

Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

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General Certificate of Secondary Education
June 2004

**INFORMATION AND COMMUNICATION TECHNOLOGY
SPECIFICATION A (FULL COURSE)
Higher Tier**

3521/HR



Monday 24 May 2004 1.30 pm to 3.00 pm

H

<p>No additional materials are required. You may use a calculator.</p>

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 80.
- Mark allocations are shown in brackets.

For Examiner's Use	
Number	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
TOTAL	
Examiner's Initials	

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

- 1 (a) Name **three** input devices.

Input device 1:

Input device 2:

Input device 3:

(3 marks)

- (b) Name **three** output devices.

Output device 1:

Output device 2:

Output device 3:

(3 marks)

- (c) Name **two** storage devices.

Storage device 1:

Storage device 2:

(2 marks)

2 A garden centre wants to use a software package to improve its advertising leaflet. This leaflet will give details of the garden centre’s opening hours, contact information and a range of the products it sells.

(a) State the best type of software to use to improve the leaflet.

.....
(1 mark)

(b) Name **four** features of the software that make it suitable for improving the leaflet. Give a different reason for each.

Feature 1:

Reason 1:

.....

Feature 2:

Reason 2:

.....

Feature 3:

Reason 3:

.....

Feature 4:

Reason 4:

.....

(8 marks)

9

TURN OVER FOR THE NEXT QUESTION

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- 3 A computer system controls a robot turtle. At the front, the turtle holds a pen. When the turtle moves, the pen leaves a line on the paper beneath it. The turtle is moved by typing commands into the computer system. The commands which are used to move the turtle are as follows:

PENUP
PENDOWN
FORWARD distance (in mm)
BACKWARD distance (in mm)
LEFT angle (in degrees)
RIGHT angle (in degrees)

PENUP would lift the pen up from the paper. No line would be drawn until there is a **PENDOWN** command.

PENDOWN would put the pen down onto the paper and a line would be drawn until there is a **PENUP** command.

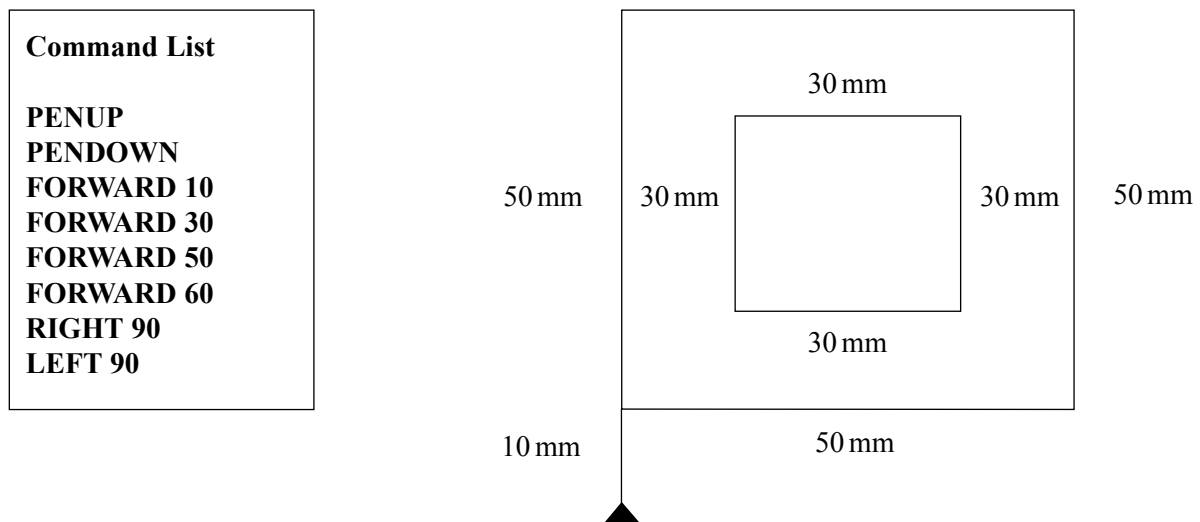
FORWARD 5 would move the turtle forward 5 mm.

BACKWARD 5 would move the turtle backward 5 mm.

LEFT 45 would turn the turtle left through an angle of 45 degrees.

