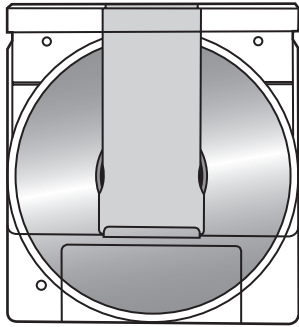


1 Name the methods of storage **A**, **B**, **C** and **D** using the words from the list.

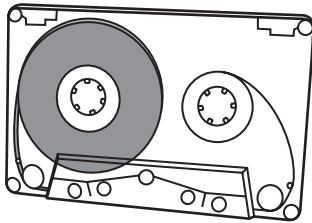
A



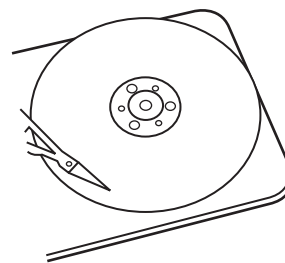
B



C



D



Bar code

Chip

DVD RAM

Graphics tablet

Light pen

Magnetic disc

Magnetic tape

Pen drive

A .....

B .....

C .....

D .....

[4]

2 Ring **two** items which are output devices.

Blu-ray disc

Graph plotter

Graphics tablet

Optical mark reader

Projector

Web cam

[2]

- 3 Tick **TRUE** or **FALSE** next to each of these statements.

	TRUE	FALSE
Input devices are examples of hardware		
Backing storage devices are examples of software		
A Graphical User Interface is a part of an operating system		
A laptop computer cannot be carried around		

[4]

- 4 Draw **five** lines on the diagram to match the input device to its most appropriate use.

Input device	Use
Remote control	Inputting freehand drawings into a computer
Keyboard	Operating a television
Touch screen	Entering text when writing a book
Chip reader	Selecting options in a tourist information kiosk
Graphics tablet	Reading information from a credit card

[5]

- 5 Complete each sentence below using **one** item from the list.

**A hub****An intranet****A proxy server****A WAN****A WLAN**

- (a) ..... is a device used to connect computers together to form a LAN.
- (b) ..... is a network with restricted access.
- (c) ..... can allow networked computers to connect to the internet.
- (d) ..... is a wireless local area network.

[4]

- 6 Students can use CDs or pen drives for storing their work. Give **three** reasons why students may prefer to use pen drives.

*For  
Examiner's  
Use*

1 .....

.....

2 .....

.....

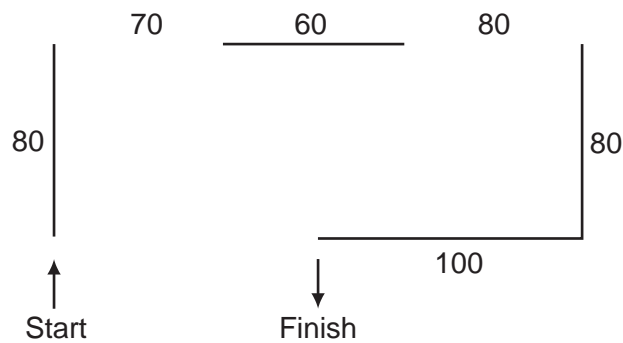
3 .....

..... [3]

7 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD $n$	Move $n$ mm forward
BACKWARD $n$	Move $n$ mm backward
LEFT $t$	Turn left $t$ degrees
RIGHT $t$	Turn right $t$ degrees
PENUP	Lift the pen
PENDOWN	Lower the pen

For  
Examiner's  
Use



Complete the set of instructions to draw this shape by filling in the blank lines.

PEN DOWN

FORWARD 80

RIGHT 90

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[5]

- 8 Tick **three** developments which have arisen because of the internet.

	<input checked="" type="checkbox"/>
Web logs	<input type="checkbox"/>
Databases	<input type="checkbox"/>
Models	<input type="checkbox"/>
Wikis	<input type="checkbox"/>
DTP	<input type="checkbox"/>
Social networking sites	<input type="checkbox"/>

[3]

- 9 Tick **TRUE** or **FALSE** next to each statement to indicate whether it is an example of batch processing.

