

Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

For Examiner's Use

General Certificate of Secondary Education
June 2007

**INFORMATION AND COMMUNICATION TECHNOLOGY 3522/F
(SPECIFICATION B) (FULL COURSE)
Foundation Tier**

F



Tuesday 22 May 2007 1.30 pm to 3.00 pm

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

Time allowed: 1 hour 30 minutes

Instructions

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

Information

- The maximum mark for this paper is 120.
- The marks for questions are shown in brackets.
- You are reminded of the need for good English and clear presentation in your answers.

For Examiner's Use			
Question	Mark	Question	Mark
1		5	
2		6	
3		7	
4		8	
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			



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

1 Many people use e-mail.

(a) Tick **two** boxes to show valid e-mail addresses.

	Tick two boxes
peter.jones@schoolsnet.ngfl.uk	
patel327*nowmail.web.uk	
n.patterson.ngfl.sch	
pqr@manch.biz.net	
michael@jones@man.ac.uk	

(2 marks)

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

	Tick two boxes
When you delete an e-mail, you can never look at it again	
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 address of the person you are sending it to	
You always have to pay a fee each time you send an e-mail	
When you forward an e-mail, attachments are removed	

(2 marks)



- (c) This hyperlink appears on a Web page: Send an e-mail for help



Tick **three** boxes to show what should happen when you click on the hyperlink.

	Tick three boxes
You have to enter the e-mail address of the person you are sending it to	<input type="checkbox"/>
A new e-mail message opens or a blank e-mail form opens	<input type="checkbox"/>
You telephone the help line	<input type="checkbox"/>
The e-mail is automatically addressed	<input type="checkbox"/>
A search engine is displayed	<input type="checkbox"/>
If you have set up an e-mail signature, it is automatically put in the message	<input type="checkbox"/>

(3 marks)

- (d) (i) Tick **two** boxes to show what can be attached to an e-mail.

	Tick two boxes
A flash memory stick	<input type="checkbox"/>
A word processed document	<input type="checkbox"/>
A CD-ROM	<input type="checkbox"/>
A peer-to-peer network	<input type="checkbox"/>
A digital photograph	<input type="checkbox"/>

(2 marks)

- (ii) State **one** other item that can be attached to an e-mail.

.....

.....

(1 mark)

Question 1 continues on the next page



- (e) Files attached to e-mails can be zipped.
Tick **one** box to show a feature of a zipped file.

	Tick one box
The file is compressed	
The file is always very small	
The file is unrecognisable	
The file is very big	
The file is word processed	

(1 mark)

- (f) Give **one** reason why a file attached to an e-mail would be zipped.

.....

.....

(1 mark)

- (g) You receive an e-mail from an Internet company.
Tick **three** boxes to show what would be in the e-mail signature.

	Tick three boxes
The names, addresses and telephone numbers of your friends	
The name of a contact at the company	
A scanned image of the sender's written signature	
The address of the company website	
The address and telephone number of the company	
Your bank card number	

(3 marks)



- 2 A customer downloads a bank account statement from an online bank. The statement is downloaded into a spreadsheet.

	A	B	C	D	E	F
1	Your bank account statement on 6 April 2007					
2	Date	Details	Paid out	Paid in	Balance	
3	6 March 07	Balance brought forward			£300.00	
4	12 March 07	Sheffield Council Tax	£80.00		£220.00	
5	26 March 07	Gas Company	£30.00		£190.00	
6	28 March 07	Paid in at Barnsley branch		£25.00	£215.00	
7	4 April 07	Monthly interest to 4 April 07		£5.50	£220.50	
8	5 April 07	Cashpoint at Meadowhall	£50.00		£170.50	
9	6 April 07	Balance carried forward			£170.50	
10						

- (a) Tick **three** boxes to show what can be contained in a cell in a spreadsheet.

	Tick three boxes
A mouse	<input type="checkbox"/>
A date	<input type="checkbox"/>
A number	<input type="checkbox"/>
A website	<input type="checkbox"/>
A picture	<input type="checkbox"/>
A word processor	<input type="checkbox"/>

(3 marks)

- (b) The cell reference of the cell which contains 'Balance brought forward' is B3.

