
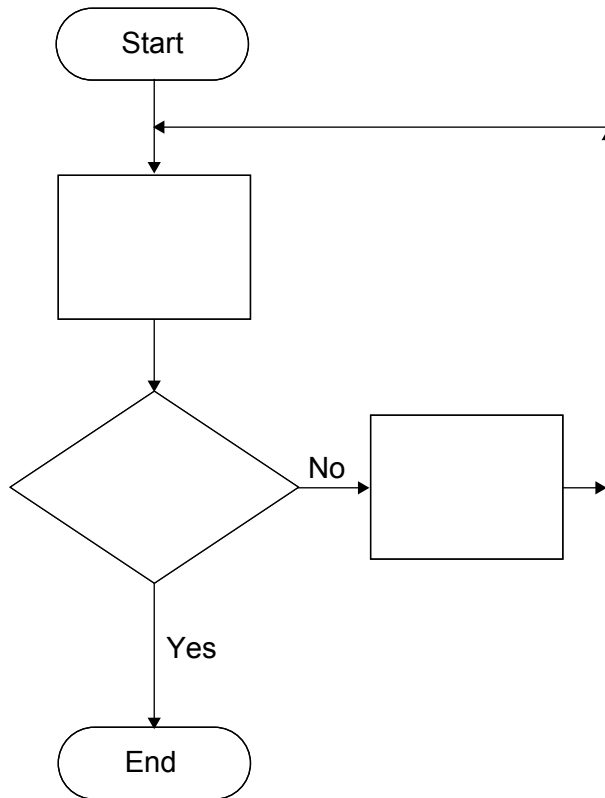
(3 marks)

5 **(e) (i)** Describe **one** advantage to the worker of using a computer controlled cutter.

....

....

(1 mark)

5 **(e) (ii)** Describe **one** disadvantage to the worker of using a computer controlled cutter.

....

....

(1 mark)

15

6 SilverDVD is a company that rents out DVDs to its members.
SilverDVD use an ICT system to keep track of DVDs rented to members.
This is a diagram of part of their ICT system.
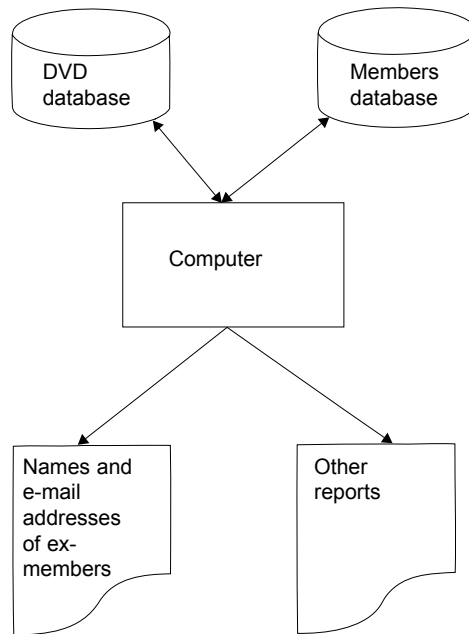
6 (a) SilverDVD produce a report showing the names and e-mail addresses of ex-members so that they can contact them.

6 (a) (i) Some ex-members do not have e-mail. Write **one** label in the box to complete the sentence.

Label	
A	envelopes
B	web mail
C	mail merge
D	presentation software
E	a laptop

If ex-members do **not** have e-mail, SilverDVD send personalised letters which are

produced using ⬚ . *(1 mark)*

Question 6 continues on the next page

6 **(a) (ii)** Tick **two** boxes to show other reports that the ICT system could be expected to produce.

	Tick **two** boxes
A list showing the bank balance of each member	
A list showing which car each member drives	
A list of competitors' sales the previous week	
A list of DVDs that are available to rent	
A list of DVDs that each member has borrowed	

(2 marks)

6 **(a) (iii)** Describe **one** other report that the ICT system could be expected to produce.

....

....

(1 mark)

6 **(b)** SilverDVD's employees have user documentation to help them use the ICT system. Employees complain that some of the user documentation is not very good. This is part of the documentation they complain about.

Reports are produc using the report writer feature which is usually in in the report menu. If you don't see the report wizard in the report menu may not be installed click select install click on OK and report and click on OK. Data from from archived database files can be included by selecting. Before including fields make sure the field's match in the source archive file with the report.

6 (b) (i) Tick **two** boxes to show why this is not good user documentation.

	Tick **two** boxes
The layout helps employees make sense of the documentation	
The documentation is in two columns	
The text is too large to read comfortably	
There are spelling mistakes and grammatical errors	
The documentation has a frame round it	

(2 marks)

6 (b) (ii) Give **two** other reasons why this is not good user documentation.

Reason 1: ....

....

Reason 2: ....

....

(2 marks)

6 (c) User documentation can be made available as a printed manual.

6 (c) (i) Tick **two** boxes to show other ways documentation can be made available.

	Tick **two** boxes
As help in the software	
As a .mp3 file saved on a USB memory stick	
On a keyboard	
On a webcam	
As a .pdf file saved on a USB memory stick	

(2 marks)

6 (c) (ii) Describe **one** other way documentation can be made available.

....

....

