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Answer ALL questions

1. A company uses a computer to hold details of customers and their orders. The data used must be checked.

The table shows a list of validation and verification tests. Put a tick (✓) in the correct column to show if a test is a validation or a verification. The first one has been done for you.

| Test | Validation | Verification |
|----------------|------------|--------------|
| Grammar check | | ✓ |
| Range check | | |
| Presence check | | |
| Proof reading | | |
| Format check | | |
| Double entry | | |
| Spell check | | |

Q1

(Total 6 marks)



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2. A company is to set up a website to sell its range of products.

(a) People might find the site by using a search engine. Describe what a search engine is.

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

(2)

(b) Give **two** benefits to the company of selling in this way.

Benefit 1

.....

Benefit 2

.....

(2)

(c) List **four** navigation aids the company could use on the website.

1

2

3

4

(4)

(d) State **two** ways in which the company could test that the website works correctly.

Test 1

Test 2

(2)

(Total 10 marks)

Q2

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



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3. A company is responsible for the health and safety of its employees. A data entry clerk spends all day entering data at a workstation.

List **four** health problems associated with this task and state how each could be prevented.

Problem 1

Prevented by

.....

Problem 2

Prevented by

.....

Problem 3

Prevented by

.....

Problem 4

Prevented by

.....

Q3

(Total 8 marks)



4. A riding school has a database that stores details of students and the times of their riding lessons. Extracts from the student table and the lesson table are shown.

Student table:

| Student | | | | | |
|------------|--------------------|----------------|-----------|----------|-----|
| Student ID | Name | Address1 | Address2 | Address3 | Age |
| 004 | Laura Holden | 29 Long Street | Elmsworth | EL8 9PG | 15 |
| 005 | Loo Jocelyn | 12 High Grove | Elmsworth | EL8 6BN | 11 |
| 006 | Stylianous Stelios | 3 Cedar Road | Oakton | OA7 7VE | 16 |

Lesson table:

| Lesson | | | |
|------------|----------------|------------|-------|
| Student ID | Lesson | Date | Time |
| 004 | Horse Grooming | 18/03/2010 | 09:30 |
| 005 | Exercise | 18/03/2010 | 10:00 |
| 006 | Trotting | 18/03/2010 | 10:00 |

- (a) Identify the key field in the Student table.

Key field (1)

- (b) Give the name of the field that links the two tables.

..... (1)

- (c) The database is searched to find the students who have a lesson at 10:00.

- (i) State which table you would use.

..... (1)

- (ii) State which **two** fields you **must** use.

.....
 (2)

Results of the search are used to make a report showing which students have lessons at 10:00.

- (iii) State the additional field you would use to make the report more useful.

..... (1)

(Total 6 marks)

Q4



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| | |
|---|---|
| <p>5. ICT information systems in any organisation need to be protected from deliberate or accidental misuse.</p> <p>An example of misuse is the unauthorised deletion of files and documents by staff.</p> <p>Give four other examples of misuse. In each case state how the misuse could be prevented.</p> <p>Misuse 1</p> <p>Prevention</p> <p>.....</p> <p>Misuse 2</p> <p>Prevention</p> <p>.....</p> <p>Misuse 3</p> <p>Prevention</p> <p>.....</p> <p>Misuse 4</p> <p>Prevention</p> <p>.....</p> <p style="text-align: right;">(Total 8 marks)</p> | <p>Leave blank</p> <p>Q5</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div> |
| | |



N 3 7 8 0 3 A 0 7 2 0



6. A weather station at the North Pole records the temperature and light level using data logging.

(a) List **three** benefits of using data logging for this purpose.

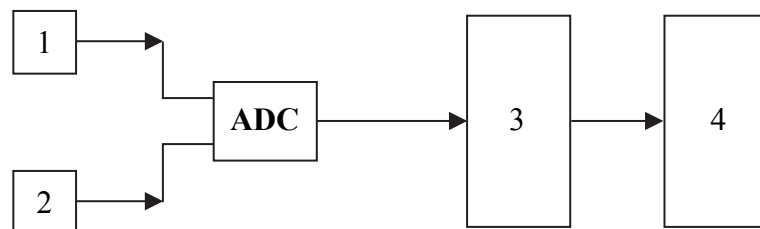
Benefit 1

Benefit 2

Benefit 3

(3)

The diagram shows the components of the data logging system.



(b) Identify the components of the data logging system.

Box 1

Box 2

Box 3

Box 4

(4)

(c) Explain the purpose of the box ADC.

.....

.....

.....

(2)





| | | | |
|--|---|--|--|
| <p>(d) The data collected is transferred to a science laboratory in London once a day. Explain how the data could be transferred.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">(3)</p> <p style="text-align: right;">(Total 12 marks)</p> | <p>Leave blank</p> <p>Q6</p> <table border="1"><tr><td></td><td></td></tr></table> | | |
| | | | |
| | | | |



N 3 7 8 0 3 A 0 9 2 0



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7. A doctor's patient record system has been computerised. A backup system for the records is essential.