- (i) Write down the cell reference of the cell which contains 'Gas Company'.

Cell reference (1 mark)

- (ii) Write down the cell reference of the cell which contains 'Paid out'.

Cell reference (1 mark)

Question 2 continues on the next page



	A	B	C	D	E	F
1	Your bank account statement on 6 April 2007					
2	Date	Details	Paid out	Paid in	Balance	
3	6 March 07	Balance brought forward			£300.00	
4	12 March 07	Sheffield Council Tax	£80.00		£220.00	
5	26 March 07	Gas Company	£30.00		£190.00	
6	28 March 07	Paid in at Barnsley branch		£25.00	£215.00	
7	4 April 07	Monthly interest to 4 April 07		£5.50	£220.50	
8	5 April 07	Cashpoint at Meadowhall	£50.00		£170.50	
9	6 April 07	Balance carried forward			£170.50	
10						

(c) Tick **one** box to show the formula contained in cell E6.

	Tick one box
=E6+C6+D6	
=E5-C6+D6	
=D5+D6+D7	
=E5*C6*D6	
=E5+C5+D5	

(1 mark)

(d) Tick **one** box to show the formula contained in cell E9.

	Tick one box
=E8	
=E8-C8+D8	
=E7*C8*D8	
=E8+D8	
=E8-C8	

(1 mark)

(e) Tick **three** boxes to show what a spreadsheet should be used for.

	Tick three boxes
Controlling output from a scanner	
Drawing a picture of the car you want to buy	
Calculating mortgage repayments	
Modelling future spending	
Writing to the bank manager	
Displaying the balance carried forward each month of the year in a graph	

(3 marks)



- (f) The customer is using a word processor to fill in a tax return.
The customer needs to copy the monthly interest into the tax return.
Write down the labels in order to show how cell D7 could be copied into the tax return.

Label	
A	Position the cursor in the word processor
B	Select copy
C	Select paste
D	Highlight D7 in the spreadsheet

Label

(2 marks)

- (g) The customer saves the statement on a flash memory stick.
Give **one** reason why this may not be secure and suggest a way to make the statement more secure.

Reason why this may not be secure:

.....

.....

Way to make the statement more secure:

.....

.....

(2 marks)

- (h) Tick **one** box to show how much space the spreadsheet file is likely to use on backing storage.

	Tick one box
150 Megabytes	
80 Gigabytes	
15 Kilobytes	
10 bytes	
0 bytes	

(1 mark)



3 A student has access to the Internet and the Web at home and at school.

- (a) At home the student has a computer and a connection to the Internet.
Tick **two** boxes to show what else is needed to access the Web.

	Tick two boxes
A microphone	
A subscription to an ISP (Internet Service Provider)	
A web browser	
A printer	
A digital camera	

(2 marks)

- (b) Tick **two** boxes to show valid website addresses.

	Tick two boxes
www.pqrest.org.uk	
email://www.pqrest.web	
http://www.pqrest.com	
ww.pqrest.org.uk	
http:\\www.pqrest.gov.uk	

(2 marks)

- (c) Many schools have their own website.

- (i) Tick **three** boxes to show what information is likely to be available to anyone accessing a school website.

	Tick three boxes
A description of what subjects students can study at school	
The school's online bank statement	
Tables showing the percentage of students awarded different GCSE grades	
Students' names and addresses	
News about school sports teams	
Teachers' names and addresses	

(3 marks)

- (ii) Name **two** other groups of people, besides students and teachers, who would be likely to look at a school website.

Group 1

.....

Group 2

.....

(2 marks)



- (d) The student wants to buy a scanner to input images into the computer.
Tick **two** boxes to show features which should be considered when buying a scanner.

	Tick two boxes
Ability to play music	
Ability to print	
Type of connection to the computer	
Resolution of scanned image	
Ability to record video	

(2 marks)

- (e) Write down the labels in order to show how the student could find details about a scanner on the Web.

Label	
A	Click the search button
B	Look at the list of websites starting at the top
C	Load a search engine
D	Type in key words

Label

(2 marks)

- (f) The student buys the scanner through an online shop.
Describe **two** problems the student might encounter.

Problem 1.....

.....

