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|---------------------|--|--|--|--|--|------------------|--|--|--|--|
| Centre Number | | | | | | Candidate Number | | | | |
| Surname | | | | | | | | | | |
| Other Names | | | | | | | | | | |
| Candidate Signature | | | | | | | | | | |



General Certificate of Secondary Education
Foundation Tier
June 2010

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

3521/F

F

Written Paper

Monday 21 June 2010 9.00 am to 10.30 am

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. 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 80.
- You are reminded of the need for good English and clear presentation in your answers.

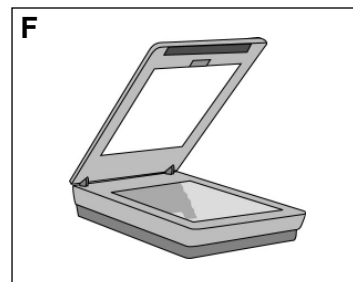
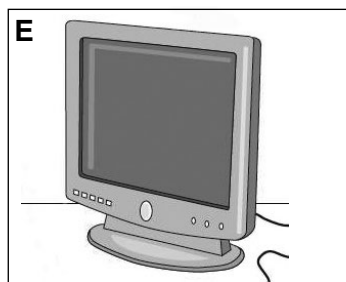
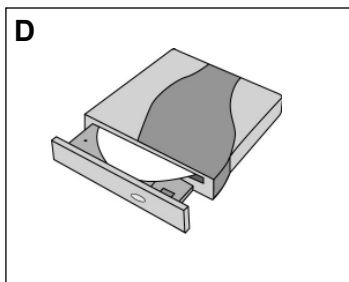
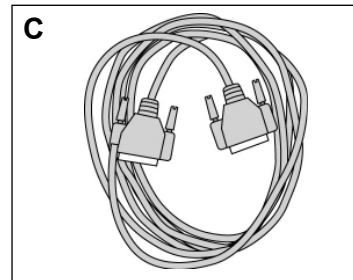
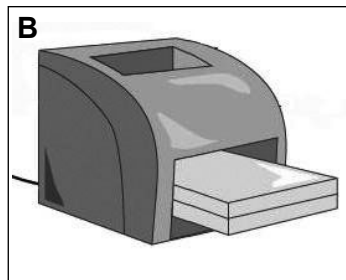
| For Examiner's Use | |
|---------------------|------|
| Examiner's Initials | |
| Question | Mark |
| 1 | |
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| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| TOTAL | |



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

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

1 Look at the devices below.



1 (a) (i) Name the **input** device shown in picture A. (1 mark)

1 (a) (ii) Which other picture shows an **input** device?

Answer

(1 mark)

1 (a) (iii) Name **one** input device not shown above. (1 mark)

1 (b) (i) Name the **output** device shown in picture B. (1 mark)

1 (b) (ii) Which other picture shows an **output** device?

Answer

(1 mark)

1 (b) (iii) Name **one** output device not shown above. (1 mark)

1 (c) Which **one** of the pictures above is a storage device?

Answer

(1 mark)

7



2 Match the letters **A**, **B**, **C** and **D** with the definitions given below.

A Data logging

B Logging interval

C Period of logging

D Calibrate

2 (a) The process of collecting and storing data at regular intervals over a fixed time period.

Answer

(1 mark)

2 (b) The time between one reading being taken and the next reading being taken.

Answer

(1 mark)

2 (c) Matching the reading being taken against a known scale.

Answer

(1 mark)

2 (d) The time between the first reading being taken and the last reading being taken.

Answer

(1 mark)

| |
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| 4 |

Turn over for the next question

Turn over ▶



- 3 The manager of Lancre Sports Centre has produced the flyer below using Desktop Publishing software. The flyer will be delivered to houses around the Sports Centre to try and attract new members.

Lancre Sports Centre
 'Try a new sport' week.
 Get fit for the summer
 For more details phone Sue on 057 117 11700
 Dates: 1st to 7th of June 2010
 For one week only all activities will be half price.

