

Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

For Examiner's Use
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General Certificate of Secondary Education  
June 2008

**INFORMATION AND COMMUNICATION TECHNOLOGY 3521/F  
(SPECIFICATION A) (FULL COURSE)  
Foundation Tier**

**F**



Tuesday 20 May 2008 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 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. **Answers written in margins or on blank pages will not be marked.**
- Do all rough work in this book. Cross through any work you do not want to be marked.

**Information**

- The maximum mark for this paper is 80.
- 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		12	
2-5		13	
6		14	
7		15	
8		16	
9		17	
10			
11			
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			



J U N 0 8 3 5 2 1 F 0 1

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

For Questions 1 to 5, write the letter for each answer in the box given.

1 Below is a list of various types of application software.

- A database
- B desk top publishing
- C drawing
- D mail-merging
- E modelling
- F spreadsheet
- G web design
- H word processing

Which **one** would be the **most suitable** to use for each of the following tasks?

1 (a) Rotation of shapes

Answer

(1 mark)

1 (b) Typing in text for a novel

Answer

(1 mark)

1 (c) Using frames to position text and graphics on a page

Answer

(1 mark)

1 (d) Replication of cells

Answer

(1 mark)

1 (e) Carrying out a complex search on two or more criteria

Answer

(1 mark)

1 (f) A simple flight simulation

Answer

(1 mark)



2 What is meant by the term hard copy?

- A Information that is never output
- B Output saved on to ROM
- C Output on to a screen
- D Printed output

Answer

(1 mark)

3 Which **one** of the following is a right the Data Protection Act gives to data **subjects**?

- A Any data individuals want removed, must be removed
- B Data is accurate and up-to-date
- C Data must never be passed on to others
- D Prevent processing likely to cause damage or distress

Answer

(1 mark)

4 Which **one** of the following is a responsibility the Data Protection Act places on data **users**?

- A Any data individuals want removed, must be removed
- B Data is accurate and up-to-date
- C Data must never be passed on to others
- D Prevent processing likely to cause damage or distress

Answer

(1 mark)

5 Which **one** of the following is **not** a logical operator used in the construction of database queries?

- A AND
- B BUT
- C NOT
- D OR

Answer

(1 mark)

4

Turn over ►



6 Quickcallz is a High Street company that sells a range of mobile phones. They are going to produce a leaflet that will contain text and clip-art, to advertise their ‘Summer Sale’. The owners of the shop are worried about the copyright on the clip-art they are planning to use.

6 (a) What is meant by the term copyright? .....

.....

(1 mark)

6 (b) Which **one** of the following applies to the copyright on clip-art?

	Tick <b>one</b> box only
Clip-art is always free of copyright	
Clip-art is never free of copyright	
Clip-art is sometimes free of copyright	

(1 mark)

6 (c) Give **one** penalty the owners could face if they broke the copyright law.

.....

(1 mark)

6 (d) The ability to use clip-art is one feature that would make a DTP (Desk Top Publishing) package suitable for Quickcallz to produce their advertising leaflet. Give **three** other features of the software that make it suitable for producing the leaflet.

Feature 1 .....

.....

Feature 2 .....

.....

Feature 3 .....