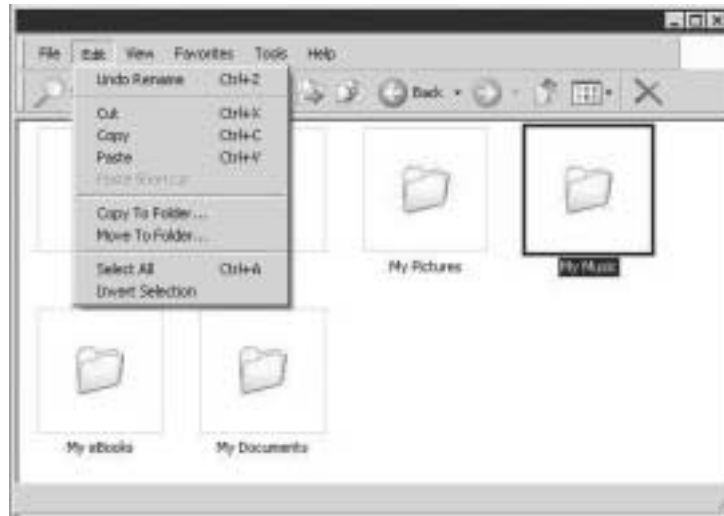
Problem 2

.....

(2 marks)



- 4 A music fan has a home computer and a Personal Digital Assistant (PDA).
The home computer has a Graphical User Interface (GUI).



- (a) A GUI has windows, icons, menus and a pointer.
Show what each term means by writing the label of the description next to the term.

Label	Description
A	A small picture that illustrates what a program does
B	A rectangular area which shows what is being done with a program
C	An arrow or other symbol
D	A list of options which can be chosen

Term	Label
(i) Window	
(ii) Icon	
(iii) Menu	
(iv) Pointer	

(1 mark)

(1 mark)

(1 mark)

(1 mark)

- (b) Tick **two** boxes to show when the pointer may be different shapes.

	Tick two boxes
The pointer changes shape every two minutes	
The pointer changes shape when it has been clicked over an icon to show that a program is loading	
The pointer may be a different shape over different parts of a window	
The pointer changes shape to show which menu option is being chosen	
The pointer changes shape over an icon	

(2 marks)



- (c) The music fan saves music files in a folder called 'My Music'.
Tick **two** boxes to show how to organise folders in 'My Music' so that all the music files for an artist are together, and all the music files for an album by the artist are together.

	Tick two boxes
Within the folder for an album, there should be one folder for each artist	
Within 'My Music' there should be one folder for each different artist	
When 'My Music' is opened, one folder for each album should show in the window	
Within the folder for an artist, there should be one folder for each album	
The music files should be in a folder which shows their genre; for example, all the rock files should be in one folder	

(2 marks)

- (d) The music fan copies 'My Music' onto a DVD.
Tick **three** boxes to show why the music fan would copy 'My Music' onto a DVD.

	Tick three boxes
The music files take up one gigabyte on the computer's hard disk so they would not fit on a CD	
The music files will load faster from a DVD than from the computer's hard disk	
The music fan wants to play the music files on another computer	
The music files cannot be played on a laptop computer	
The music files will play faster from a DVD than from the computer's hard disk	
A backup copy is needed	

(3 marks)

- (e) The music fan copies the music files to a PDA.

- (i) Tick **one** box to show an advantage to the music fan of using a PDA to store music rather than a desk top computer.

	Tick one box
PDA's have touch screens	
The battery in a PDA can be charged by connecting it to a computer	
A PDA is a mobile device so that you can listen to music anywhere	
A PDA is much larger and heavier than a flash memory stick	
Downloading music files to a PDA can take a long time	

(1 mark)

Question 4 continues on the next page



- (ii) Tick **one** box to show a disadvantage to the music fan of using a PDA to store music rather than a flash memory stick.

	Tick one box
PDA's have touch screens	
The battery in a PDA can be charged by connecting it to a computer	
A PDA is a mobile device so that you can listen to music anywhere	
A PDA is much larger and heavier than a flash memory stick	
Downloading music files to a PDA can take a long time	

(1 mark)

- (f) The music fan also has a large CD collection. The music files on these CDs have been ripped and converted to mp3 format and saved on the computer's hard disk in 'My Music'.