- 3 (a) Tick **two** boxes to show which of the following features of a Desktop Publishing package would be the best to use to improve the layout of the leaflet.

| | Tick two boxes only |
|---------------|-------------------------------|
| Coloured text | |
| Line spacing | |
| Centre | |
| Mail-merging | |
| Hyperlink | |

(2 marks)

- 3 (b) Name **one** feature of the software that could be used to check the accuracy of the text used in the flyer.

Feature

(1 mark)

- 3 (c) The manager wants to use the cut and paste feature of the Desktop Publishing package to move the fourth line to the end of the flyer.

Describe how this would be done.

.....

.....

.....

.....

(2 marks)

5



4 In the space below, complete the design of a Data Capture Form for new patients who wish to register with a medical practice. Care should be taken to include suitable fields and enough space to fill in their details.

Surname

| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Other Name

| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Address 1

| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Address 2

| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | |
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(4 marks)

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Turn over ▶

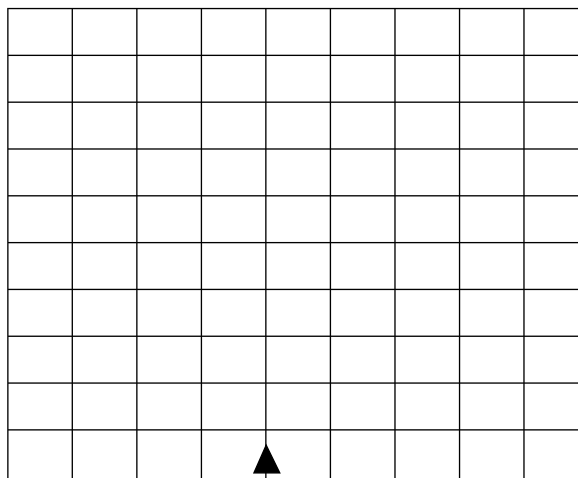


- 5** A computer system controls the movement of a robot on a grid. The robot is moved by typing commands into the computer system. The commands which are used to move the robot are FD, BK, LT and RT. Examples of how the commands could be used to move the robot are given below.

| Command | Action by robot |
|----------------|---|
| FD 2 | would move the robot forward 2 squares |
| BK 3 | would move the robot back 3 squares |
| LT 90 | would turn the robot left through an angle of 90 degrees |
| RT 90 | would turn the robot right through an angle of 90 degrees |

- 5 (a)** On the grid below, draw the path that would be taken by the robot if it followed these commands.

FD 6
BK 3
LT 90
FD 3
BK 6
RT 90
FD 3
LT 90
FD 3

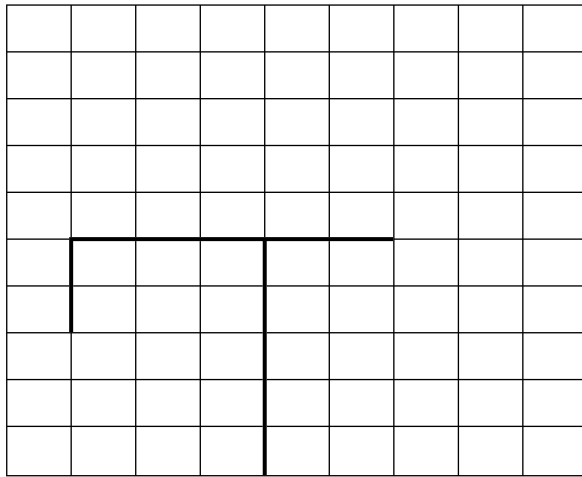


Start here

(2 marks)



5 (b) Write down the commands needed to draw this shape.



Start here

Commands

.....

.....

.....

.....

.....

.....

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.....

.....

.....

(2 marks)

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Turn over for the next question

Turn over ▶



- 6 A school uses a database to store details about Year 11 students going to the Prom at the end of June 2010. Part of this database is given below.

| Student Number | Student Name | Consent Form Received | Deposit Paid | Fully Paid | Travelling by Coach |
|----------------|------------------|-----------------------|--------------|------------|---------------------|
| 0003 | Abbot John | Y | Y | Y | Y |
| 0005 | Ali Fessur | Y | Y | N | Y |
| 0006 | Allen Rebecca | Y | Y | N | Y |
| 0008 | Allen Robert | Y | N | N | Y |
| 0009 | Armstrong Paul | Y | Y | N | Y |
| 0012 | Bashir Sabia | Y | Y | N | Y |
| 0014 | Bean Jade | Y | Y | N | Y |
| 0016 | Bell Lucy | Y | Y | N | Y |
| 0018 | Blackburn Sophie | Y | N | N | N |
| 0020 | Brown Sara | Y | Y | Y | N |