RIGHT 45 would turn the turtle right through an angle of 45 degrees.

The inner shape is square with each side 30 mm long. There is a gap of 10 mm between the sides of the 30 mm square and the sides of the 50 mm square.



4 Mrs Green uses a spreadsheet to investigate the cost of running her car for a year. The spreadsheet is shown below.

	A	B	C	D	E
1	Car expenses 2004				
2					
3	Estimated miles for the year		12000		
4					
5	Item	Number	Average cost	Total cost for the year	
6	Service	2	£80.00	£160.00	
7	Petrol (per litre)	1500	£0.81	£1,215.00	
8	Oil (per litre)	5	£2.39	£11.95	
9	Insurance (each month)	12	£31.73	£380.76	
10	Tax (six months)	2	£88.00	£176.00	
11	Tyres	3	£43.75	£131.25	
12	Various extras	10	£11.00	£110.00	
13			Total	£2,184.96	
14					
15	Depreciation (the reduction in value of the car)			£1,000.00	
16					
17	Total cost of running the car for the year			£3,184.96	
18					
19	Cost of running the car per mile travelled			£0.26541333	
20					

(a) (i) The average cost of a tyre is increased. Name the cell whose contents would have to be changed.

..... (1 mark)

(ii) Name **two** cells whose contents would change automatically as a result.

Cell 1:

Cell 2: (2 marks)

(b) Give **three** cell formats that have been used in this spreadsheet.

Format 1:

Format 2:

Format 3: (3 marks)

(c) Give **two** advantages of using a spreadsheet to work out the cost of running the car, compared with working out the cost by hand.

Advantage 1:

.....

Advantage 2:

..... (2 marks)

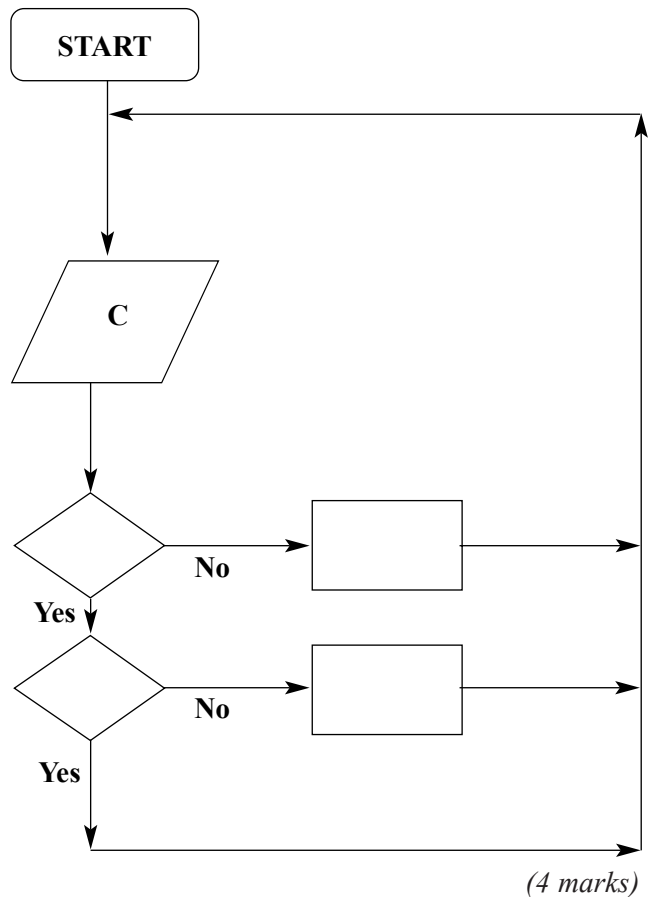
5 A supermarket stores food it needs to keep cool in large chilling cabinets. The temperature of these must be kept between 1 °C and 4 °C. If the temperature rises too high the chilling units in these cabinets are turned on.

The supermarket manager uses a feedback and monitoring system to control the temperature of the chilling cabinets.

(a) Using the **letter** next to the phrases given below, complete the flowchart to show how this system works.

The first box has been completed for you.