The music fan is considering whether to sell the original CDs.

- (i) Give **one** reason why the music fan might want to sell the original CDs other than to make money.

.....

.....

(1 mark)

- (ii) Give **one** reason why the music fan must **not** sell the original CDs.

.....

.....

(1 mark)



5 A systems analyst is designing a new ICT system for a doctors' surgery.

(a) Show what each term includes by writing the label of a description next to the term.

Label	Description
A	Installing new hardware and software, and training people to use the new ICT system
B	A detailed description of the new ICT system, what methods could be used, and how it will be judged a success
C	When the new ICT system is in use, checking it to make sure it does what it was designed to do
D	A quick look to see if it is worth building a new ICT system to do the job
E	Inputting typical and extreme data to see if the new ICT system processes this correctly

Term	Label	
(i) Feasibility study		(1 mark)
(ii) Systems analysis and design		(1 mark)
(iii) Implementation		(1 mark)
(iv) Testing		(1 mark)
(v) Evaluation		(1 mark)

(b) The systems analyst is an ICT specialist and has very limited knowledge of doctors' surgeries.

Tick **two** boxes to show how the systems analyst could find out what an ICT system for a doctors' surgery should do.

	Tick two boxes
The systems analyst does not need to find out what an ICT system for a doctors' surgery should do because all ICT systems are the same	
Investigate ICT systems used in swimming baths	
Talk to doctors who work at hospitals in Birmingham	
Talk to other ICT specialists who have written ICT systems for doctors' surgeries	
Talk to employees of doctors' surgeries and find out what they do	

(2 marks)

Question 5 continues on the next page



- (c) The systems analyst proposes that doctors should use a word processor to prepare prescriptions.
Tick **three** boxes to show why using a word processor is better than writing prescriptions by hand.

	Tick three boxes
You can include clip art in a word processor	
Some doctors have handwriting that is difficult to read	
Some drugs have names which are difficult to spell and these could be checked using a spelling checker	
There may only be one copy of a handwritten prescription. If a word processor is used, it is easier to store a record of what has been prescribed	
It would be better to use desk top publishing software than a word processor	
Doctors may have repetitive strain injury from typing	

(3 marks)

- (d) The doctors' surgery has a LAN (Local Area Network).
- (i) Draw a labelled diagram of a LAN showing at least **three** networked computers and a file server. You should include other hardware the doctors might use.

(4 marks)

- (ii) State **one** advantage of using the LAN.

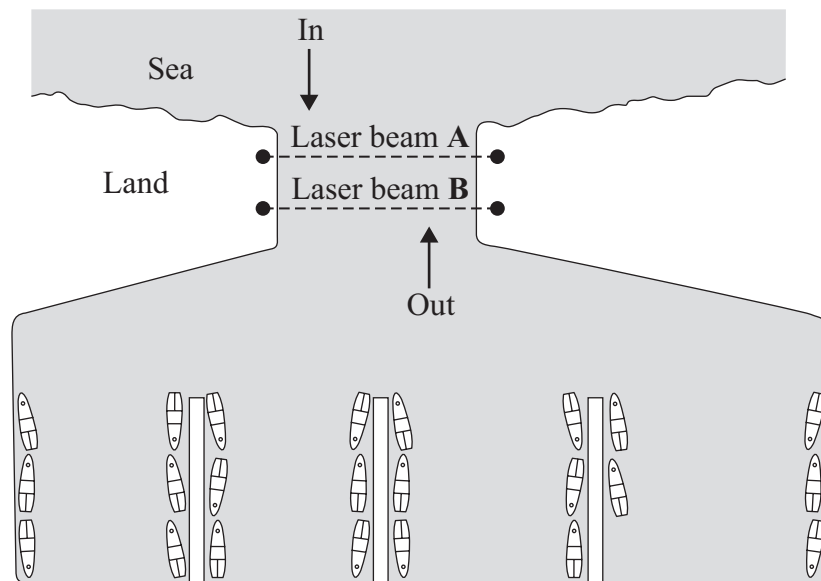
.....

.....

(1 mark)



- 6 A computer control system counts the number of boats in a harbour. This is a plan of the harbour.



