



**SECTION A**

**Answer ALL questions.**

**For each question, choose an answer A, B, C or D and put a cross in the box. Mark only one answer for each question. If you change your mind, put a line through the box and then mark your new answer with a cross.**

**eg:** Mark the box like this:

<input type="checkbox"/> A
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>This shows your answer</i>
<input type="checkbox"/> D

If you change your mind, mark the boxes like this:

<input checked="" type="checkbox"/> A <i>This shows your final answer</i>
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>First answer</i>
<input type="checkbox"/> D

A school has set up a system to monitor the temperature in a tank where pet lizards are kept.

The temperature is monitored constantly. Adjustments are made to keep the temperature between set limits.

Use this information to answer questions 1, 2, and 3.

1. The temperature is detected using a thermistor. A thermistor is a type of

- A switch
- B sensor
- C actuator
- D processor

**(Total 1 mark)**

**Q1**

2. What is the term used to describe variables which continually change, such as temperature?

- A discrete
- B digital
- C averaging
- D analogue

**(Total 1 mark)**

**Q2**

3. The use of output information to affect future inputs to a system is called

- A backup
- B feedback
- C actuator
- D operator

**(Total 1 mark)**

**Q3**



<p>4. The resolution of the screen can be defined by</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> A the size of the monitor</li> <li><input type="checkbox"/> B the speed of the processor</li> <li><input type="checkbox"/> C the amount of RAM</li> <li><input type="checkbox"/> D the number of pixels in the display</li> </ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p>Leave blank</p> <p><b>Q4</b></p> <input style="width: 20px; height: 20px;" type="text"/>								
<p>5. A school cafeteria wants to find out the amount of time that pupils have to queue to buy lunch. They use a computer model to help this investigation.</p> <p>Which <b>two</b> inputs are required?</p> <ol style="list-style-type: none"> <li>1. the number of pupils using the cafeteria</li> <li>2. the average amount spent by pupils</li> <li>3. the number of cashiers</li> <li>4. the average time spent waiting in the queue</li> </ol> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 20%;"><input type="checkbox"/> A</td> <td>1 and 2</td> </tr> <tr> <td><input type="checkbox"/> B</td> <td>3 and 4</td> </tr> <tr> <td><input type="checkbox"/> C</td> <td>1 and 3</td> </tr> <tr> <td><input type="checkbox"/> D</td> <td>2 and 4</td> </tr> </table> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<input type="checkbox"/> A	1 and 2	<input type="checkbox"/> B	3 and 4	<input type="checkbox"/> C	1 and 3	<input type="checkbox"/> D	2 and 4	<p><b>Q5</b></p> <input style="width: 20px; height: 20px;" type="text"/>
<input type="checkbox"/> A	1 and 2								
<input type="checkbox"/> B	3 and 4								
<input type="checkbox"/> C	1 and 3								
<input type="checkbox"/> D	2 and 4								



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The table shows some members of a community centre. Anyone under twenty years old can apply for junior membership at a lower rate.

Use the information given to answer questions 6, 7 and 8.

Member Number	Surname	Forename	Date of Birth	Member Type	Paid?
07135	Paine	Joe	12/10/89	Junior	Y
17171	Smithson	Sandie	06/07/74	Full	Y
16104	Jaques	Francis	02/11/85	Full	N
12027	Chan	Christie	16/06/92	Junior	N
07073	Giorven	Sam	03/04/77	Full	Y

6. The community centre wants to find junior members who have **not** paid their membership fees. Which query would be used?

- A Member Type is not Full and Paid is N
- B Member Type is Junior and Paid is Y
- C Member Type is Junior or Paid is Y
- D Member Type is Junior and Paid is not N

(Total 1 mark)

Q6

7. Which of these checks could **not** be used to validate the surname field?

- A type check
- B range check
- C length check
- D presence check

(Total 1 mark)

Q7

8. A database file in which tables are linked together is

- A relative
- B referential
- C relational
- D recorded

(Total 1 mark)

Q8

9. Flight simulators are used to simulate the experience of being a pilot.

Which of these is **not** a true statement?

