INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 1

Candidates answer on the Question Paper.
No Additional Materials are required.

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 input devices A, B, C and D using the words from the list.

A: Bar code reader  B: Chip reader  C: Graphics tablet  D: Laser printer  
Magnetic Stripe Reader  Numeric keypad  Remote control  Trackerball

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

2 Ring two network devices.

Bridge  DVD R  Light pen  
Magnetic tape  Printer  Switch

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>Withdrawing money from an ATM is an example of batch processing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The processing of bank cheques is an example of batch processing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Booking a theatre ticket is an example of online processing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producing utility bills is an example of online processing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4 Complete each sentence below using one item from the list.

a bar code       a chip       a dot matrix printer
a DVD RW         an inference engine an inkjet printer

(a) The **most suitable** storage medium for storing data on a bank card is .................................................................

(b) The tool which searches for matches in a knowledge base is .................................................................

(c) An optical disc which can have data updated is .................................................................

(d) Multipart stationery is used with .................................................................

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

<table>
<thead>
<tr>
<th>Input device</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar code reader</td>
<td>to enter hard copy images into a computer</td>
</tr>
<tr>
<td>Microphone</td>
<td>creating a piece of text</td>
</tr>
<tr>
<td>Scanner</td>
<td>selecting items from a menu</td>
</tr>
<tr>
<td>Keyboard</td>
<td>inputting data from a food item at a POS</td>
</tr>
<tr>
<td>Mouse</td>
<td>creating a voice over for a presentation</td>
</tr>
</tbody>
</table>

[5]
6 As well as PCs, mobile phones (cellphones) can be used to access the Internet.

(a) Give two advantages of using a PC rather than a mobile phone for this purpose.

1

2

[b] Give two disadvantages of using a PC rather than a mobile phone for this purpose.

1

2

[b] Tick Internet or intranet, next to each statement, as appropriate.

<table>
<thead>
<tr>
<th>Internet</th>
<th>intranet</th>
</tr>
</thead>
<tbody>
<tr>
<td>is a network of computer networks</td>
<td></td>
</tr>
<tr>
<td>exists usually within one organisation</td>
<td></td>
</tr>
<tr>
<td>anybody can access it</td>
<td></td>
</tr>
<tr>
<td>can be expanded to become an extranet</td>
<td></td>
</tr>
</tbody>
</table>

4

8 Tick spam or pharming, next to each statement, as appropriate.

<table>
<thead>
<tr>
<th>spam</th>
<th>pharming</th>
</tr>
</thead>
<tbody>
<tr>
<td>is the sending of several emails at once</td>
<td></td>
</tr>
<tr>
<td>requires malicious code to be downloaded</td>
<td></td>
</tr>
<tr>
<td>re-directs the user to a fake website</td>
<td></td>
</tr>
<tr>
<td>is the sending of unsolicited messages</td>
<td></td>
</tr>
</tbody>
</table>

4
9 A student wishes to use a floor turtle to draw this shape:

Name and explain the meaning of four instructions that the turtle graphics software would contain in order to draw the shape. Note: a, b and c are the same length.

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

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

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

Instruction 4 .................................................................
Meaning ........................................................................

[8]

10 Tick whether the following statements are true or false about student records in a database.

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>A file is a collection of related records.</td>
<td></td>
</tr>
<tr>
<td>A field is one item of data such as name or address.</td>
<td></td>
</tr>
<tr>
<td>The same value can occur several times within a key field.</td>
<td></td>
</tr>
<tr>
<td>A record is the complete data about one student.</td>
<td></td>
</tr>
</tbody>
</table>
11  Hospitals often use computers to continuously monitor patients.

(a) Describe the monitoring process.

(b) Give four advantages of using a computer rather than nurses to monitor patients.

1

2

3

4
A shop owner uses a spreadsheet to calculate his profits. This is part of the spreadsheet.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Producer</td>
<td>Food type</td>
<td>Number in stock</td>
<td>Cost Price</td>
<td>Selling Price</td>
<td>Profit</td>
<td>Total profit</td>
</tr>
<tr>
<td>2</td>
<td>Logekks</td>
<td>Potato flakes</td>
<td>168</td>
<td>$1.80</td>
<td>$1.90</td>
<td>$0.10</td>
<td>$16.80</td>
</tr>
<tr>
<td>3</td>
<td>Squarebranch</td>
<td>Chocolate bar</td>
<td>202</td>
<td>$0.75</td>
<td>$0.80</td>
<td>$0.05</td>
<td>$10.10</td>
</tr>
<tr>
<td>4</td>
<td>Roofs</td>
<td>Beefburgers</td>
<td>88</td>
<td>$2.05</td>
<td>$2.25</td>
<td>$0.20</td>
<td>$17.60</td>
</tr>
<tr>
<td>5</td>
<td>Kapats</td>
<td>Gravy</td>
<td>120</td>
<td>$3.20</td>
<td>$3.45</td>
<td>$0.25</td>
<td>$30.00</td>
</tr>
<tr>
<td>6</td>
<td>Startle</td>
<td>Yoghurt cream</td>
<td>122</td>
<td>$1.50</td>
<td>$1.65</td>
<td>$0.15</td>
<td>$18.30</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Total in stock</td>
<td>700</td>
<td>Overall profit</td>
<td></td>
<td></td>
<td></td>
<td>$92.80</td>
</tr>
</tbody>
</table>

(a) Give the cell reference of the cell that contains $3.45.

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

(b) Give the cell reference of a cell that contains a label.

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

(c) How many columns are shown in the spreadsheet?

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

(d) Write down the formula which should go in cell G2.

= .......................................................................................................................... [1]

(e) Formulae similar to that used in cell F2, that is to say = E2 – D2, have been used in cells F3 to F6. These were not typed.

Describe how these were entered.

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
.......................................................................................................................... [2]
(f) Spreadsheets can be used for modelling.

Give **three** reasons why computer models are used rather than the real thing.

1. 

2. 

3. 

[3]

13 Describe the differences between a **CLI** (Command Line Interface) and a **GUI** (Graphical User Interface).

[4]
The head teacher of a school has employed Pierre, a systems analyst, to create a new database system to keep details of all students. Each student will be allocated a unique ten digit reference number.

Pierre has written out some of the questions that the head teacher might ask. He can then analyse these in order to design a database which may answer these questions. Some are:

Which year is Johann Schmidt in? (the school has students in years 7 to 13)
Does Anita Nash have a sibling (brother or sister) in the school?

(a) Complete the data dictionary table below giving the field names which would be used in the database and identifying a validation check for each field.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Validation check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference_number</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td></td>
</tr>
<tr>
<td>First_name</td>
<td>None</td>
</tr>
</tbody>
</table>

(b) Explain the differences between verification and validation giving reasons why both are needed when data is entered into a database.
Floyd has purchased a laptop computer. He wants to use it for Internet banking.

(a) Explain why Floyd would need the following two items.

Browser

ISP

(b) Discuss the advantages and disadvantages to customers of using Internet banking rather than visiting the bank.

...
16  Describe what is meant by a Wiki.

17  There are a number of health and safety risks associated with using computers.

For the three safety risks given below, describe a way in which each can be minimised.

Electrocution

Fire

Tripping
18 There are many microprocessor-controlled devices in the modern home. Describe five effects of these devices on people’s lifestyles.

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

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

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

4. ........................................................................................................................................

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

19 Describe encryption and discuss the benefits and drawbacks of using it to make data secure.

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

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

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