The computer uses two laser beams across the harbour mouth to tell whether a boat is entering or leaving. The computer can sense when a laser beam is broken.

- (a) Tick **two** boxes to show how the computer knows whether a boat is entering or leaving the harbour.

	Tick two boxes
Beam B is broken before beam A if a boat is entering	<input type="checkbox"/>
Beam A is broken before beam B if a boat is leaving	<input type="checkbox"/>
Both beams are always broken at the same time	<input type="checkbox"/>
Beam A is broken before beam B if a boat is entering	<input type="checkbox"/>
Beam B is broken before beam A if a boat is leaving	<input type="checkbox"/>

(2 marks)

- (b) Tick **two** boxes to show how the computer knows the number of boats in the harbour.

	Tick two boxes
When a boat enters the harbour, the computer adds 1 to the total	<input type="checkbox"/>
When a boat stays in the harbour, the computer sets the total to 0	<input type="checkbox"/>
When a boat leaves the harbour, the computer subtracts 1 from the total	<input type="checkbox"/>
When a boat enters the harbour, the computer subtracts 1 from the total	<input type="checkbox"/>
When a boat leaves the harbour, the computer adds 1 to the total	<input type="checkbox"/>

(2 marks)

Question 6 continues on the next page



- (c) Sometimes the actual number of boats in the harbour and the computer's total are not the same.

Tick **three** boxes to show the most likely reasons why this could happen.

	Tick three boxes
Two boats have entered at the same time side by side	
The computer has added up the totals incorrectly	
At the same time a long boat is entering, a short boat left	
A third laser beam has been installed	
A flock of seagulls has flown across the harbour mouth and broken both beams	
A hacker has broken into the system and changed the total	

(3 marks)

- (d) Suggest **one** way of improving the design of the harbour to help avoid these problems.

.....

.....

(1 mark)

- (e) The computer operator counts the actual number of boats in the harbour each morning and resets the computer's total.
Give **one** reason why the operator has to enter a username and password before access to the computer is allowed.

.....

.....

(1 mark)



- (f) (i) The computer operator changes the password each month.
Give **one** reason why passwords should be changed regularly.

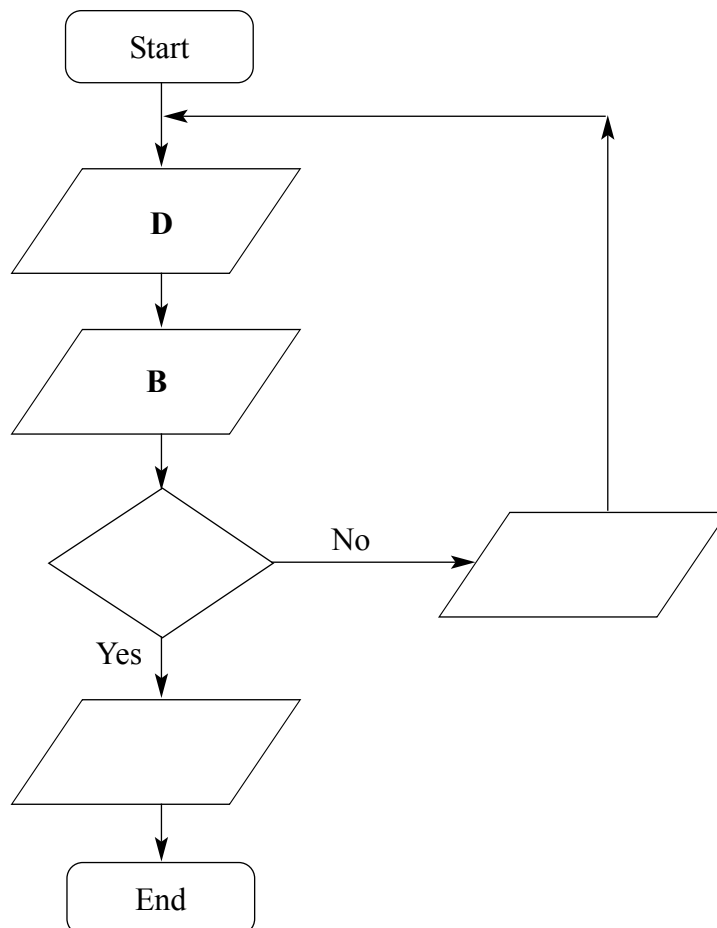
.....