(a) Give **two** reasons why a backup system is essential.

Reason 1

.....

Reason 2

.....

(2)

(b) Describe **three** factors that should be considered in the design of a backup system.

Factor 1

.....

Factor 2

.....

Factor 3

.....

(6)

Q7

(Total 8 marks)



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8. (a) All computers use a Central Processing Unit (CPU). The processor interprets and carries out the basic instructions that operate a computer.

State the function of the following parts of the CPU.

- (i) Control Unit
..... (1)
- (ii) Arithmetic and Logic Unit
..... (1)
- (iii) Immediate Access Store
..... (1)

- (b) A computer also requires an operating system.

- (i) State **three** tasks that are performed by an operating system.

Task 1
Task 2
Task 3 (3)

Some operating systems have a Graphical User Interface (GUI).

- (ii) Name **one** other type of user interface.

..... (1)

- (iii) Give **two** benefits of a GUI over the user interface that you identified in (ii).

Benefit 1
Benefit 2 (2)

(Total 9 marks)

Q8



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9. A small company that develops games software employs several programmers and administrative staff. The company has installed a Local Area Network (LAN).

The programmers sometimes use stand-alone computers instead of the networked ones.

(a) Explain **one** benefit to the programmers of using stand-alone computers.

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

(b) Describe **two** benefits to the company of using the LAN.

Benefit 1
.....
Benefit 2
.....
(4)

A laptop is to be connected to the LAN using a wireless connection.

(c) (i) State **two** items of hardware required to connect the laptop to the LAN.

Item 1
Item 2
(2)

(ii) State **one** item of software required for this purpose.

.....
(1)

(iii) Explain the function of this software.

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

(Total 11 marks)

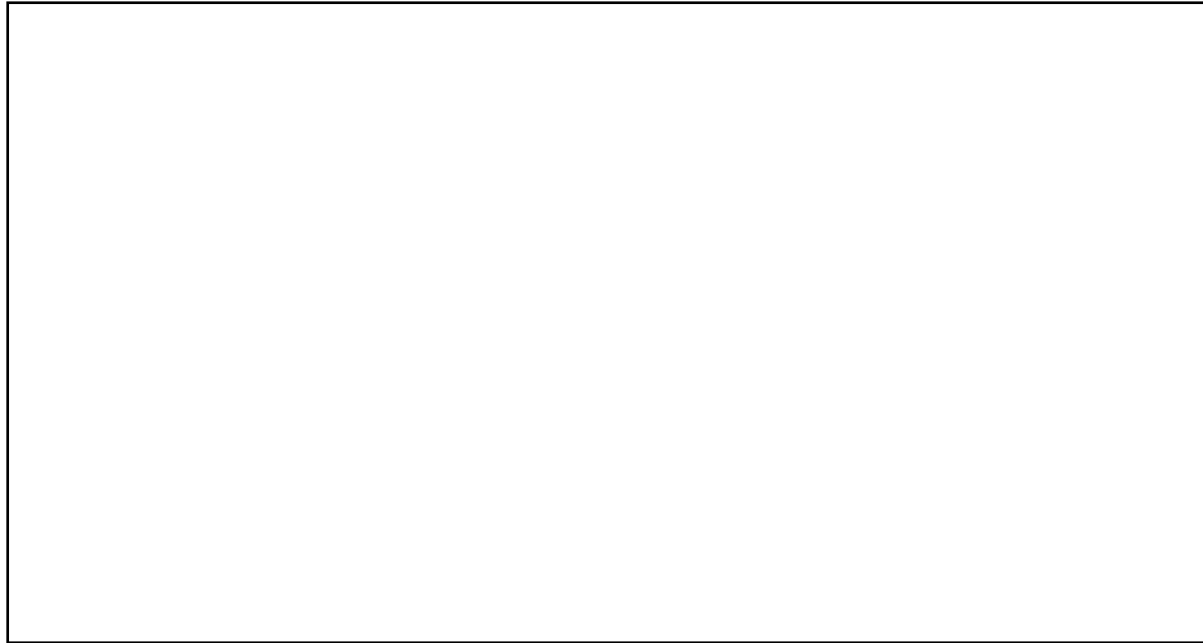
Q9



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10. A bus is one type of network topology.

- (a) (i) In the box provided, draw and label a diagram of a bus network that uses cables. Label the server and use arrows to show the direction of the dataflow.



(3)

- (ii) Explain what happens when a cable is broken in this network.

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

(2)

- (b) (i) Name **one** other type of network topology that uses cables.

.....

(1)

- (ii) Explain what happens if a cable is broken in this other type of network.

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

(2)

Q10

(Total 8 marks)



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11. The development of the Internet has changed the lives of people in many ways.

Using the Internet, people can find information without leaving their home.