	TRUE	FALSE
Withdrawing money from an ATM	<input type="checkbox"/>	<input type="checkbox"/>
Producing utility bills	<input type="checkbox"/>	<input type="checkbox"/>
Booking a plane ticket	<input type="checkbox"/>	<input type="checkbox"/>
Producing payslips	<input type="checkbox"/>	<input type="checkbox"/>

[4]

- 10 A school uses a computer controlled greenhouse to grow plants.

- (a) Name **three** sensors that would be used in the greenhouse.

- 1 ..... [3]
- 2 .....
- 3 .....

- (b) Explain why analogue to digital conversion is needed when computers are used to control a greenhouse.

.....

.....

.....

..... [2]

- (c) Tick **three** advantages of using computers, rather than students, to control the growing conditions.

For  
Examiner's  
Use

	✓
Computer readings are more accurate	
Students always forget to take readings	
Students might be unavailable to take readings during school holidays	
Computers can record data for later use	
Computers can analyse the results	
Computers can react to changes in the conditions immediately	

[3]

The students want a printed record of the computer readings as they are taken. They want to put the printer inside the greenhouse. Their teacher has suggested a dot matrix printer. The students suggested an inkjet printer.

- (d) Give **two** reasons why the teacher has suggested a dot matrix printer.

1 .....  
 .....  
 2 .....  
 ..... [2]

- (e) Give **two** reasons why the students have suggested an inkjet printer.

1 .....  
 .....  
 2 .....  
 ..... [2]

- 11 A school library has a file for storing details of the books it has and a file for storing details of its borrowers. The two files are linked using a common field.

For  
Examiner's  
Use

Book File

Code	Title	Author	Published	Number in stock	Cost
1857028898	The Code Book	Simon Singh	1999	2	£10.99
0747591054	The Deathly Hallows	J K Rowling	2007	8	£17.99
0748791167	Sepulchre	Kate Mosse	2007	3	£18.99
0563371218	Full Circle	Michael Palin	1997	1	£19.99

Years 10 and 11 Borrower File

Number	Name	Form	Book Borrowed	Due Back
0102	Me Te Loan	11A	1857028898	14/06/2010
1097	Gurvinder Moore	10C	0747591054	12/06/2010
0767	Akhtar Aftab	10B	0748791167	06/06/2010
0611	Graham Reeves	10D	0563371218	08/06/2010

- (a) How many records are there in the book file?

..... [1]

- (b) How many fields are there in the borrower file?

..... [1]

- (c) What type of database do these two files form?

..... [1]

- (d) Give **two** reasons why this type of database system is used rather than having two flat files.

1 .....

.....

2 .....

..... [2]

(e) Which field is the primary key in the Book file?

..... [1]

(f) Which field is the foreign key?

..... [1]

(g) Which field has the data type currency?

..... [1]

(h) What data type would be most appropriate for the **Due Back** field?

..... [1]

(i) Name the most appropriate validation check for the **Number in stock** field.

..... [1]

(j) Name the most appropriate validation check for the **Form** field.

..... [1]



- 12 Aftab and his family have three computers in their home. He wants to connect the computers into a network. Explain why he would need:

A router .....

.....

A browser .....

.....

Email .....

.....

An ISP .....

..... [4]

- 13 The use of computer networks can lead to problems in keeping data secure and confidential.

(a) Tick **two** problems which can affect the security of data.

	<input checked="" type="checkbox"/>
Data encryption techniques are easy to crack	<input type="checkbox"/>
Data can be accessed without being in the building where it is stored	<input type="checkbox"/>
Data thieves often do not leave physical signs of robbery	<input type="checkbox"/>
Data passwords are easy to guess	<input type="checkbox"/>

[2]

(b) Tick **two** ways of increasing the confidentiality of data.

	<input checked="" type="checkbox"/>
Make backups of the data	<input type="checkbox"/>
Users should write down their password in case they forget it	<input type="checkbox"/>
Have a firewall connected to the network	<input type="checkbox"/>
Have different levels of access to the data	<input type="checkbox"/>

[2]

- 14** Joan owns a small company. She wishes to replace the existing computerised system with a new one. She has employed a systems analyst, Jasvir, to plan this.

- (a)** Before Jasvir decides on a system he must collect information about the existing system. Tick whether the following statements about the various methods of information collection are **TRUE** or **FALSE**.