.....

(1 mark)

- (ii) Write **one** label in each flowchart box to describe what happens when the password is changed. Some of the boxes have been completed for you.

Label	Statement
A	Display message 'your password has been changed'
B	Enter the new password for the second time
C	Has the same password been entered both times?
D	Enter a new password for the first time
E	Display message 'you entered different passwords – please start again'



(3 marks)

Question 6 continues on the next page



- (g) The computer operator looks at the online help when it is not clear how the computer system works.

This is a part of the online help. You do not need to read all of it.

To remove or change a password start the computer and enter the password when prompted and then click OK. On the tools menu click options and click the security tab and in the password to change box or the password to remove box select the placeholder symbols (usually asterisks) that represent the existing password. Remove the password by pressing remove and then click OK or change the password by typing the new password and then click OK. If you changed the password reenter the new password and then click OK.

Tick **two** boxes to show how to improve this documentation.

	Tick two boxes
Bullet points could be used to emphasis each step	
Clip art could make the documentation look more attractive	
A larger font would make the documentation more readable	
The background could be coloured blue	
The online help could be made available as a printed manual	

(2 marks)



- 7 A supermarket has a database of items for sale.
This is a part of the database.

Bar Code Number	Description	Supplier	Price	Quantity in Stock	Minimum Stock Level
010046 001102	Sweet Corn	Greenland	0.75	25	100
000157 024671	Baked Beans	Variety	0.36	650	1000
011673 107373	Chestnut Puree	Greenland	1.45	450	200
031021 952776	Chilli Peppers	BestBuy	0.30	50	200
000232 824806	Peach Slices	Variety	0.85	450	200
002359 645009	Chilli Sauce	Variety	1.25	250	200

- (a) (i) Tick **one** box to show which is the key field.

	Tick one box
Bar Code Number	
Description	
Supplier	
Price	
Quantity in Stock	

(1 mark)

- (ii) Tick **two** boxes to show which of the following are true.

	Tick two boxes
The key field is a code and you can work out the price from it	
The key field is unique	
The key field must be used to find information	
No more than two key fields should have the same number in them	
The key field identifies the record	

(2 marks)

Question 7 continues on the next page



Bar Code Number	Description	Supplier	Price	Quantity in Stock	Minimum Stock Level
010046 001102	Sweet Corn	Greenland	0.75	25	100
000157 024671	Baked Beans	Variety	0.36	650	1000
011673 107373	Chestnut Puree	Greenland	1.45	450	200
031021 952776	Chilli Peppers	BestBuy	0.30	50	200
000232 824806	Peach Slices	Variety	0.85	450	200
002359 645009	Chilli Sauce	Variety	1.25	250	200

(b) The supermarket manager is searching the database.

- (i) Write down the **Description(s)** in the record(s) selected using this search condition.

Search Condition: **Description** contains Beans

Description(s) in the record(s) selected:

.....
(1 mark)

- (ii) Write down the **Description(s)** in the record(s) selected using this search condition.

Search Condition: **Supplier** is Variety AND **Description** contains Chilli

Description(s) in the record(s) selected:

.....
(1 mark)

- (iii) Write down the **Description(s)** in the record(s) selected using this search condition.

Search Condition: **Supplier** is BestBuy OR **Quantity in Stock** is less than 40

Description(s) in the record(s) selected:

.....
(1 mark)

(c) The supermarket manager wants to find out which items should be re-ordered. Tick **one** box to show the search condition the manager should use.

	Tick one box
Quantity in Stock is greater than the Minimum Stock Level	
Quantity in Stock is less than the Bar Code Number	
Quantity in Stock plus the Minimum Stock Level is more than 500	
Quantity in Stock is less than the Minimum Stock Level	
Quantity in Stock is zero	

(1 mark)



- (d) Bar codes are printed on items for sale and scanned at the checkout when the items are sold. **Bar Code Numbers** are printed under the bar code.



Tick **two** boxes to show why the **Bar Code Number** is printed under the bar code.

