EXAMINATIONS COUNCIL OF ZAMBIA

Examination for General Certificate of Education Ordinary Level

Computer Studies
Paper 1

Monday 14 AUGUST 2017

Candidates answer on the question paper. No additional materials are required.

Time: 2 hours 30 minutes

Instructions to Candidates

1. Write your name, centre number and candidate number in the spaces at the top of this page.

2. There are 13 questions in this paper, 12 in Section A and 1 in Section B. Answer all questions.

3. Write your answers in the spaces on the question paper.

Information For Candidates

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 70.

Cell phones are not allowed in the Examination Room.

For Examiner’s Use

<table>
<thead>
<tr>
<th>Section A</th>
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<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section B</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Total</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

©ECZ/GCE/2017/A4 This question paper consists of 10 printed pages
1  
(a) What is a file?  
........................................................................................................................................... [2]
........................................................................................................................................... [2]

(b) State one disadvantage of using folders.  
........................................................................................................................................... [1]
........................................................................................................................................... [1]

(c) Why does the operating system hide certain folders?  
........................................................................................................................................... [2]
........................................................................................................................................... [2]

(d) Give one advantage of saving files in the same folder.  
........................................................................................................................................... [1]
........................................................................................................................................... [1]

2  
Macros are common in most application software.  

(a) Give one use of macros.  
........................................................................................................................................... [1]
........................................................................................................................................... [1]

(b) Give one draw back of macros.  
........................................................................................................................................... [1]
3  The diagram below shows the link of web pages of a school library website.

(a) State information requested in C.

(b) Which diagram is the home page?

(c) What is the name of the computer that keeps pages of the website?

(d) Give two precautions users should take when using the internet.

Way 1

Way 2

4  (a) River pollution is common in large mining operations. Computer control is often used to effectively deal with this problem.

Name one sensor and the data it collects in this system.

Sensor

Data

(b) Give one reason why data is collected remotely and automatically.

Remote reason

Automatic reason

[Turn over
5 The following is the order in which a short message (SMS) is sent and received on a mobile phone. Write the numbers from 1 to 8 in the right hand column for each stage in the correct order. Stage 1 and 5 have been done for you.

<table>
<thead>
<tr>
<th>Description of Stage</th>
<th>Order of Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message travels to recipient's mobile service storage server</td>
<td>5</td>
</tr>
<tr>
<td>Message sent to sender's mobile mail server</td>
<td></td>
</tr>
<tr>
<td>Message tone rings on receiver's phone</td>
<td></td>
</tr>
<tr>
<td>Sender composes message and presses the send button</td>
<td>1</td>
</tr>
<tr>
<td>Message held in recipient's in box awaiting to be read</td>
<td></td>
</tr>
<tr>
<td>Mobile service provider system examines address</td>
<td></td>
</tr>
<tr>
<td>Message retrieved and sent to recipient's phone</td>
<td></td>
</tr>
<tr>
<td>Mobile service provider system decides how to route message</td>
<td></td>
</tr>
</tbody>
</table>

6 (a) Give one difference between a simulation and virtual reality.

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

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

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

............................................................................................................................ [2]

(b) Give three requirements of a virtual reality system.

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

Requirement 2........................................................................................................ [1]

Requirement 3........................................................................................................ [1]

(c) Give one area of entertainment and one area of training that uses virtual reality.

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

Training.................................................................................................................. [1]
7 Lundu is a television technician who uses an expert system installed on his laptop to trace faults when repairing televisions.

(a) Explain how Lundu will interact with the expert system to help diagnose the fault in a television.

(b) Give one reason why files in the knowledge base need to be updated regularly.

8 A turtle that draws shapes on paper uses the following instructions:

Forward n — moves n cm forward.
Backward n — moves n cm backward.
Turn left t — turns left t degrees
Turn right t — turns right t degrees
Pen up — lift the pen off paper
Pen down — lower the pen onto the paper

Write the set of instructions that makes the turtle to draw the shape shown above in the directions indicated.

Assume that the pen is down at the start.