	TRUE	FALSE
Examining documents has to be done in the presence of all the workers		
Appointments have to be made with a worker in order to complete a questionnaire		
It is possible to change questions in the course of an interview		
Observing the current system can provide a detailed view of the workings of the system		

[4]

- (b)** After Jasvir has completed the analysis of the existing system, he will need to design the new system. Tick **four** items which would need to be designed.

	<input checked="" type="checkbox"/>
Inputs to the current system	<input type="checkbox"/>
User and information requirements	<input type="checkbox"/>
Data capture forms	<input type="checkbox"/>
Validation routines	<input type="checkbox"/>
Problems with the current system	<input type="checkbox"/>
File structure	<input type="checkbox"/>
Report layouts	<input type="checkbox"/>
Limitations of the system	<input type="checkbox"/>

[4]

- 15** After a system is designed it will be implemented. Give **one** advantage of each of the following methods of implementation.

Direct changeover .....

.....

Parallel running .....

.....

Phased implementation .....

..... [3]

- 16** After a system has been implemented it needs to be evaluated. Identify **two** evaluation strategies and state a reason why each is needed.

Strategy 1 .....

.....

Reason 1 .....

.....

Strategy 2 .....

.....

Reason 2 .....

..... [4]

- 17 Describe **three** items of hardware which would be needed, in addition to those normally supplied with a PC, in order to take part in a video conference.

1 .....

.....

2 .....

.....

3 .....

..... [3]

- 18 A supermarket uses POS terminals at its checkouts. This enables stock levels to be updated automatically. Put the following steps in order using the numbers 2 to 8. Step 1 has already been done for you.

The number in stock of the matching record is read	
Until a match is found with the entered bar code	
The data file is searched	
The bar code on the product is read by the bar code reader	1
The new value of number in stock is written back to the file	
If it is equal to the re-order number then more goods are automatically re-ordered	
One is subtracted from the number in stock	
The number in stock is compared with the re-order number	

[7]

- 19 Give **three** reasons why pilots are trained using flight simulators rather than by flying real aircraft.

1 .....

.....

2 .....

.....

3 .....

..... [3]

- 20 Explain what is meant by the following terms.

Phishing .....

.....

Pharming .....

.....

Spam .....

..... [3]

21 When sending documents companies sometimes use email and sometimes use ordinary post.

*For  
Examiner's  
Use*

(a) Give **two** reasons why email might be used.

1 .....

.....

2 .....

..... [2]

(b) Give **two** reasons why ordinary post might be used.

1 .....

.....

2 .....

..... [2]

Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2010	0417	12

Ques. No.	Answer	Part mark															
1	A DVD RAM C Magnetic tape B Pen drive D Magnetic disc	1, 1 1, 1															
2	Blu ray disc Optical mark reader Graph plotter Projector Graphics tablet Web cam	1 1															
3	<table border="1"> <thead> <tr> <th></th><th>TRUE</th><th>FALSE</th></tr> </thead> <tbody> <tr> <td>Input devices are examples of hardware.</td><td>✓</td><td></td></tr> <tr> <td>Backing storage devices are examples of software.</td><td></td><td>✓</td></tr> <tr> <td>A Graphic User Interface is a part of an operating system.</td><td>✓</td><td></td></tr> <tr> <td>A laptop computer cannot be carried around.</td><td></td><td>✓</td></tr> </tbody> </table>		TRUE	FALSE	Input devices are examples of hardware.	✓		Backing storage devices are examples of software.		✓	A Graphic User Interface is a part of an operating system.	✓		A laptop computer cannot be carried around.		✓	1 1 1 1
	TRUE	FALSE															
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Backing storage devices are examples of software.		✓															
A Graphic User Interface is a part of an operating system.	✓																
A laptop computer cannot be carried around.		✓															
4	<p>Remote Control → to input freehand drawings into a computer</p> <p>Keyboard → operating a television</p> <p>Touch screen → entering text when writing a book</p> <p>Chip reader → selecting options in a tourist information kiosk</p> <p>Graphics tablet → reading information from a credit card</p>	1 1 1 1 1															
5 (a)	<b>a hub</b> is a device used to connect computers together to form a LAN	1															
(b)	<b>an Intranet</b> is a network with restricted access	1															
(c)	<b>a Proxy server</b> can allow networked computers to connect to the internet	1															
(d)	<b>a WLAN</b> is a wireless local area network	1															
6	<b>Three</b> from: Pen drives have greater storage capacity Pen drives are more portable Not all machines have CD drives Faster access to data More robust More secure as biometric data can be incorporated Don't need specialist hardware/software for pen drives	3															