- A the cockpit can be equipped to simulate the movement of a real plane
- B the images shown are displayed in real time
- C the system makes use of feedback loops
- D the system can take account of all possible situations

(Total 1 mark)

Q9



<p><b>10.</b> A program written to automate a sequence of keystrokes is</p> <p><input type="checkbox"/> A a template</p> <p><input type="checkbox"/> B a sub-routine</p> <p><input type="checkbox"/> C a macro</p> <p><input type="checkbox"/> D a merge</p> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p>Leave blank</p> <p style="text-align: center;">Q10</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<p><b>11.</b> IAS stands for</p> <p><input type="checkbox"/> A Internal Access Store</p> <p><input type="checkbox"/> B Immediate Access Store</p> <p><input type="checkbox"/> C Immediate Action Store</p> <p><input type="checkbox"/> D Immediate Action System</p> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p style="text-align: center;">Q11</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<p><b>12.</b> A printer runs out of paper when printing a document. The error message ‘Printer is out of paper’ is displayed.</p> <p>The part of the computer system that generates this message is</p> <p><input type="checkbox"/> A the CPU</p> <p><input type="checkbox"/> B the printer driver</p> <p><input type="checkbox"/> C the operating system</p> <p><input type="checkbox"/> D the word processing software</p> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p style="text-align: center;">Q12</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<p><b>13.</b> The type of processing where changes are immediately acted upon, is called</p> <p><input type="checkbox"/> A real-time</p> <p><input type="checkbox"/> B batch</p> <p><input type="checkbox"/> C interactive</p> <p><input type="checkbox"/> D multitasking</p> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p style="text-align: center;">Q13</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<p><b>14.</b> The speed at which a computer processor carries out instructions is measured in</p> <p><input type="checkbox"/> A gigabytes (Gb)</p> <p><input type="checkbox"/> B megahertz (MHz)</p> <p><input type="checkbox"/> C dots per inch (dpi)</p> <p><input type="checkbox"/> D megabytes (Mb)</p> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<p style="text-align: center;">Q14</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>





<p>15. Which one of these is <b>not</b> a function of the operating system?</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A performing arithmetical operations</li><li><input type="checkbox"/> B managing the transfer of data between the computer memory and backing storage</li><li><input type="checkbox"/> C allocating memory space to programs and data</li><li><input type="checkbox"/> D allowing communication between software and hardware</li></ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	Leave blank  <b>Q15</b> <input type="text"/>
<p>16. A cell reference remains fixed when a formula is copied down a column of a spreadsheet. This is called</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A relative cell referencing</li><li><input type="checkbox"/> B replication</li><li><input type="checkbox"/> C absolute cell referencing</li><li><input type="checkbox"/> D relative copying</li></ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<b>Q16</b> <input type="text"/>
<p>17. A structure diagram is created using a</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A top down approach</li><li><input type="checkbox"/> B horizontal method</li><li><input type="checkbox"/> C systematic approach</li><li><input type="checkbox"/> D holistic method</li></ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<b>Q17</b> <input type="text"/>
<p>18. The main advantage of using web based e-mail rather than client based e-mail is</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A it allows you to send to multiple recipients</li><li><input type="checkbox"/> B it allows attachments to be sent</li><li><input type="checkbox"/> C it is more secure</li><li><input type="checkbox"/> D it can be accessed from any computer connected to the internet</li></ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<b>Q18</b> <input type="text"/>
<p>19. A protocol is</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A the language used to write web pages</li><li><input type="checkbox"/> B the speed at which data is transferred on the Internet</li><li><input type="checkbox"/> C the rules that allow the transfer of data between computers on a network</li><li><input type="checkbox"/> D the abbreviations used in e-mail messages</li></ul> <p style="text-align: right;"><b>(Total 1 mark)</b></p>	<b>Q19</b> <input type="text"/>



20. Which one of these is **not** an advantage of using vector graphics rather than bit-mapped graphics?

- A images can be embedded in most documents
- B rescaling produces smooth images
- C file sizes are smaller
- D images can be resized without any loss of clarity