Write the set of instructions that makes the turtle to draw the shape shown above in the directions indicated.

Assume that the pen is down at the start.
9 (a) Study the following algorithm that is written in pseudocode and convert it to a flow chart.

BEGIN

Prompt user for amount

IF amount is less or equal to 5000 THEN

Calculate interest at 15% of amount

ELSE

Calculate interest at 20% of amount

END IF

Display amount

Display interest

END

(b) What is the purpose of this algorithm?

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

........................................................................................................................................ [1]
10  (a)  State **two** stages in Systems Development Life Cycle (SDLC).

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

Stage 2 ........................................................................................................... [1]

(b) Which stage will the analyst specify what the user wants in the new system?

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

(c) Rather than supply the user documentation on-line, the analyst decides to make a printout:

(i)  Give **one** advantage of doing this.

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

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

(ii) Give **one** disadvantage of doing this.

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

...................................................................................................................... [1]
A database below was set up to show information about the largest ocean ships.

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>YEAR BUILT</th>
<th>GROSS CAPACITY</th>
<th>COUNTRY OF REGISTRATION</th>
<th>COUNTRY OF CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AO</td>
<td>2009</td>
<td>225 383</td>
<td>UK</td>
<td>Finland</td>
</tr>
<tr>
<td>NI</td>
<td>2008</td>
<td>155 408</td>
<td>UK</td>
<td>Finland</td>
</tr>
<tr>
<td>MQ</td>
<td>2004</td>
<td>148 530</td>
<td>Japan</td>
<td>France</td>
</tr>
<tr>
<td>EX</td>
<td>1999</td>
<td>137 308</td>
<td>France</td>
<td>Japan</td>
</tr>
<tr>
<td>OV</td>
<td>1996</td>
<td>108 866</td>
<td>Germany</td>
<td>UK</td>
</tr>
<tr>
<td>DE</td>
<td>1972</td>
<td>77 488</td>
<td>Israel</td>
<td>UK</td>
</tr>
<tr>
<td>RF</td>
<td>1940</td>
<td>79 280</td>
<td>USA</td>
<td>USA</td>
</tr>
</tbody>
</table>

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

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

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

(b) Using ship ID, what would be the output if the following search condition was typed in;
(year built < 2 000) and (country of registration = country of construction)

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

(c) Complete the SQL statement below which locates ship ID from records with Gross capacity > 120 000.

SELECT ................................................. from largest ocean ships table

WHERE ........................................................ [2]

12 (a) The table below shows the type of processing and the application.
Fill in the appropriate application against the processing method.

<table>
<thead>
<tr>
<th>PROCESSING SYSTEM</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online processing</td>
<td></td>
</tr>
<tr>
<td>Batch processing</td>
<td></td>
</tr>
</tbody>
</table>

(b) Define process control.

................................................................. [2]
Section B

Kazizela Manufacturers would like to computerise their existing manual order processing system. A systems analyst has been hired to work on this project.

(a) Describe what the analyst would do if the proposed change does not meet the requirements in the feasibility study.

(b) State three activities that would be done during the design stage.

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

(c) Write down two reasons why the system being developed must be subjected to more than one test.

Reason 1 ......................................................... [1]
Reason 2 ......................................................... [1]

(d) When the program of the system is being written, it is broken into modules. Give two advantages of this.

Advantage 1 ...................................................... [1]
Advantage 2 ...................................................... [1]

(e) This system would need additional hardware, apart from the computer itself. Name two additional hardware the system might require and give a reason for each.

Hardware 1......................................................... [1]
Reason .......................................................... [1]
Hardware 2......................................................... [1]
Reason .......................................................... [1]
(f) After computerisation of the system, the company decides to advertise on the internet. Write down **two** advantages and **two** disadvantages of this type of advertising.

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

Advantage 2 ........................................................................................................ [1]

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

Disadvantage 2 .................................................................................................... [1]

(g) Give **three** items to consider in evaluating the system.

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

Item 2 .................................................................................................................. [1]

Item 3 .................................................................................................................. [1]
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