<b>Page 3</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – May/June 2010</b>	<b>0417</b>	<b>12</b>

7	<div>PENUP FORWARD 70 ----- PENDOWN FORWARD 60 ----- PENUP FORWARD 80 ----- RIGHT 90/PENDOWN PENDOWN/RIGHT 90 FORWARD 80 ----- RIGHT 90 FORWARD 100</div> <div>1 mark for each 2/3 statements</div>	5															
8	<table><tr><td>Web logs</td><td>✓</td></tr><tr><td>Databases</td><td></td></tr><tr><td>Models</td><td></td></tr><tr><td>Wikis</td><td>✓</td></tr><tr><td>DTP</td><td></td></tr><tr><td>Social networking sites</td><td>✓</td></tr></table>	Web logs	✓	Databases		Models		Wikis	✓	DTP		Social networking sites	✓	<div>1</div> <div>1</div> <div>1</div>			
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Databases																	
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DTP																	
Social networking sites	✓																
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Producing utility bills	✓																
Booking a plane ticket		✓															
Producing payslips	✓																



<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – May/June 2010</b>	<b>0417</b>	<b>12</b>

10 (a)	Three from: Humidity Moisture Temperature Light pH CO <sub>2</sub>	3												
(b)	Sensors feed back analogue data Computers can only work with digital/binary data/cannot read analogue	1 1												
(c)	<table><tr><td>Computer readings are more accurate.</td><td>✓</td></tr><tr><td>Students always forget to take readings</td><td></td></tr><tr><td>Students might be unavailable to take readings during school holidays.</td><td>✓</td></tr><tr><td>Computers can record data for later use.</td><td></td></tr><tr><td>Computers can analyse the results.</td><td></td></tr><tr><td>Computers can react to changes in the conditions immediately.</td><td>✓</td></tr></table>	Computer readings are more accurate.	✓	Students always forget to take readings		Students might be unavailable to take readings during school holidays.	✓	Computers can record data for later use.		Computers can analyse the results.		Computers can react to changes in the conditions immediately.	✓	1   1   1
Computer readings are more accurate.	✓													
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Students might be unavailable to take readings during school holidays.	✓													
Computers can record data for later use.														
Computers can analyse the results.														
Computers can react to changes in the conditions immediately.	✓													
(d)	Two from: Earth/chemical particles will not affect its performance. It can operate without needing to refill the paper as regularly/can work on continuous paper. Running costs are low.	2												
(e)	Two from: It will be cheaper to buy. Print outs will be clearer. It is more compact.	2												
11 (a)	4	1												
(b)	5	1												
(c)	Relational database	1												
(d)	Two from: Data does not have to be typed in twice/referential integrity. Quicker to enter new data. So fewer errors are likely. So less memory/storage capacity is used. So it is easier to edit data.	2												
(e)	Code	1												
(f)	Book Borrowed	1												
(g)	Cost	1												
(h)	Date	1												
(i)	Range check	1												
(j)	Format/picture/input mask	1												