- A: Turn on the chilling units
- B: Remove the chilling units
- C: Read the temperature inside the chilling cabinet
- D: Is the temperature less than 4 °C?
- E: Is the temperature at least -2 °C?
- F: Turn off the chilling units
- G: Is the temperature greater than 1 °C?
- H: Print out the temperature
- I: Open the supermarket



(b) What device would be used to read the temperature inside the chilling cabinets?

..... (1 mark)

(c) How often should the temperature be read?

..... (1 mark)

(d) Why does the flowchart **not** have a FINISH box?

..... (1 mark)

6 The increasing use of e-mail as a means of communication is sometimes replacing the more traditional methods such as telephone and post.

(a) Describe what is meant by e-mail.
.....
.....
(2 marks)

(b) Give **three** advantages of using e-mail as a means of communication compared to using **post**.
Advantage 1:
.....
Advantage 2:
.....
Advantage 3:
.....
(3 marks)

(c) Give **two** disadvantages of using e-mail as a means of communication compared to using the **telephone**.
Disadvantage 1:
.....
Disadvantage 2:
.....
(2 marks)

7 Give **four** purposes of an operating system.

Purpose 1:

.....

Purpose 2:

.....

Purpose 3:

.....

Purpose 4:

.....

(4 marks)

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4

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

8 A computerised seat booking system is going to be installed in a cinema. The system will have a graphical user interface (GUI).

(a) Give **three** factors that should be considered when designing the new user interface.

Factor 1:

.....

Factor 2:

.....

Factor 3:

.....

(3 marks)

(b) Name **two** other types of user interface that could have been used.

User interface 1:

User interface 2:

(2 marks)

5

9 A chain of estate agents uses networked computers that are connected to both a WAN and a LAN. In addition they have a number of stand-alone computers.

(a) (i) What does the abbreviation WAN stand for?

.....
(1 mark)

(ii) What does the abbreviation LAN stand for?

.....
(1 mark)

(b) Give **two** differences between a WAN and a LAN.

Difference 1:

.....

Difference 2:

.....
(2 marks)

(c) Explain what is meant by the term stand-alone computer.

.....

.....
(1 mark)

(d) Give **three** advantages to the computer users at the estate agents of working on a LAN, rather than on stand-alone machines.

Advantage 1:

.....

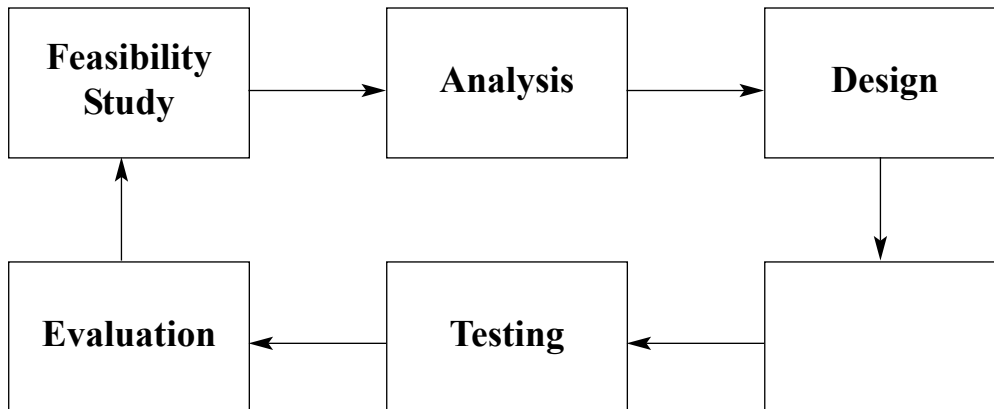
Advantage 2:

.....

Advantage 3:

.....
(3 marks)

10 The stages involved in developing a new ICT system are called "the system life cycle". The different stages involved in the system life cycle are shown in the diagram below.



(a) Which other stage of the system life cycle should be in the empty box?

.....
(1 mark)

(b) Describe **two** methods that could be used to collect information during the feasibility study.

Method 1:

.....

.....

Method 2:

.....

.....

(4 marks)

(c) Describe what happens during the **testing** stage.

.....

.....

.....

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.....

.....

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.....

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.....

.....

(3 marks)

(d) Describe the purpose of the performance criteria used in the evaluation stage.

.....

.....

.....

(1 mark)

9

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THERE ARE NO QUESTIONS PRINTED ON THIS PAGE