READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO NOT WRITE IN ANY BARCODES.

No marks will be awarded for using brand names of software packages or hardware.

Answer all questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
1 Name the output devices A, B, C and D using the words from the list.

A

B

C

D

CRT monitor
Dot matrix printer
Inkjet printer
Motor
Multimedia projector
Plotter
Speakers
Trackerball

A .......................................................... B .........................................................
C .......................................................... D .........................................................

2 Ring two items which are storage media.

Buzzer
DVD RAM
Keyboard
Mouse
Memory stick
Sensor

[2]

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

<table>
<thead>
<tr>
<th>Statement</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring software is used to write letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP software is used to create magazines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDAs cannot be used unless plugged in to an electricity socket</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database software is used to create slide shows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A working knowledge of HTML is helpful when creating web pages</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[5]
4 Complete each sentence below using one item from the list.

A bar code reader  A buzzer  A dot matrix printer
A graph plotter  A graphics tablet  An inkjet printer
A pressure sensor  OCR  A trackerball
A webcam

(a) ......................... is used to input a hand drawn image to the computer.
(b) ......................... is used to input data to a microprocessor controlled weighing scale.
(c) ......................... is an input device used by people with limited motor skills.
(d) ......................... is an output device used to produce large hard copies of car designs.
(e) ......................... is an output device used in microwave ovens.

5 Tick three appropriate features of spreadsheet software which make it suitable for creating and using computer models.

<table>
<thead>
<tr>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>What ifs</td>
</tr>
<tr>
<td>Queries</td>
</tr>
<tr>
<td>Automatic recalculation</td>
</tr>
<tr>
<td>Internet browsing</td>
</tr>
<tr>
<td>Animation</td>
</tr>
<tr>
<td>Data and formulae replication</td>
</tr>
</tbody>
</table>
A student wishes to use floor turtle to draw this shape:

Name and explain the meaning of three instructions that the turtle graphics software would need to contain in order to draw the shape.

Instruction 1  .................................................................
Meaning  .............................................................................

Instruction 2  .................................................................
Meaning  .............................................................................

Instruction 3  .................................................................
Meaning  .............................................................................

The Regionalisa Bank sends messages to its customers. Sometimes the messages are sent by fax and sometimes by email. Tick whether the following statements are TRUE or FALSE.

<table>
<thead>
<tr>
<th>Statement</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A faxed message is more private</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An emailed message arrives with the customer more quickly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A faxed document can be used for legal purposes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An email attachment can be edited electronically</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8 Describe what real time processing is, using a microprocessor-controlled central heating system as an example.

9 Car mechanics use expert systems to diagnose car faults.

(a) Describe how an expert system diagnoses these faults.

(b) Give two other uses of expert systems.

(i) .................................................................

(ii) ................................................................. [2]
The manager of a supermarket uses a database to store data about the food he sells. This is part of the database.

<table>
<thead>
<tr>
<th>Food type</th>
<th>Number in stock</th>
<th>Re-order (Y/N)</th>
<th>Last order received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato flakes</td>
<td>123</td>
<td>N</td>
<td>23/10/10</td>
</tr>
<tr>
<td>Chocolate bar</td>
<td>158</td>
<td>N</td>
<td>25/10/10</td>
</tr>
<tr>
<td>Beefburgers</td>
<td>135</td>
<td>N</td>
<td>24/10/10</td>
</tr>
<tr>
<td>Gravy</td>
<td>89</td>
<td>Y</td>
<td>17/10/10</td>
</tr>
</tbody>
</table>

For each of the following fields describe an appropriate validation check. You must describe three different validation checks.

(a) Number in stock
(b) Re-order (Y/N)
(c) Last order received

Draw four lines on the diagram to match the use to its most appropriate input method.

<table>
<thead>
<tr>
<th>Use</th>
<th>Input method</th>
</tr>
</thead>
<tbody>
<tr>
<td>To input text from a printed document</td>
<td>Bar code reader</td>
</tr>
<tr>
<td>To input data from a bank cheque</td>
<td>Chip reader</td>
</tr>
<tr>
<td>To input data from a bank card</td>
<td>MICR</td>
</tr>
<tr>
<td>To input data about a product at a POS</td>
<td>OCR</td>
</tr>
</tbody>
</table>
12 The manager of a company wants to improve the security of the computer network. She has decided to use authentication techniques so that employees can identify themselves to the system. Name three authentication techniques and describe how each technique would help keep the data more secure.

Technique 1

Technique 2

Technique 3

[6]

13 The prolonged use of computers can lead to health and safety problems.

(a) List two health problems that may be caused by the prolonged use of computers.

1

2

[2]

(b) List two safety problems that may be caused by the use of computers.

1

2

[2]
14. A group of international schools wish to hold a video conference instead of a face to face meeting.

Discuss the advantages and disadvantages to a school of using video conferences.

Advantage 1

Advantage 2

Advantage 3

Disadvantage 1

Disadvantage 2

Disadvantage 3

[6]

15. Joseph wants to type in details of new customers into a database. He needs to design an on-screen input form.

Describe four navigation aids that would be part of a well designed on-screen input form.

1

[1]

2

[1]

3

[1]

4

[1]
A company is developing a new computer system. After the new system is developed, it will be implemented.

(a) Name **two** methods of implementation. Give **one** advantage and **one** disadvantage of each.

<table>
<thead>
<tr>
<th>Method</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) After the system is implemented it will be evaluated. Identify **three** activities which would need to be carried out in evaluating the system.

1. 
2. 
3. 

[6] 

[3]
There are many microprocessor-controlled devices in the modern home. Describe the effects of these devices on people's lifestyles.
A computer-controlled greenhouse is used by a school in a country with a cold climate.

(a) Tick **three** sensors which would have to be used in the greenhouse.

<table>
<thead>
<tr>
<th>Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure sensor</td>
</tr>
<tr>
<td>Movement sensor</td>
</tr>
<tr>
<td>Light sensor</td>
</tr>
<tr>
<td>Temperature sensor</td>
</tr>
<tr>
<td>Moisture sensor</td>
</tr>
<tr>
<td>Infra red sensor</td>
</tr>
</tbody>
</table>

(b) Explain why computers are unable to read the data directly from these sensors.

(c) Describe how the microprocessor uses data from the sensors to control the greenhouse.
19 A number of people use methods to defraud online bank customers. Name and describe two of these methods.

1

2

[4]

20 Mobile telephones are used for accessing the internet. Give two advantages and two disadvantages of using a mobile telephone rather than using a PC to access the internet.

Advantage 1

Advantage 2

Disadvantage 1

Disadvantage 2

[4]