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.

Bar code  Plotter  Laser printer  Light pen
Magnetic disc  Monitor  Multimedia Projector  Pen drive

A ........................................ B ........................................
C ........................................ D ........................................ [4]

2 Ring two items which are input devices.

Blu ray disc  Graphics tablet  Inkjet printer
Motor  Optical mark reader  Speaker [2]
3 Tick **TRUE** or **FALSE** next to each of these statements.

<table>
<thead>
<tr>
<th></th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A magnetic stripe reader is an example of hardware</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A memory stick is an example of software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A word processor is a form of operating system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A CD has a greater storage capacity than a DVD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- **Storage Device**
- **Use**
  - Fixed hard disc: Making backups of a file server
  - Flash memory card: Transferring a file from one computer to another
  - Magnetic tape: Storing software sold by a company
  - Pen drive: Storing data which needs to be accessed quickly
  - DVD ROM: Storing photographs in a digital camera

5 A database is to be created about the personal details of students at a school. Select the most suitable data type for each field using one word from this list.

<table>
<thead>
<tr>
<th>Boolean</th>
<th>Text</th>
<th>Integer</th>
<th>Date</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Birthday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Home phone number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Number of brothers and sisters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[4]
6 Tick **TRUE** or **FALSE** for the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM is volatile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAM is used to store the startup instructions of a computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The data in ROM is easier to change than that in RAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROM is used to store the data the user is currently working on</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[4]

7 A floor turtle can use the following instructions:

<table>
<thead>
<tr>
<th>INSTRUCTION</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORWARD $n$</td>
<td>Move $n$ mm forward</td>
</tr>
<tr>
<td>BACKWARD $n$</td>
<td>Move $n$ mm backward</td>
</tr>
<tr>
<td>LEFT $t$</td>
<td>Turn left $t$ degrees</td>
</tr>
<tr>
<td>RIGHT $t$</td>
<td>Turn right $t$ degrees</td>
</tr>
<tr>
<td>PENUP</td>
<td>Lift the pen</td>
</tr>
<tr>
<td>PENDOWN</td>
<td>Lower the pen</td>
</tr>
</tbody>
</table>

60 50 40 60

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

PEN DOWN
FORWARD 60
RIGHT 90

Start

Finish

[5]
8 Tick **three** items of hardware which are used to network computers together.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hub</td>
<td>✓</td>
</tr>
<tr>
<td>Printer</td>
<td></td>
</tr>
<tr>
<td>Scanner</td>
<td></td>
</tr>
<tr>
<td>Switch</td>
<td></td>
</tr>
<tr>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>Monitor</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying for goods at an EFTPOS terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Booking a holiday using a computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producing credit card bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing cheques</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A school uses a computer-controlled greenhouse to grow plants.

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

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

(b) Describe the computer processing that is required to maintain the correct growing conditions.

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........................................................................................................................................ [5]

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

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........................................................................................................................................
........................................................................................................................................ [3]

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A school has a computer system for monitoring student records. It has a file for storing personal details and a file for storing test results. Here is part of the test results file.

<table>
<thead>
<tr>
<th>Unique ID number</th>
<th>Name</th>
<th>History result</th>
<th>Geography result</th>
<th>Maths result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1022</td>
<td>Me Won Li</td>
<td>55</td>
<td>46</td>
<td>65</td>
</tr>
<tr>
<td>1026</td>
<td>John Brown</td>
<td>76</td>
<td>49</td>
<td>47</td>
</tr>
<tr>
<td>1029</td>
<td>Javir Sidhu</td>
<td>54</td>
<td>59</td>
<td>23</td>
</tr>
</tbody>
</table>

(a) How many records are shown in the file above? 

(b) How many fields are shown? 

(c) Describe how the two files could be combined to form a relational database.

(d) Give two reasons why a relational database system would be used rather than having two flat files.

1

2
12 Alan owns a small company. He wishes to replace the existing computerised system with a new one. He has employed a systems analyst, José, to plan this.

(a) José will collect information about the existing system and design the new system. 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>Defining a field length is part of the design of the file structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen layouts are designed before the system is implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The new system is evaluated before it is designed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The existing system is analysed before the new system is designed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Name and describe three types of test data which are used when testing a system.

1. .............................................................................................................

2. .............................................................................................................

3. .............................................................................................................

(c) After the system has been implemented it will be evaluated. Tick four activities which José will need to carry out as part of the evaluation.

- Produce user documentation
- Design the new system
- Compare the solution with the original task requirements
- Analyse the existing system
- Identify any limitations of the system
- Identify any necessary improvements to the system
- Analyse the users’ responses to the results of testing the system
- Produce technical documentation
(d) Part of José’s job will be to produce both technical and user documentation for the new system. For each type of documentation give **two** reasons why it is needed.

**Technical documentation**

Reason 1

Reason 2

**User documentation**

Reason 1

Reason 2


13 Aftab and his family have three computers in their home. He wants to connect the computers into a network.

(a) Name an item of hardware used to connect the computers to the internet.

(b) Name an item of software used to send messages over the internet.

(c) Name an item of software used to access websites.

(d) Apart from hardware and software, what else would be needed to provide access to the internet?


14 Online banking and ATMs are used by many customers.

(a) Describe how the following three methods are used to make sure that data is secure.

- Encryption

- Passwords

- Biometric data [6]

(b) Give three advantages to the bank of using online banking.

1

2

3 [3]
(c) Give three advantages to the customer of using online banking.

1. ........................................................................................................................................

2. ........................................................................................................................................

3. ........................................................................................................................................

15 Discuss the advantages and disadvantages of video conferencing compared to face to face meetings.

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

........................................................................................................................................ [6]
16 Explain the difference between phishing and pharming.

17 Computers are used to manage data in schools. Name the different methods used to input personal data about students and their attendance and discuss the advantages and disadvantages of these.