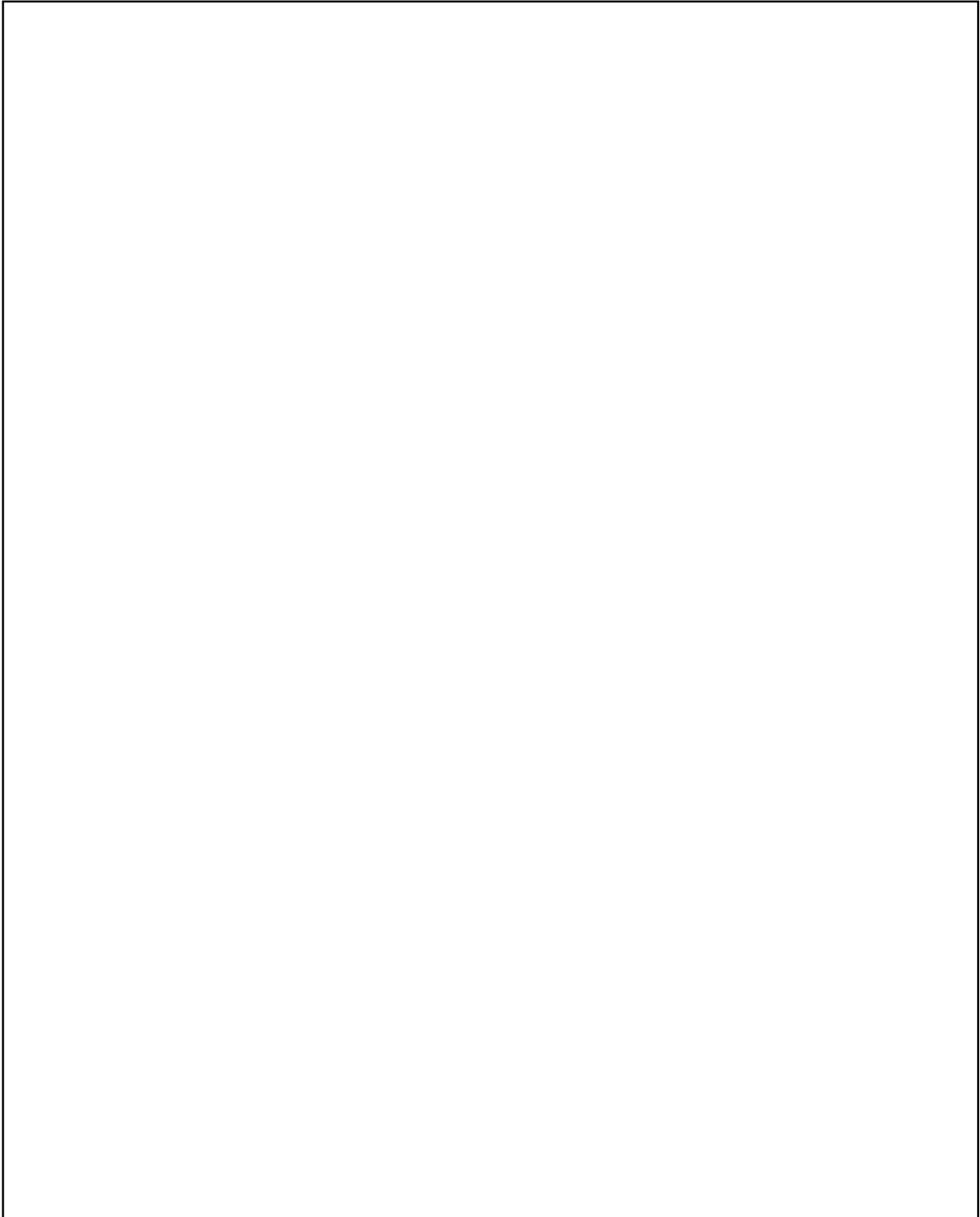
.....

(3 marks)

6
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- 7 Lancre Theme Park is about to introduce a weekly membership pass that allows visitors to pay once and use all the Park's facilities for a week. In the space below, design a Data Capture Form for people applying for a weekly membership pass. Care should be taken to include suitable fields and enough space to fill in their details.



(6 marks)

Turn over ▶

6



8 Some students are planning a School Prom for Year 11. Their first attempt is shown below.

	A	B	C	D	E
1	<b>Year 11 Prom Planner</b>				
2					
3	<b>29 June 2008</b>				
4					
5	<b>Number of students paying</b>	150			
6					
7	<b>Expenditure</b>	<b>Cost of each</b>	<b>Number needed</b>	<b>Total Cost</b>	
8	Coach Hire	£75.00	4	£300.00	
9	Function rooms	£100.00	3	£300.00	
10	Decorations (per room)	£22.50	3	£67.50	
11	Three course meal	£14.00	150	£2,100.00	
12	Soft drinks	£3.50	150	£525.00	
13					
14					
15					
16					
17	<b>Total cost of the Prom</b>			£3,292.50	
18					
19	<b>Cost per student</b>			£21.95	

8 (a) What is the cell reference of the shaded cell?

Answer

(1 mark)

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

Cell format 1 .....

Cell format 2 .....

Cell format 3 .....

(3 marks)

8 (c) A spreadsheet can generate different types of graph. Give **one** suitable type of graph that could be used to display the various kinds of expenditure.

.....

(1 mark)



- 8 (d) What formula has been used to calculate the cost per student in D19?

.....  
(1 mark)

- 8 (e) Many Year 11 students said that the maximum they would pay to go to the Prom would be £20. Explain how the software could be used for 'what if' situations, to try to keep the cost under £20.

.....  
.....  
.....  
(2 marks)

- 9 The definitions below are all related to data logging and control systems. From the list given below, choose the term which best matches the definition. Write the letter for your answer in the box provided.

<b>A</b> actuator	<b>E</b> feedback	<b>I</b> modem
<b>B</b> calibrate	<b>F</b> graphing	<b>J</b> period of logging
<b>C</b> data logging	<b>G</b> keyboard	<b>K</b> sensor
<b>D</b> encryption	<b>H</b> logging interval	<b>L</b> wizard

- 9 (a) Collecting and storing of data at regular, fixed intervals over a period of time.

Answer  (1 mark)

- 9 (b) An input device used to measure environmental conditions.

Answer  (1 mark)

- 9 (c) The time taken between one reading and the next.