(Total 1 mark)

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Q20

**TOTAL FOR SECTION A: 20 MARKS**



**SECTION B**

**Case Study Questions.**  
**Attempt ALL questions using the space provided.**

1. Nevio's holds information about its staff on a database in the STAFF\_FILE. Part of the file is shown here.

STAFF-ID	Surname	Forename	Date of Birth	Job Title
85SDI	DiGorgio	Stephano	10/06/75	Head Chef
96KSA	Sangha	Kulbir	15/12/69	Waiter
95SDA	Davison	Sue	12/02/63	Bar Manager
99SHI	Hills	Stacey	02/08/49	Waitress
05PJO	Johnson	Peter	29/06/79	Office Assistant
99KGI	Giodarno	Katrina	22/11/83	Sous Chef
83PNO	Notrianni	Paulo	12/07/63	Waiter

- (a) The STAFF-ID has been encoded.

Describe what is meant by 'encoded'.

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(2)

- (b) Nevio wants to produce a report showing **only** the Forename, Surname and Date of Birth for waiters and waitresses.

Write down the instructions to do this.

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(4)





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(c) Write down the instructions for producing a list of staff born in 1963 or later.

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(2)

(d) Validation rules have been set on Date of Birth.

Test data must be created to ensure that the rules work.

Give **one** example of test data for

Extreme data .....

Invalid data .....

Typical data .....

(3)

(e) The Data Protection Act imposes restrictions on companies such as Nevio's that hold information about individuals.

Two of the principles of the Act state that:

- data must be processed fairly and lawfully
- data must be kept secure

Give **two** other principles that Nevio's must follow.

1 .....

.....

2 .....

.....

(2)

QB1

(Total 13 marks)



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2. Appropriate hardware and software have been bought to allow menus to be created in-house.

(a) Menus are produced using a template within desktop publishing (DTP) software.

(i) Give **three** other features of DTP software that make it appropriate for producing menus.

1 .....

.....

2 .....

.....

3 .....

.....

**(3)**

(ii) Give **three** reasons for using a template.

1 .....

.....

2 .....

.....

3 .....

.....

**(3)**



Leave  
blank

- (b) Photographs are imported into pre-designed cards to give to customers as mementos of special events, such as birthdays and other anniversaries.

The pre-designed cards are saved as template files.  
The photographs are downloaded onto the computer and saved as files.

Describe the process of including the photograph in the card.

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(3)

**(Quality of Written Communication: 3 marks)**

- (c) The information relating to customers is stored in a CUSTOMER\_FILE. Every year a personalised Christmas card is sent to all customers in the file.

Describe the process of personalising cards ready to send to the customers.

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QB2

(6)

**(Total 18 marks)**

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3. The main office currently has one computer connected to the Internet. This is used to receive customer information e-mailed from restaurants at the end of each day.

(a) (i) Give the name for the method of changing data according to a set of rules so that no one else can read it.

.....  
(1)

(ii) Name the type of software needed to enable the file to be read when received by the office.

.....  
(1)

(b) Nevio's is planning to introduce a website giving information about the chain of restaurants and the speciality dishes on offer.

The website should be easy to use.

Give **three** features that should be included. For each feature explain how it makes the website easy to use.

Feature 1 .....

Explanation .....

.....

.....

Feature 2 .....

Explanation .....

.....

.....

Feature 3 .....

Explanation .....

.....

.....  
(6)



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(c) Nevio's is considering networking the computers so that resources may be shared.

The need for increased security is one of the disadvantages of networked ICT systems.

(i) Give **three** other disadvantages.

1 .....

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2 .....

.....

3 .....

.....

(3)

(ii) One way of minimising **internal** security issues is to set usernames and passwords.

State what else can be done during this process to enhance security.

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(1)

QB3

(Total 12 marks)

**TOTAL FOR SECTION B: 43 MARKS**



SECTION C

Attempt ALL questions using the space provided.

1. Greenriggs is a small garden centre. It sells a range of plants and garden equipment.

(a) Customers can pay for goods with a credit card. Some data is already stored on the credit card.