- 6 (a) Student Number is the key field in this database table. Tick **two** boxes to show which of the following are important features of a key field.

| | Tick two boxes only |
|---|-------------------------------|
| A key field must always be a number | |
| A key field must always contain text | |
| A key field must never be empty | |
| A key field must never be longer than seven characters | |
| A key field must contain a different value in each record in the database table | |

(2 marks)

- 6 (b) Much of the data entered into this database has been coded. Give **one** advantage of coding data.

.....

.....

(1 mark)



6 (c) The school is also looking at ways to improve the security of the computer systems around the site. Tick **two** boxes to show which of the following would be the most reasonable to make sure the hardware is physically secure.

| | Tick two boxes only |
|--|-------------------------------|
| To lock all computer rooms when not in use | |
| To keep all parts of the school locked at all times | |
| To use a virus scanner | |
| Make sure all the computer rooms are on the ground floor | |
| Use clamps and cables to attach the computer to the desk | |

(2 marks)

6 (d) The school already uses passwords to restrict access to its network. Suggest **two** pieces of good advice that should be given to students about choosing a new password.

Advice 1

.....

Advice 2

.....

(2 marks)

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| 7 |
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Turn over for the next question

Turn over ▶



7 A manager buys five copies of a database package to run on the office's five computers. The manager decides to take a copy of the software home and use it on her home computer as well.

7 (a) (i) Tick **one** box to show which law has been broken.

| | |
|---------------------|--------------------------|
| | Tick one box only |
| Copyright | |
| Health and Safety | |
| Data Protection Act | |

(1 mark)

7 (a) (ii) How could the manager have avoided breaking this law?

.....

.....

(1 mark)

7 (b) The office's computers are connected to the Internet and the manager worries about the possibility of hackers and viruses. What is meant by the term hackers and the term viruses?

7 (b) (i) Hackers

.....

.....

(2 marks)

7 (b) (ii) Viruses

.....

.....

(2 marks)

| |
|---|
| 6 |
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8 More and more people are using Internet banking for their personal finances rather than the traditional banks that are situated on the high streets of every town.

8 (a) Which **two** of the following would be **advantages** to a customer of Internet banking compared with using a bank on the high street?

| | Tick two boxes only |
|--|-------------------------------|
| You are allowed to put more money into Internet banks | |
| You can transfer money 24 hours a day | |
| You can get cash out 24 hours a day | |
| You can pay bills from your account without having to leave home | |
| You don't have to open a bank account | |

(2 marks)

8 (b) Outline **two** possible **disadvantages** to a customer of Internet banking compared with using a bank on the high street.

Disadvantage 1

Disadvantage 2

(2 marks)

| |
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Turn over for the next question

Turn over ▶



9 The Lancre and District Football League has finished for the season and the final results are shown in the spreadsheet below.

| | A | B | C | D | E | F |
|----|---------------------|--------------|-----------|-------------|------------|--------------|
| 1 | | Games Played | Games Won | Games Drawn | Games Lost | Total points |
| 2 | | | | | | |
| 3 | Lancre United | 16 | 14 | 1 | 1 | 43 |
| 4 | Hickley Rovers | 16 | 12 | 3 | 1 | 39 |
| 5 | Lancre Town | 16 | 10 | 2 | 4 | 32 |
| 6 | Hickley Palace | 16 | 8 | 2 | 6 | 26 |
| 7 | Hazeldene Athletic | 16 | 6 | 4 | 6 | 22 |
| 8 | Whiteport Wanderers | 16 | 5 | 2 | 9 | 17 |
| 9 | Ramsby Rovers | 16 | 4 | 3 | 9 | 15 |
| 10 | Wheaton F.C. | 16 | 1 | 5 | 10 | 8 |
| 11 | Broughton United | 16 | 0 | 2 | 14 | 2 |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | Total | | 60 | 24 | 60 | |
| 15 | | | | | | |