Answer  (1 mark)

- 9 (d) To compare the readings of a sensor against those of a known scale.

Answer  (1 mark)

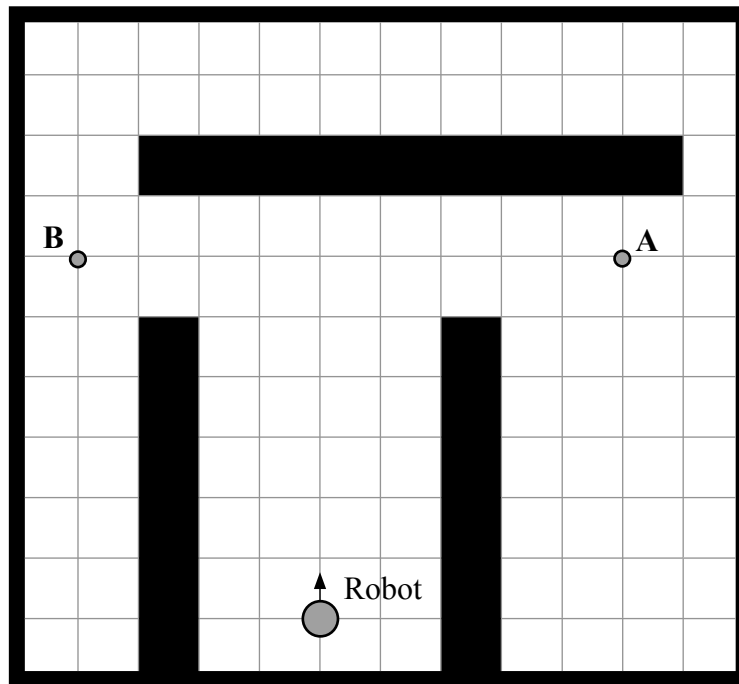
8

Turn over ▶

4



- 10 A group of pupils from a school enter a competition to build a programmable robot. The robot must move around an obstacle course without bumping into the walls. The walls are shown in black in the diagram below.



Examples of the instructions needed to program the robot are given below.

Instruction List	Movement by the robot
Fd2	Moves the robot forward 2 squares
Bk2	Moves the robot backward 2 squares
Rt90	Turns the robot right through 90 degrees

#### Command List

Fd4  
Fd5  
Fd6  
Rt90  
Bk4  
Bk5





**10 (a)** Using **only** the commands from the Command List opposite, write down instructions to move the robot from the starting position shown to point A.

.....  
.....  
.....  
.....

*(2 marks)*

**10 (b)** Again using **only** the commands from the Command List, write down instructions to move the robot from the original starting position shown to point B.

.....  
.....  
.....  
.....

*(2 marks)*

**10 (c)** Again using **only** the commands from the Command List, write down instructions to move the robot from the original starting position shown to point A, then to point B and finally back to the original starting position.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

*(3 marks)*

7

**Turn over ▶**



11 Interauc is an on-line auction site where you can buy or sell almost anything.

11 (a) What is meant by the term on-line? .....

.....  
(1 mark)

11 (b) Give **two** possible advantages to the customer of **buying goods** on Interauc rather than from a local auction house or a high street shop.

Advantage 1 .....

.....

Advantage 2 .....

.....

(2 marks)

11 (c) Give **two** possible disadvantages to a company/individual of **selling goods** on Interauc rather than selling them locally.

Disadvantage 1 .....

.....

Disadvantage 2 .....

.....

(2 marks)

11 (d) Why might Interauc **not** allow some goods to be sold on their auction site?

.....

.....

(1 mark)

6



12 Modern computer systems make use of a variety of methods of data capture, some of which are shown below.

- |                |                   |                  |
|----------------|-------------------|------------------|
| A bar codes    | D magnetic strips | G OMR            |
| B data logging | E MICR            | H questionnaires |
| C feedback     | F OCR             | I sensor         |

From the list given above, choose the **most suitable** method of data capture for each of the applications given below. Write the letter for each answer in the box given.

12 (a) Used to input students' answers to multiple-choice examination questions. Students put a mark in the box next to their chosen answer.

Answer  (1 mark)

12 (b) Used to collect information from parents about planned changes to the length of the school day.

Answer  (1 mark)

12 (c) Used to input information from groceries at the supermarket checkout.

Answer  (1 mark)

12 (d) Used to input information from a credit card when paying for petrol at a garage.

Answer  (1 mark)

12 (e) Used by banks to input cheque details including the value of the cheque.

Answer  (1 mark)

5

Turn over ►



- 13 CottagesRUS is a company that rents out holiday homes. They use a database to store information on their properties to rent. Part of the Database file is shown below.

