Surname		Other Names	
Centre Number			Candidate Number				
Candidate Signature									

Leave blank

General Certificate of Secondary Education
June 2005

INFORMATION AND COMMUNICATION TECHNOLOGY 3528/F (SPECIFICATION B)(SHORT COURSE)

Foundation Tier

Monday 23 May 2005 1.30 pm to 2.30 pm

F

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

Time allowed: 1 hour

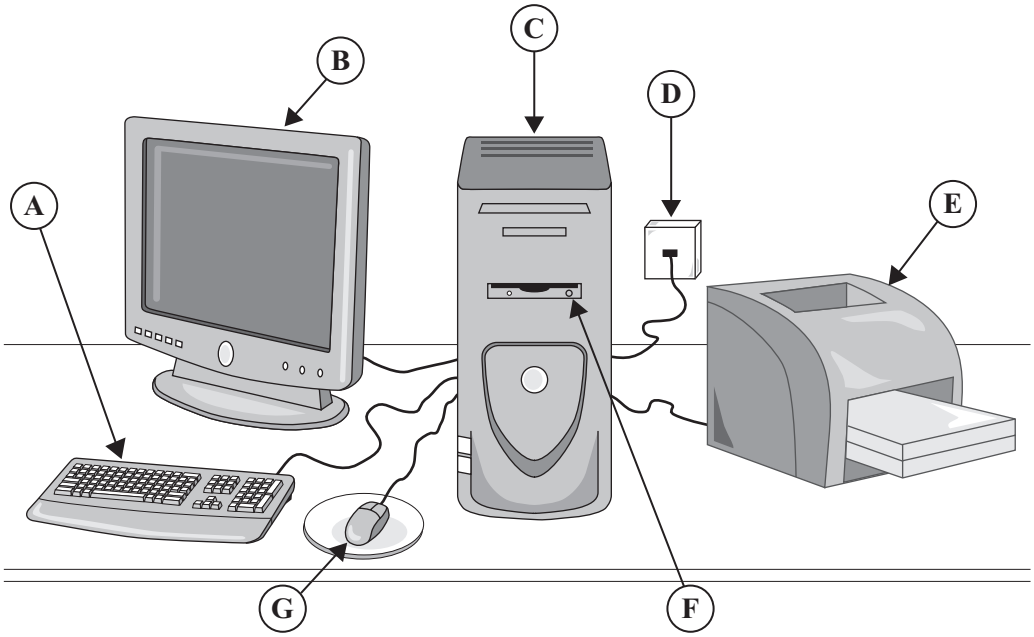
Instructions.
- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** the questions in the spaces provided.

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

For Examiner's Use	
Number	Mark
1	
2	
3	
4	
5	
6	
7	
8	
TOTAL	
Examiner's Initials	

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

1 This is a diagram of a desktop computer system.



(a) Write down the name of each part of the computer system. The first one has been done for you.

Part of the computer	Name
C	Processor Box
E	
G	

(2 marks)

(b) Join each part of the computer system to a task it is used for. One join has been done for you.

Part of the computer	Task
D •	• selects from a menu
E •	• reads a floppy disk
F •	• connects to the Internet
G •	• prints letters and other documents

(3 marks)

(c) The computer has this software.

Spreadsheet
Web browser
Wordprocessor
Database
E-mail

From the list, write down the type of software that is most likely to be used to:

(i) write a letter;

.....

(1 mark)

(ii) work out a budget.

.....

(1 mark)

(d) A floppy disk has just been formatted.
Tick **one** box to show which statement is true.

	Tick **one** box
The only file remaining on the floppy disk is a search engine	
There are no files on the floppy disk	
There could be files on the floppy disk	
There are no viruses on the floppy disk	
There are folders on the floppy disk	

(1 mark)

8

TURN OVER FOR THE NEXT QUESTION

2 A local supermarket has eight checkouts.

The manager uses a spreadsheet model to find out the average time customers have to queue.
This is a screen display from the model.

	A	B	C
1	Total number of customers waiting	32	
2	Number of checkouts in use	4	
3	Average number of customers at each checkout	8	
4	Time to process a customer at a checkout	3	minutes
5	The average time customers have to queue	24	minutes

(a) (i) It has been decided to open more checkouts.
Write down the cell reference of the cell that would be edited.