9 (a) Which cell contains the number 12? (1 mark)

9 (b) What formula may have been used to find the total for the games won in cell C14?
 (1 mark)

9 (c) In this league,
 3 points are given for win
 1 point is given for a draw
 0 points are given for loss

Tick **one** box to show the formula used in cell F3.

| | Tick one box only |
|---------------|--------------------------|
| =Sum(C3:E3) | <input type="checkbox"/> |
| =C3*3+D3*1+E3 | <input type="checkbox"/> |
| =C3*3+D3 | <input type="checkbox"/> |

(1 mark)



9 (d) A similar formula to the one in F3 would be needed in cells F4 to F11. Explain how this could be done without typing a formula into each new cell.

.....

.....

.....

(2 marks)

9 (e) The spreadsheet comes with a help facility. Explain how you would get to this help facility to find more about using formulae.

.....

.....

.....

(2 marks)

9 (f) It is important that each club knows the final results of the league. Give **two** advantages of these results being sent to each club by e-mail compared to sending them by post.

| | Tick two boxes only |
|---|----------------------------|
| More than one e-mail can be sent to each club | |
| E-mails will usually arrive faster | |
| E-mails will arrive even if nobody is at home | |
| E-mails can be sent at any time of the day | |
| E-mails will be cheaper to send | |

(2 marks)

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| 9 |
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Turn over for the next question

Turn over ▶



- 10 (a)** A new ICT system is being planned for a library. After the analysis stage, a detailed design is completed. Which **two** of the following would you expect to find in the design produced?

| | Tick two boxes only |
|---|-------------------------------|
| Detailed planning for the reports that will be produced by the system | |
| A listing of the performance criteria for use in the evaluation | |
| A review of the effectiveness of the system | |
| A test plan with test data | |
| The User Guide | |

(2 marks)

- 10 (b)** The new system will need to be tested before it can be used on a daily basis in the library. The testing stage involves the use of a test plan. Which **one** of the following would you expect to find in a test plan?

| | Tick one box only |
|---|-----------------------------|
| Expected results | |
| The listing of performance criteria for use in the evaluation | |
| Instructions for installing the new system | |
| Printed results from the implementation | |

(1 mark)



10 (c) As part of the testing, the computer software will check the number of books a person has on loan at any one time. The minimum number will be zero and the maximum number will be ten.

10 (c) (i) Which **one** of the following would be suitable to be used as extreme test data?

| Data | Tick one box only |
|------|-----------------------------|
| 7 | |
| 10 | |
| 15 | |
| 2 | |

(1 mark)

10 (c) (ii) Which **one** of the following would be suitable to be used as erroneous test data?

| Data | Tick one box only |
|------|-----------------------------|
| 7 | |
| 10 | |
| 15 | |
| 2 | |

(1 mark)

| |
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Turn over for the next question

Turn over ▶



11 When planning a new computer system it is very important to consider carefully the type and design of the user interface. Many systems today use a Graphical User Interface (GUI).

11 (a) Give **one** advantage of using a Graphical User Interface.

.....

 (1 mark)

11 (b) Name **two** other types of user interface.

User interface 1

User interface 2

(2 marks)

11 (c) When designing the new user interface, it is necessary to consider such important factors as consistency of layout. Give **two** other important features to consider when designing a user interface.

Feature 1

Feature 2

(2 marks)

11 (d) (i) When planning a new computer system, it is also important to consider which operating system to install. Which **two** of the following tasks are managed by an operating system?

| | Tick two boxes only |
|---|----------------------------|
| The rotation of a shape in a graphics package | |
| Mail-merging in a word processing document | |
| Data transfer to and from peripherals | |
| Sharing resources between different tasks | |
| The use of 'what if' modelling situations | |

(2 marks)

11 (d) (ii) Give another task that would be carried out by an operating system.

.....

 (1 mark)

| |
|---|
| 8 |
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12 (a) What is meant by the term data validation?

.....

.....

.....

.....

(2 marks)

12 (b) From the list given, choose the term which best matches the type of validation defined in the left-hand column of the table below. Write your answers in the spaces provided.