(a) Describe **two** ways of finding information on the Internet.

1

2

(4)

(b) Information found on the Internet is not always accurate.

(i) Give **one** example to show why information found on the Internet is not always accurate.

.....

(1)

(ii) Give **two** suitable precautions people can take to help ensure the accuracy of the information they use from the Internet.

Precaution 1

.....

Precaution 2

.....

(2)

Q11

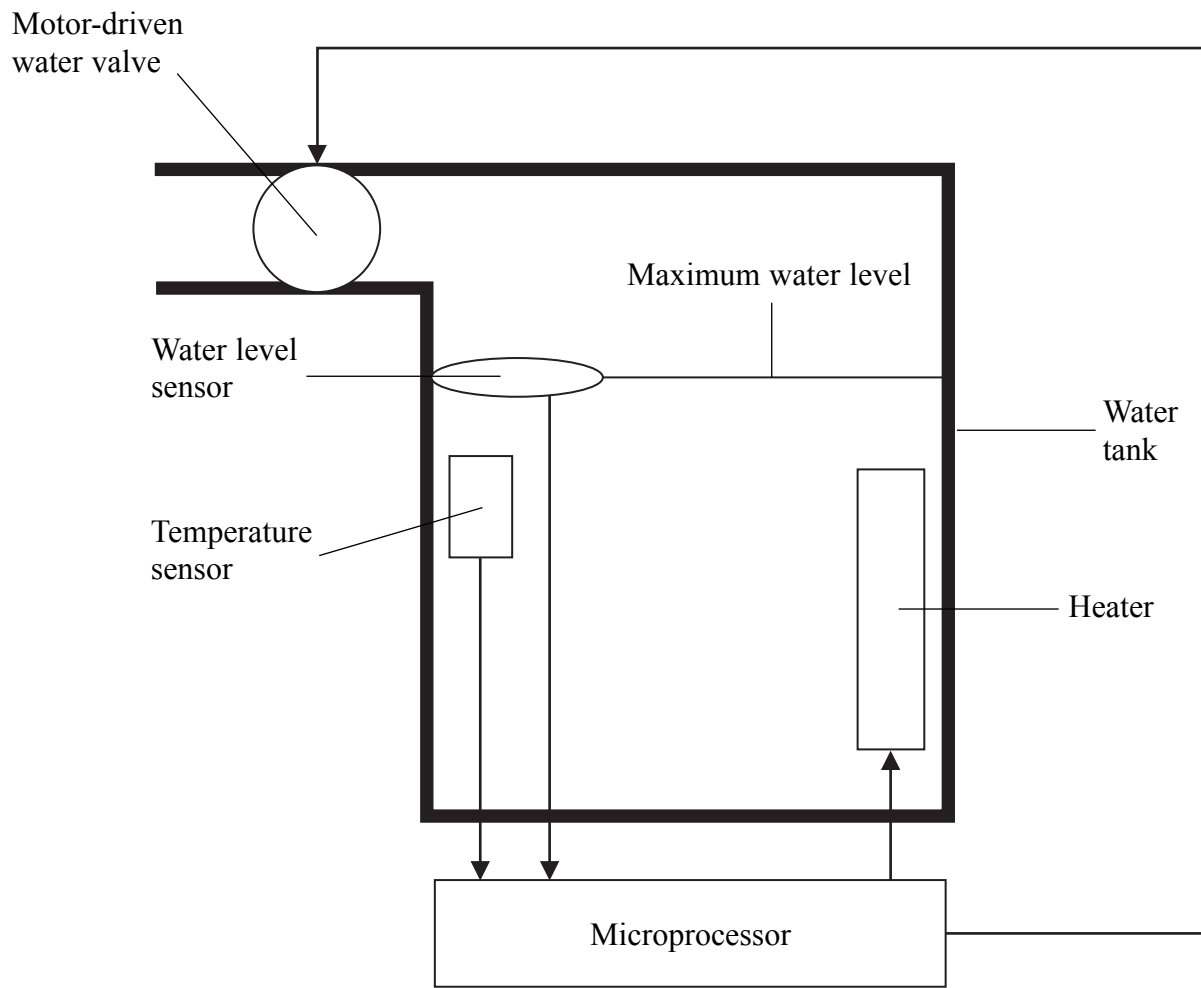
(Total 7 marks)

15

Turn over



12. Here is an example of process control. In a chemical process, a container is filled with water to the maximum level, shown in the diagram. This container is empty at the start of the process.



(a) Write a set of instructions in pseudo code or structured English to fill the container with water up to the maximum level.

.....

.....

.....

.....

.....

.....

(3)



When the maximum level is reached, the water is then heated to a temperature of 70 °C.

(b) Explain how feedback is used to ensure that the water temperature remains close to 70 °C.

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.....

(4)

Q12

(Total 7 marks)

TOTAL FOR PAPER: 100 MARKS

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