.....

(1 mark)

(ii) As a result, two cells change automatically.
Write down the cell reference of **one** of these cells.

.....

(1 mark)

(iii) Tick **one** box to show the formula that would be in cell B3.

	Tick **one** box
=AVERAGE(B1:B2)	
=B4	
=B1/B2	
=SUM(B1+B2)	
=B1*B2	

(1 mark)

(iv) Write down the formula that would be in cell B5.

.....

(1 mark)

(v) The manager wants to shorten the average time customers have to queue.
Tick **two** boxes to show what would help achieve this.

	Tick **two** boxes
Make one checkout for customers with less than 10 items	
Fit more checkouts in the supermarket	
Put experienced staff that can process customers faster on all the checkouts	
Make one checkout for customers who want to pay in cash	
Advertise the supermarket to increase the number of customers	

(2 marks)

(b) The checkouts are connected to the computer in the manager's office.
Some of the data input to the model could be collected using either a manual or an automatic method.

Describe **one** manual and **one** automatic method of collecting the following data.

Data to be collected: Number of checkouts being used

Manual method: .....

.....

Automatic method: .....

.....

(2 marks)

8

TURN OVER FOR THE NEXT QUESTION

3 XLOG organises international parcel post.
It has offices in London, Manchester, Leeds, Liverpool and Sheffield.
XLOG uses a database to track parcels in transit. This is a part of the database.

Parcel_Number	Customer	Content	Posted_At	Destination
0092	Jones	Clothes	Manchester	Auckland
0297	Patel	CDs	London	Sydney
0453	Bowman	Books	Sheffield	Dijon
0870	Patel	Telephones	Leeds	Berne
0521	Rooney	CDs	Manchester	Toronto
0115	Afzal	Files	Liverpool	Chicago
0033	Delker	CDs	Sheffield	Amsterdam
0676	Rooney	Books	Leeds	Hong Kong

(a) (i) State the name of the key field.

.....

(1 mark)

(ii) Tick **one** box to show why a key field is used.

	Tick **one** box
The key field is coded so that you know what is in the parcel	
The key field is the most important field in a record	
Customers find it hard to remember the **Parcel_Number**	
The key field identifies the parcel	
It is easier to type in the key field than type in the customer's name	

(1 mark)

(b) An employee tries to add this incorrect record to the database.

Parcel_Number	Customer	Content	Posted_At	Destination
0297	Farthing	CDs	Manchester	Berne

Explain why the database should reject this record.

.....

.....

(1 mark)

(c) An employee tries to add this incorrect record to the database.

Parcel_Number	Customer	Content	Posted_At	Destination
0047	Kapila	Manchester	Medicines	Delhi

(i) Explain why the database should reject this record.

.....

.....

(1 mark)

(ii) Tick **one** box to show an effect of storing incorrect data in a database.

	Tick **one** box
The records selected by a search condition will always have some records missing	
The database software will run faster	
The database will need more space on the hard disk	
The database software will not run	
Sometimes records that should be selected by a search condition will not be selected	

(1 mark)

(d) Write down the **Customer(s)** selected using each of these search conditions.

(i) Search Condition: **Posted_At** is Leeds

Customer(s) selected: .....

.....

(1 mark)

(ii) Search Condition: **Content** is CDs AND **Posted_At** is Manchester

Customer(s) selected: .....

.....

(1 mark)

(iii) Search Condition: **Posted_At** is London OR **Destination** is Amsterdam

Customer(s) selected: .....

.....

(1 mark)

8

4 (a) A teacher uses wordprocessing software.

Complete the sentences using words from this list.

space
table
column
line
paragraph

There should always be a ..... between one word and the next.

When typing text into a wordprocessor, you should press the <RETURN> key at the end of a ..... .

(2 marks)

(b)

word A	**word B**
Technology	**Technology**

Tick **one** box to show which statement is true.

	Tick **one** box
Words A and B are both in italic	
Words A and B have the same font	
Words A and B have different sizes of text	
Word A is in bold whereas word B is not	
Word A has been produced by a wizard whereas word B has not	

(1 mark)

(c) This object is inserted in a document.