- | | |
|--------------------|----------------|
| alphanumeric check | check digit |
| grammar check | numeric check |
| parity check | presence check |
| range check | spelling check |

| Type of validation | Term which best matches the definition |
|---|---|
| Checks that a data value is within realistic limits | |
| Checks that a data value must be entered into a given field | |
| Used as a check when bar code data is input | |

(3 marks)

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Turn over for the next question

Turn over ▶



13 A large electrical superstore keeps information about the products it sells in a database table. Part of the database table is given below.

| Product Code | Product Name | Colour | Number in Stock | Selling Price (£) | Other Comments |
|--------------|-----------------|--------|-----------------|-------------------|----------------------------|
| DV024 | DVD player | Black | 10 | 25.00 | SALE price |
| DV061 | DVD recorder | Black | 8 | 229.99 | None |
| FZ034 | Freezer | White | 4 | 199.99 | 2 year guarantee |
| FZ078 | Freezer | White | 6 | 149.99 | None |
| FG082 | Fridge | Cream | 3 | 109.99 | None |
| FG123 | Fridge | White | 10 | 99.99 | SALE price |
| FG156 | Fridge | White | 10 | 119.00 | 2 year guarantee |
| MV012 | Microwave | White | 12 | 39.99 | SALE price |
| MV037 | Microwave | Brown | 8 | 75.00 | None |
| TV459 | Television | Black | 15 | 99.99 | Portable TV |
| TV517 | Television | Black | 3 | 695.00 | 2 year guarantee |
| TV629 | Television | Black | 8 | 299.95 | SALE price |
| TV781 | Television | Brown | 1 | 495.00 | Item needs to be reordered |
| WM278 | Washing machine | White | 7 | 199.00 | SALE price |
| WM314 | Washing machine | White | 1 | 249.99 | Item needs to be reordered |

In order to search the database, the following commands are used.

- List
- When
- Equals
- Greater than
- Less than
- And
- Or

As an example

List Product Code **When** Colour **Equals** Brown

would produce the result

MV037

TV781

13 (a) What would be the results of the following searches?

13 (a) (i) **List** Product Code **When** Selling Price (£) **Equals** 99.99

.....

.....

.....

(1 mark)



13 (a) (ii) List Product Code, Product Name **When** Other Comments **Equals** 2 year guarantee

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

(1 mark)

13 (b) Write down the instructions needed to produce the following.

13 (b) (i) A list of the Product Codes, where the Product Name is a DVD player.

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

(1 mark)

13 (b) (ii) A list of the Product Codes and Product Names, where the Selling Price (£) is greater than 500 pounds.

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

(2 marks)

Turn over for the next question

| |
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| 5 |

Turn over ▶



14 A bank's computer system uses RAM to store the data that is being processed.

14 (a) (i) What does RAM stand for?

.....
(1 mark)

14 (a) (ii) Tick **one** box to show which of the following statements is true.

| | Tick one box only |
|--|-----------------------------|
| ROM is volatile memory | |
| RAM is volatile memory | |
| Both ROM and RAM are volatile memories | |
| Neither ROM nor RAM is volatile memory | |

(1 mark)

14 (b) Tick **three** boxes to show which of the following are responsibilities of the bank as a data user.

| | Tick three boxes only |
|---|---------------------------------|
| Information should never be given to anyone under any circumstances | |
| Information should be kept accurate and up to date | |
| Information should not contain names and addresses | |
| Information should be changed at the request of the data subject, whatever the reason | |
| Information should never be transferred outside of the UK | |
| Information should be relevant and not excessive for the purpose | |
| Information should be kept secure | |

(3 marks)



- 14 (c)** Tick **two** boxes to show which of the following are rights the Data Protection Act gives to the bank's customers.

| | Tick two boxes only |
|---|-------------------------------|
| The right to go on-line and change any information they want about themselves | |
| The right to see or be sent a copy of the data held about them | |
| The right to see the information held on other customers who live close to them | |
| The right to privacy, so no member of staff at the bank can ever look at their data | |
| The right to seek compensation for damage caused by the use of inaccurate data | |

(2 marks)

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| 7 |
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END OF QUESTIONS

There are no questions printed on this page

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