	Tick two boxes
If the bar code will not scan, the checkout operator can enter the Bar Code Number	<input type="checkbox"/>
The bar code has a different number coded in it	<input type="checkbox"/>
The checkout operator can read the printed numbers but not the bar code	<input type="checkbox"/>
The price is coded in the Bar Code Number	<input type="checkbox"/>
If the computer is not working, the checkout operator can write down the Bar Code Number of each item sold	<input type="checkbox"/>

(2 marks)

- (e) When a bar code is scanned there is a bleep if it has been recognised. Sometimes there is no bleep.

Tick **three** boxes to show why there might not be a bleep.

	Tick three boxes
The checkout operator does not like bleeps and has turned the sound off	<input type="checkbox"/>
When the check digit was re-calculated it was not the same as the check digit scanned	<input type="checkbox"/>
The bar code was not found in the database	<input type="checkbox"/>
The bar code has been damaged	<input type="checkbox"/>
The bleep is recorded on the bar code but not all bar codes have bleeps	<input type="checkbox"/>
The bar code is an electronic memory device	<input type="checkbox"/>

(3 marks)

Question 7 continues on the next page



Turn over ▶

- (f) Customers are given printed receipts when all the items they are buying have been scanned. This is a customer's receipt.

Description				
Sweet Corn	3	@	0.75	2.25
Chilli Peppers	2	@	0.30	0.60
Peach Slices	5	@	0.85	4.25
Total to pay:				£7.10

Write down the labels in order to show how the description and price can be printed on the receipt.

Label	
A	The description and price are sent from the database to the checkout
B	The bar code is sent to the computer
C	The bar code is scanned at the checkout
D	The receipt is printed at the checkout
E	The computer uses the bar code to search the database

Label

(3 marks)



- 8 SeeEarth is a Geographic Information System (GIS) which uses pictures taken by satellites. SeeEarth is a free program that can be downloaded from the Internet. It can be used to look at the whole Earth and zoom in on any point on the Earth's surface.

- (a) Tick **three** boxes to show what you could do.

	Tick three boxes
Look at the layout of the streets and gardens in a residential neighbourhood	
Look at the route you could take from one town to another	
Look at the shape of the United Kingdom and Europe	
Look at the layout of your school library	
See whether there would be room to park in a car park	
Read a newspaper spread out on a park bench	

(3 marks)

- (b) The police want to track criminals using SeeEarth.
Tick **three** boxes to show why this would **not** work.

	Tick three boxes
If a criminal used an umbrella he/she could not be tracked	
Satellite pictures are low resolution and they are not clear enough to identify individuals	
Cameras on satellites cannot see everywhere inside buildings	
The police could track very big criminals but not small ones	
SeeEarth is not an interactive, real time system	
Criminals would need to log on to SeeEarth and they might forget their passwords	

(3 marks)

- (c) SeeEarth allows you to select layers.
A layer is a map of particular information, for example, the location of hotels.
If you select a layer that shows all the hotels in an area, you could choose to display these.
Layers can be overlaid on each other.

Tick **three** boxes to show other information that might be a layer.

	Tick three boxes
The specification for a four wheel drive vehicle	
The location of petrol stations	
Instructions for using the software	
The location of schools	
The route taken by public transport	
The location of databases that store personal information	

(3 marks)

Question 8 continues on the next page



- (d) (i) Tick **two** boxes to show the advantages of using SeeEarth.

	Tick two boxes
The council could plan new housing estates so that they fit in with existing communities	
You could watch a football match without going to the stadium	
Farmers could see where their stray sheep had gone and get them back	
The police could have layers showing where crimes were committed, and this would help them plan patrols	
Fishermen could track the fish they wish to catch	

(2 marks)

- (ii) Describe **one** other advantage of using SeeEarth.

.....

.....

(1 mark)

- (e) (i) Tick **two** boxes to show the disadvantages of using SeeEarth.

	Tick two boxes
A sharpshooter could see where someone is in their home and assassinate them	
Armies can watch troop movements on the battlefield	
Terrorists can see the layout of the grounds of public buildings they want to attack	
Burglars can see the most secluded route into a house	
Someone will be watching you all the time	

(2 marks)

- (ii) Describe **one** other disadvantage of using SeeEarth.

.....

.....

(1 mark)

END OF QUESTIONS