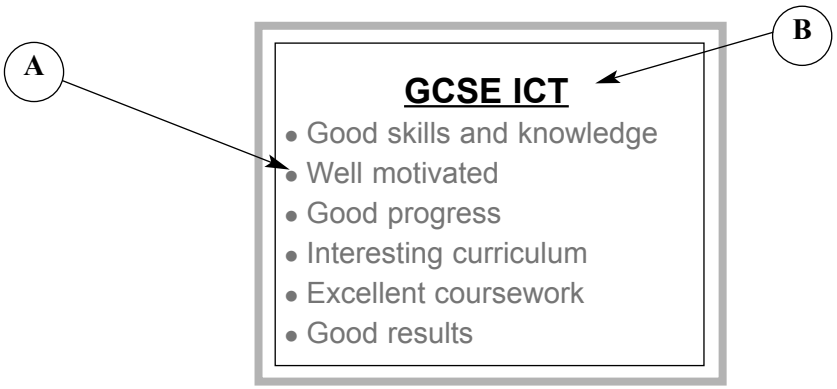
Complete the sentence using a word from this list.

space
pie chart
word art
font
style

This is a ..... object.

(1 mark)

(d) The teacher is using presentation software.



Complete the sentences using words from this list.

space
right justified
bullet
wizard
border
centred

Label **A** points at a ..... .

Label **B** points at the heading which is ..... .

(2 marks)

(e) **Screen A**

Information and Communication Technology

GCSE ICT	A	B	C	D	E	F	G	U	Number entered
Percentage awarded each grade	15%	20%	20%	20%	15%	5%	4%	1%	150

Pupils make very good progress in ICT lessons in Key Stage 4 and good progress in Key Stage 3. They listen carefully, work independently, and show interest and sustained concentration. In ICT lessons in Key Stage 3, pupils work through well structured worksheets that ensure they keep records of stage 4, pupils make very good progress with GCSE coursework tasks that are demanding, and they produce substantial and detailed work. In lessons in Key Stage 3, most pupils co-operate effectively, working in pairs and sharing a computer most of the time. GCSE pupils almost always have sole example, in Key Stage 3, pupils understanding of the logic of a flowchart to control the temperature in a greenhouse is developed through challenging, step-by-step questioning by the teacher. The atmosphere in the classroom is relaxed, and teachers support and encourage their pupils.

Screen B

GCSE ICT

- Good skills and knowledge
- Well motivated
- Good progress
- Interesting curriculum
- Excellent coursework
- Good results

Give **one** reason why **Screen B** is better than **Screen A** for presentations to a large audience.