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
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12	<b>A router</b> – so that data can be transferred from one network to another <b>A browser</b> – to access the (world wide) web /view web pages/surf the net <b>Email</b> – so that he can send messages to people <u>outside the</u> network/home <b>An ISP</b> – in order that he can access the internet/email/to provide internet service	1 1 1 1																
13 (a)	<table><tr><td>Data encryption techniques are easy to crack.</td><td></td></tr><tr><td>Data can be accessed without being in the building where it is stored.</td><td>✓</td></tr><tr><td>Data thieves do not leave physical signs of robbery.</td><td>✓</td></tr><tr><td>Data passwords are easy to guess.</td><td></td></tr></table>	Data encryption techniques are easy to crack.		Data can be accessed without being in the building where it is stored.	✓	Data thieves do not leave physical signs of robbery.	✓	Data passwords are easy to guess.		1 1								
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<b>Page 6</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
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<b>15</b>	<p><b>Direct changeover – One</b> from: It is the quickest method of implementation/the benefits are available immediately Do not have the expense of running two systems</p> <p><b>Parallel running</b> There is always the old system to fall back on in the event of the new system failing</p> <p><b>Phased implementation – One</b> from: Still have rest of old system if new system fails Training can be gradual Enables refinement of each phase of the system before fully implementing</p>	<b>3</b>																								
<b>16</b>	<p><b>Two</b> strategies and <b>two</b> reasons from:</p> <p>Strategy – compare the solution with the original task requirements/design brief Reason – to ensure that requirements have been met</p> <p>Strategy – identify any limitations/necessary improvements to the system Reason – so that system works without problems</p> <p>Strategy – Collect data from the users of the new system Reason – to see how well they are coping with the new system/ to see how well the new system works</p> <p>Strategy – analyse (evaluate) the users' responses to the results of testing/using the system Reason – so that users needs are taken into account</p>	<b>4</b> <b>(2 + 2)</b>																								
<b>17</b>	<p><b>Three</b> from: Web cam/video camera to input/capture video (images of participants/documents) router/modem to transmit data to participants' (computers) Microphone to input voices of participants/to speak to other participants Headphones/speakers to output voices to participants/hear other participants Large screen/projector to see other participants</p>	<b>3</b>																								
<b>18</b>	<table border="1"> <tr> <td>The number in stock of the matching record is read</td><td><b>4</b></td><td><b>1</b></td></tr> <tr> <td>Until a match is found with the entered bar code</td><td><b>3</b></td><td><b>1</b></td></tr> <tr> <td>The bar code field in the data file is read record by record</td><td><b>2</b></td><td><b>1</b></td></tr> <tr> <td>The bar code on the product is read by the bar code reader</td><td><b>1</b></td><td></td></tr> <tr> <td>The new value of number in stock is written back to the file</td><td><b>8</b></td><td><b>1</b></td></tr> <tr> <td>If it is equal to the re-order number then more goods are automatically re-ordered</td><td><b>7</b></td><td><b>1</b></td></tr> <tr> <td>One is subtracted from the number in stock</td><td><b>5</b></td><td><b>1</b></td></tr> <tr> <td>The number in stock is compared with the re-order number</td><td><b>6</b></td><td><b>1</b></td></tr> </table>	The number in stock of the matching record is read	<b>4</b>	<b>1</b>	Until a match is found with the entered bar code	<b>3</b>	<b>1</b>	The bar code field in the data file is read record by record	<b>2</b>	<b>1</b>	The bar code on the product is read by the bar code reader	<b>1</b>		The new value of number in stock is written back to the file	<b>8</b>	<b>1</b>	If it is equal to the re-order number then more goods are automatically re-ordered	<b>7</b>	<b>1</b>	One is subtracted from the number in stock	<b>5</b>	<b>1</b>	The number in stock is compared with the re-order number	<b>6</b>	<b>1</b>	
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<b>19</b>	<b>Three</b> from: If the airplane crashed you wouldn't need to replace it – saving money If the airplane crashed nobody is injured It is easy to recreate extreme weather conditions It is easy to create unusual flying conditions Can recreate mechanical/computer failure from previous real situations Cheaper fuel costs	<b>3</b>
<b>20</b>	<b>Phishing</b> <b>One</b> from: is using <u>e-mails</u> pretending to be the target's bank Fake <u>email</u> to get personal details  <b>Pharming</b> <b>One</b> from: is installing malicious code on a pc or server to redirect to fake websites redirecting users to websites which look authentic to get personal details  <b>Spam</b> (is the sending/receiving of) unsolicited/junk emails	<b>1</b>          <b>1</b>  <b>1</b>
<b>21 (a)</b>	<b>Two</b> from: Unlikely to be lost (if addressed correctly) Faster to arrive Quicker/easier to send the same message to several people You don't have to leave the office to send a letter	<b>2</b>
<b>(b)</b>	<b>Two</b> from: Very large documents can be sent/emails often have a limit to the size of attachments Legal documents can be sent/email signatures are not legally binding Special delivery ensures delivery/If undelivered can be tracked/if lost can claim compensation Might not have the software to open attachments Recipient may not have/doesn't need email address/access to computers/internet	<b>2</b>