(1 mark)

Question 6 continues on the next page

Turn over ▶

6 (d) SilverDVD are going to introduce a new ICT system.

Write **one** label in each box to show at which stage of the ICT systems life cycle each task is carried out.

Label	
A	Specification
B	Design
C	Implementation
D	Testing
E	Documentation

6 (d) (i) Task: Purchase the hardware and software to be used ☐ *(1 mark)*

6 (d) (ii) Task: Check that the ICT system works ☐ *(1 mark)*

6 (d) (iii) Task: Produce a flowchart of the new ICT system ☐ *(1 mark)*
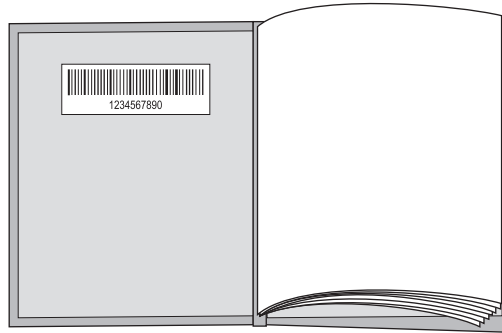
6 (d) (iv) Task: State exactly what the new ICT system will do when it has been produced ☐ *(1 mark)*

15

7 A school library uses an ICT system to keep track of books. The librarian puts a bar code in each book.

1234567890

7 (a) Write **one** label in each box to complete the sentences.

Label	
A	pupil
B	bar code reader
C	book
D	word processor
E	keyboard

7 (a) (i) Bar codes can be input faster and more accurately using a ☐ .

(1 mark)

7 (a) (ii) The librarian can enter the number printed under the bar code using a ☐ . *(1 mark)*

7 (a) (iii) The bar code identifies the ☐ .

(1 mark)

7 (b) Give **two** reasons why the number is printed under the bar code.

Reason 1: ....

....

Reason 2: ....

....

(2 marks)

Question 7 continues on the next page

Turn over ▶

7 (c) (i) The condition of a library book is described on the ICT system using a code.
This is the code used:

Code	Condition
N	New
G	Good
W	Worn
U	Unusable

Tick **two** boxes to describe this code.

	Tick **two** boxes
The code is information	
The code is data	
The code is qualitative	
The code is quantitative	
The code is too short	

(2 marks)

7 (c) (ii) A pupil returns a book. The librarian complains that the book is worn but the ICT system shows it was in good condition when the pupil borrowed it. The pupil says it was worn when it was borrowed.

Give **two** reasons why this difference of opinion could happen.

Reason 1: ....

....

Reason 2: ....

....

(2 marks)

7 **(d)** Using the ICT system can be difficult and documentation is provided to help users.

Write **one** label in each box to complete the sentences.

Label	
A	parents
B	the ICT technician
C	the school secretary
D	Ofsted
E	the librarian
F	pupils

7 **(d) (i)** Technical documentation could be useful to ☐ .

(1 mark)

7 **(d) (ii)** User documentation could be helpful to ☐ and ☐ .

(2 marks)

7 **(e) (i)** Tick **two** boxes to show reasons to justify the use of an ICT system in the library.

	Tick **two** boxes
There are 50 books in the school library	
Pupils only have access to the school library in Citizenship lessons	
There are 20 pupils at the school	
There are 2,000 pupils attending the school	
Pupils use the library to look for information to help with their homework	

(2 marks)

7 **(e) (ii)** Give **one** other reason to justify the use of an ICT system in the library.

....

....

(1 mark)

15

Turn over ▶

8 People often use ICT at home and when they relax or do leisure activities.

8 (a) TV broadcasting is changing from analogue to digital. There are many sources of TV programmes. For example, programmes can be broadcast over the Internet.

8 (a) (i) Tick **one** box to show an advantage when TV programmes are broadcast over the Internet.

	Tick **one** box
You can watch programmes after they have been on TV	
The picture can freeze when you do not want it to	
The sound and the picture may separate	
You can watch the same programme on satellite and the Internet at the same time	
You can watch programmes before they have been on TV	

(1 mark)

8 (a) (ii) Describe **one** other advantage when TV programmes are broadcast over the Internet.

....

....

(1 mark)

8 (a) (iii) Tick **one** box to show a disadvantage when TV programmes are broadcast over the Internet.

	Tick **one** box
The satellite signal interferes with the Internet broadcast	
You can watch programmes on your computer	
You have to slow down the Internet so that TV programmes can be shown	
There is too much choice	
If the Internet is too slow, the picture could be jerky	

(1 mark)

8 (a) (iv) Describe **one** other disadvantage when TV programmes are broadcast over the Internet.

....

....

(1 mark)

8 (b) A wireless home network includes three laptops and a desktop computer, and these can all use the Internet at the same time.
Draw a labelled diagram of the wireless home network. This should show all essential hardware.

(5 marks)

Question 8 continues on the next page

Turn over ▶

Do not write outside the box

8 (c) Discuss other ways in which the use of ICT extends what people can do and has introduced variety and flexibility into what they do at home, and when they relax or do leisure activities.

....

....

....

....

....

....

....

....

....

....

....

....

(6 marks)

15

END OF QUESTIONS