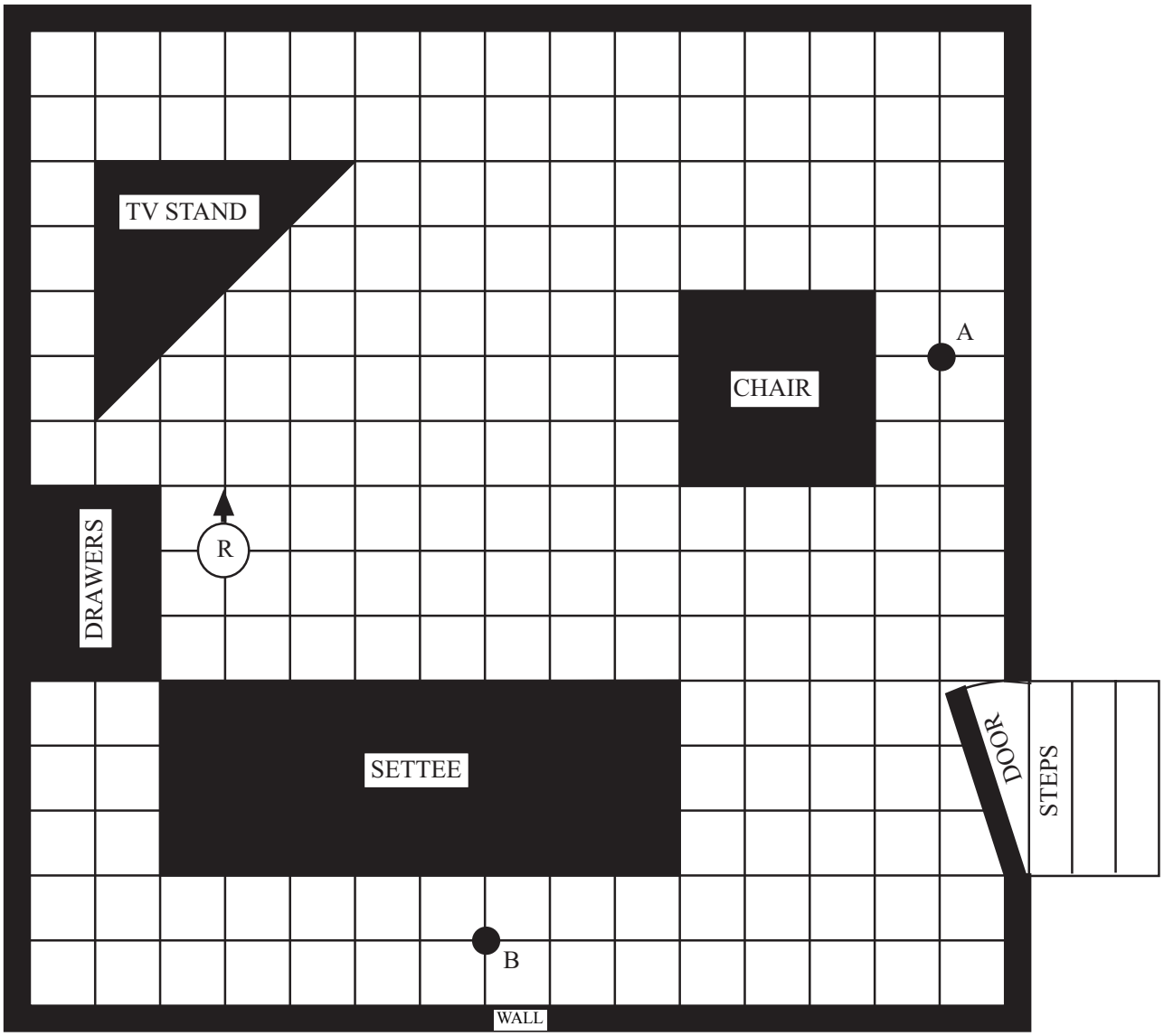
.....

.....

(1 mark)

7

5 A robot vacuum cleaner (R) can move around a room cleaning the carpet.



(a) The robot vacuum cleaner can be operated manually from a remote control unit by entering instructions. These are examples of the instructions that can be entered.

Instruction	**What the robot vacuum cleaner does**
F3	Moves forward 3 squares only
B2	Moves backwards 2 squares only
L	Turns to the left through 90 degrees
R	Turns to the right through 90 degrees

The robot vacuum cleaner is pointing in the direction shown by the arrow.
These instructions would move the robot from the position shown to point A.

R
F11
L
F3

Write the instructions to move the robot from the position shown to point B.

.....

.....

.....

.....

.....

.....

.....

.....

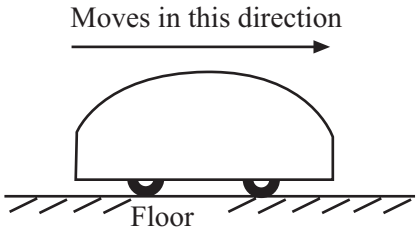
(2 marks)

(b) (i) Tick **one** box to show a type of sensor the robot vacuum cleaner could use to detect an object it bumps into.

	Tick **one** box
Touch	
Sand	
Moisture	
Heat	
Output	

(1 mark)

(ii) This is a diagram showing the robot vacuum cleaner from the side.
Put a cross on the diagram to show where the sensor must be.



(1 mark)

QUESTION 5 CONTINUES ON THE NEXT PAGE

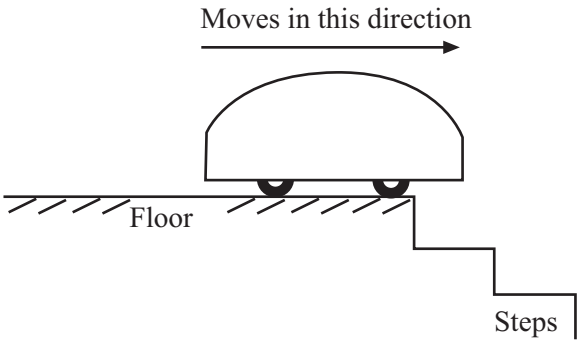
(iii) Tick **one** box to show a type of actuator the robot vacuum cleaner must use.