(i) State where data can be stored on the credit card.

1 .....

2 .....

(2)

(ii) Give **one** piece of data that **must** be stored on the card.

.....

(1)

(b) Customers can pay by cheque.

At the end of each day the cheques are sent to the bank for processing.

(i) Name the device that is used to input data from the cheques.

.....

(1)

(ii) This device inputs data very quickly.

State **two** other advantages of this type of data capture.

1 .....

.....

2 .....

.....

(2)

(iii) State **one** disadvantage of this type of data capture.

.....

.....

(1)



Leave  
blank

(iv) Batch processing will be used to process the cheques.

State what is meant by batch processing. Give **one** advantage and disadvantage of using batch processing.

Batch processing .....

.....

Advantage .....

.....

Disadvantage .....

.....

**(3)**

(v) Describe **two** other methods of processing. For each give **one** example of its use.

Method 1 .....

.....

.....

Example of use .....

Method 2 .....

.....

.....

Example of use .....

**(6)**

**(Quality of Written Communication: 3 marks)**

QC1

**(Total 19 marks)**



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2. Pryde Hotels is a large chain of hotels. It has a website which gives information about the hotels. Pryde Hotels would like customers to be able to book rooms in a particular hotel on-line.

(a) Part of the screen form has been designed.

Finish the design of the form.

Make sure your screen form is easy to use and includes all important information.

Surname																				
Forename																				
Address																				

(8)

(b) Give **two** advantages to the company of customers being able to book rooms on-line.

1 .....

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2 .....

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(2)

QC2

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(Total 10 marks)



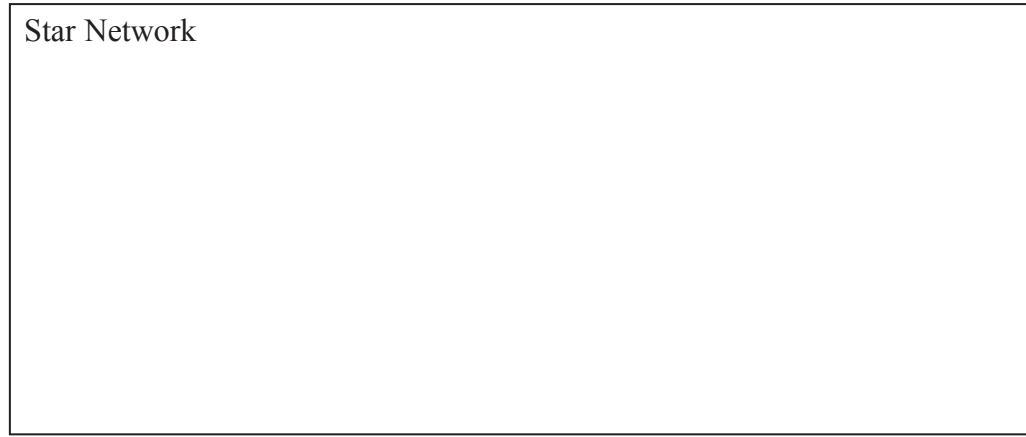


Leave  
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3. Network topology describes the way computers are connected together to form a network.

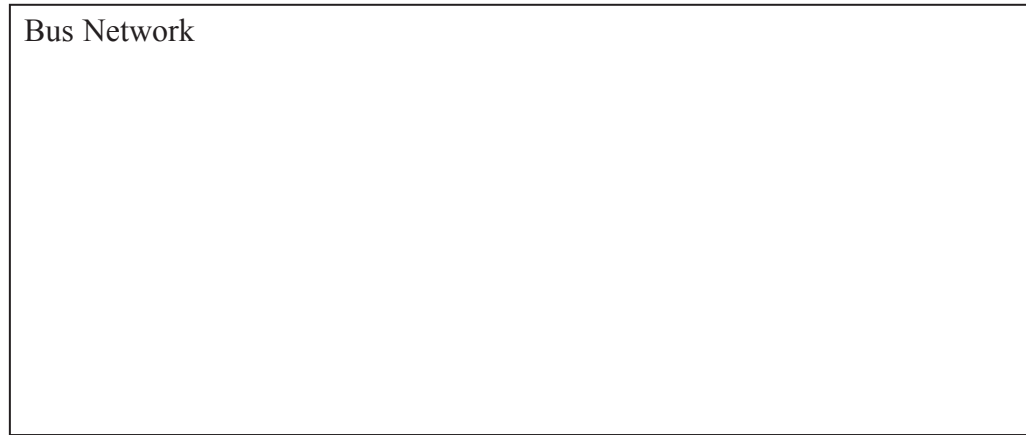
(a) Draw and label the network topology for