Property ID	Type of Property	Property location	Max people	Heating	Weekly rent (min – max)	Pets allowed
C4UC01	C	Lancre	4	CH	£200 - £300	Y
C4UC02	C	Lancre	4	CF	£200 - £300	N
C4UH02	H	Hickley	12	CH	£300 - £500	N
C4UC04	C	Hickley	6	EF	£250 - £375	N
C4UB02	B	Lancre	6	CH	£275 - £375	N
C4UB03	B	Hickley	4	CH	£175 - £275	Y
C4UH03	H	Lancre	8	CH	£300 - £400	Y
C4UC06	C	Lancre	6	CF	£200 - £300	N
C4UC07	C	Lancre	2	CH	£150 - £225	N
C4UH05	H	Hickley	8	CH	£250 - £375	N
C4UB05	B	Hickley	4	CH	£175 - £250	Y
C4UC09	C	Lancre	2	CH	£150 - £225	Y

The following codes have been used for the **Type of Property** field.

C - Cottage    H - House    B – Bungalow

- 13 (a) Name **one** other field that has been coded. .... (1 mark)

- 13 (b) How many records are shown in this database file?

Answer  (1 mark)

- 13 (c) Why is the **Property ID** field needed?

..... (1 mark)

- 13 (d) CottagesRUS use data validation to check the data as it is entered into the database to make sure that it is

	Tick <b>one</b> box only
correct.	<input type="checkbox"/>
sensible.	<input type="checkbox"/>
sorted into order.	<input type="checkbox"/>

(1 mark)



13 (e) Which field would be the most suitable to validate using a range check?

	Tick <b>one</b> box only
Property location	
Max people	
Heating	

(1 mark)

13 (f) Give **two** advantages to CottagesRUS of using a database rather than a manual method for storing this information.

Advantage 1 .....

.....

Advantage 2 .....

.....

(2 marks)

7
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**Turn over for the next question**

**Turn over ▶**



**14** The stages in the development of a new computer system include Analysis, Design, Implementation, Testing and Evaluation. Below are some of the tasks that usually take place during the production of a new computer system.

- A** Considering how well the new system works
- B** Deciding the features of the software needed
- C** Entering test data
- D** Finding out how the present system works
- E** Planning screen and report layouts
- F** Preparing a Test Plan
- G** Setting up a suitable database
- H** Setting up performance criteria and desired outcomes
- I** Suggesting future improvements to the new system

For each of the questions below, write the letter or letters for the answers in the boxes given.

**14** (a) Which **two** of these would take place during the Analysis stage?

Answers

(2 marks)

**14** (b) Give **one** of these that would take place during the Design stage.

Answer

(1 mark)

**14** (c) Which **one** of these would take place during the Testing stage?

Answer

(1 mark)

**14** (d) Give **one** of these that would take place during the Evaluation stage.

Answer

(1 mark)



15 Daniel Chan has just started a new job as a reporter on a local newspaper. He has to choose a password to use on the newspaper's WAN. He has come up with four possible passwords which are:

- Daniel
- ChanNews
- DC007
- Adfhi245361

15 (a) The **least secure** choice from these four passwords would be Daniel. Give **one** reason why this would be the least secure password.

.....

.....

*(1 mark)*

15 (b) State which of these passwords would be the **most secure** and give a reason for your choice.

Password .....

*(1 mark)*

Reason.....

.....

*(1 mark)*

15 (c) What do the letters WAN stand for?

.....

*(1 mark)*

15 (d) Why would it be essential for the newspaper to be connected to a WAN?

.....

.....

*(1 mark)*

5
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Turn over ▶



16 Increasingly, companies are using e-mails to communicate between their offices around the world.

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

16 (b) Which **two** of the following are advantages of using e-mail as a means of communication compared to using **post**?

	Tick <b>two</b> boxes only
E-mails will arrive faster	
E-mails can contain pictures	
E-mails are cheaper to send	
E-mails can be sent in any weather	
E-mails can be sent to more places than post	

(2 marks)

16 (c) Give **one** disadvantage of using e-mail as a means of communication compared to using **post**.

.....  
.....  
(1 mark)

16 (d) Give **one** reason why some people may still use the telephone to communicate with people in other offices.

.....  
.....  
(1 mark)

6





17 An operating system is an essential part of any ICT system.

17 (a) Is an operating system hardware or software?

	Tick <b>one</b> box only
hardware	
software	

(1 mark)

17 (b) Which **two** of the following are tasks carried out by all operating systems?

	Tick <b>two</b> boxes only
data logging	
managing system resources including memory	
producing graphs in a database	
repairing a damaged DVD	
transferring data to a printer	

(2 marks)

17 (c) Which **one** of the following is a type of operating system?

	Tick <b>one</b> box only
multi-user	
multiplex	
multi-time	

(1 mark)

17 (d) Name **one** other type of operating system.

.....

(1 mark)

5
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**END OF QUESTIONS**



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