	Tick **one** box
Light bulb	
Electric motor	
Petrol motor	
Heater	
Pressure sensor	

(1 mark)

(c) When the door is left open, the vacuum cleaner can go through it and fall down the steps.

(i) On the diagram, put a cross where you would locate a sensor to detect if there were steps.



(1 mark)

(ii) Tick **one** box to show the type of sensor that should be used to detect the steps.

	Tick **one** box
Heat	
Dust	
Moisture	
Floor	
Light	

(1 mark)

(iii) Describe what the robot should do if steps are detected.

.....

.....

(1 mark)

8

6 A student is using a computer connected to a LAN (Local Area Network).

(a) (i) Tick **two** boxes to show the names of input devices.

	Tick **two** boxes
printer	
keyboard	
mouse	
hard disk	
speakers	

(2 marks)

(ii) Tick **two** boxes to show the names of output devices.

	Tick **two** boxes
printer	
keyboard	
mouse	
hard disk	
speakers	

(2 marks)

(b) Draw a diagram of a LAN showing a file server and at least three computers connected to the network.
You should show on your diagram other networked and local hardware.

(3 marks)

7

7 A council wants to charge motorists when they take their cars into the city centre.
The charge will depend on the length of time a car stays in the city centre.
The council is thinking of using an ICT system to do this.

(a) Complete the sentences using words from this list.

Documentation
Testing
Systems Analysis and Design
Implementation

..... is making sure the ICT system works as it should.

..... includes instructions on how to use the ICT system.

(2 marks)

(b) To show how the ICT system would calculate the charge for a car, write the labels of the actions in the order they would be carried out.
The first two labels have been done for you.

Labels may be used more than once.

Label	**Action**
A	Record the time
B	Identify the car as it enters the city centre
C	Send the motorist the bill
D	Calculate the charge
E	Calculate the time the car has been in the city centre
F	Identify the car as it leaves the city centre

Label
B
A

(3 marks)

(c) (i) Tick **one** box to show an advantage to the community of this ICT system.

	Tick **one** box
There will be more traffic in areas around the city centre	
There will be fewer convictions for speeding	
More people will use public transport	
Motorists have to go to the Town Hall to pay their fines	
The ICT system will use solar power and shut down if there is not enough sunshine	

(1 mark)

(ii) There is likely to be less congestion in the city centre.
State **one** other advantage to a motorist.

.....

.....

(1 mark)

7

TURN OVER FOR THE NEXT QUESTION

8 The Internet gives access to large volumes of information, and this is often uncensored.
Some countries welcome access to the Internet, but also want to preserve their traditional ways of life.
They are concerned about the impact the Internet could have on their ways of life.

(a) (i) Tick **three** boxes to show how access to the Internet can undermine traditional ways of life in some countries.

	Tick **three** boxes
The Internet will not always work as power supplies are unreliable	
Chat rooms on the Internet allow people in different countries to discuss ideas and beliefs that are different from their own	
Information on the Internet can highlight differences between cultures, for example different attitudes to marriage	
Access to on-line shopping can make poor people dissatisfied because they cannot afford the goods they see	
All the languages of the world are on the Internet	
The Internet encourages harmony	

(3 marks)

(ii) Describe **one** other means by which the Internet can undermine traditional ways of life.

.....

.....

(1 mark)

(iii) Describe **one** advantage of the Internet to people who feel isolated or lonely.

.....

.....

(1 mark)

(b) Some countries allow use of the Internet for business, but also want to preserve their traditional ways of life.

(i) Tick **one** box to show how this might be achieved.

	Tick **one** box
People are not interested in different societies	
Everyone can be disconnected from the Internet	
People can ignore it and it will go away	
Nothing has to change if you do not want it to	
Only allow businesses access to the Internet, but not people in their homes	

(1 mark)

(ii) Tick **one** box to show why this might **not** be achieved.

	Tick **one** box
Their ICT resources are out-of-date and need to be brought up to modern standards	
They have access to on-line banking	
Restricting the number of people who have access to the Internet does not prevent those who have access looking at restricted information	
Social unrest is unavoidable	
People always welcome new technology	

(1 mark)

7

END OF QUESTIONS

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