(i) Star Network



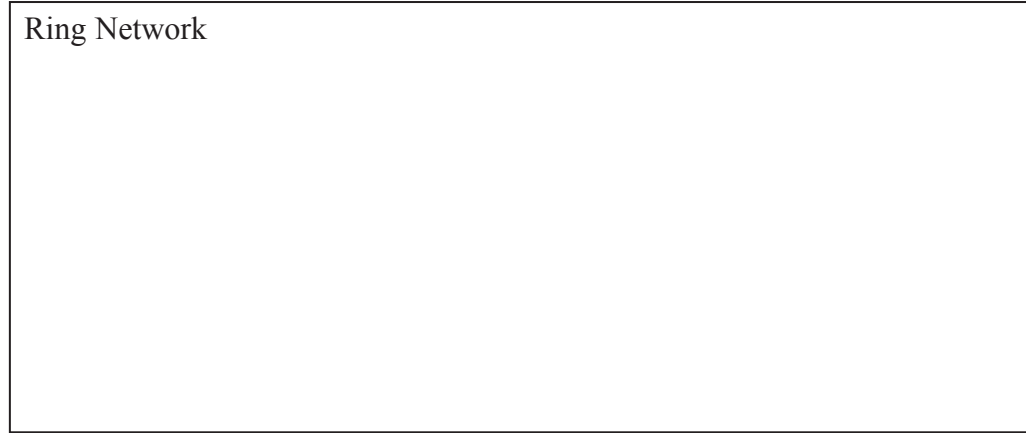
(2)

(ii) Bus Network



(2)

(iii) Ring Network



(2)



Leave blank

(b) For each topology give **one** advantage and **one** disadvantage.

Star

Advantage .....

.....

Disadvantage .....

.....

Bus

Advantage .....

.....

Disadvantage .....

.....

Ring

Advantage .....

.....

Disadvantage .....

.....

(6)

(c) Each workstation needs an additional piece of hardware that is not required in a stand-alone computer.

Name this additional piece of hardware.

.....

(1)

QC3

(Total 13 marks)



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4. George Davenport runs a small company that rents rooms to students. His office has two stand-alone computers that are used by staff for general office work.

(a) George wants to make sure that data is kept safe and secure. The staff have usernames and passwords to gain access to the computers.

(i) Give **two** other software methods that George can use to protect the data.

1 .....

.....

2 .....

.....

(2)

(ii) Give **two** physical methods that George can use to protect the data.

1 .....

.....

2 .....

.....

(2)

(b) George knows that there are potential health risks for the staff who use computers frequently. He has provided staff with suitable seating to minimise back problems.

Identify **two** other potential health risks. State **one** way each can be minimised.

Risk 1 .....

Minimised by .....

.....

Risk 2 .....

Minimised by .....

.....

(4)

QC4

(Total 8 marks)



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5. Sharon Briggs runs a small manufacturing company producing parts for bicycles. Over the last two years the company has been very successful. The number of employees has risen from twenty to fifty full and part-time workers.

Sharon has been using a computerised system for payroll calculations for a number of years. However, the system is struggling to cope with the increased workload.

Sharon has decided to employ ICT specialists to help develop a new computer system. She realises that it will only be effective if the staff feel involved in the development of the new system.

Describe the stages that the ICT specialists should follow in developing the new system. State how the staff can be involved in each stage.

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