EXAMINATIONS COUNCIL OF ZAMBIA

Joint Examination for the School Certificate and General Certificate of Education Ordinary Level

BIOLOGY

PAPER 3 Practical Test

Wednesday 29 OCTOBER 2003

1 hour 15 minutes

Additional materials:
As listed in Instructions to Supervisors.

TIME: 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

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

There are two questions in this paper.

Answer both questions.

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

Use sharp pencils for your drawings. Coloured pencils and crayons should not be used.

INFORMATION FOR CANDIDATES

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

<table>
<thead>
<tr>
<th>FOR EXAMINER'S USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
1 You are provided with sample solutions X, Y and Z. The beakers labelled X, Y, and Z contain the different sample solutions.

(a) Carry out food tests on the three sample solutions, to determine the presence or absence of starch, reducing sugar and proteins.

(i) In the test method column, describe how you will carry out the tests for starch, reducing sugar and protein.

(ii) Complete the observation column of the tables, for each solution.

TABLE 1: Starch test

<table>
<thead>
<tr>
<th>TEST</th>
<th>SOLUTION</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>STARCH TEST</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[6]

TABLE 2: Reducing sugar test

<table>
<thead>
<tr>
<th>TEST</th>
<th>SOLUTION</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>REDUCING SUGAR TEST</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[6]
(b) If these sample solutions were drinks;

(i) Which drink(s) would be suitable for a pregnant woman?

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

Give a reason:

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

(ii) Which drink(s) would not be recommended for a person suffering from Diabetes Mellitus?

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

Give a reason:

............................................................................................................ [1]
(iii) Which of the three drinks X, Y and Z would be most suitable for a footballer at half-time?

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

Give a reason:

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

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

[Total 24]

2 (a) You are provided with specimens D31 and D32.

(i) Make a large, labelled drawing of the lower surface of D31.

(ii) Measure accurately the longest distance of specimen D31.

Longest distance ............................................................................................................. [1]

(iii) Use your measurement to calculate the magnification of your drawing. Show your working.

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

........................................................................................................................................
(b) Specimen **D31** carries out photosynthesis. Describe **three visible ways** in which it is adapted for photosynthesis.

(i)

(ii)

(iii) [3]

(c) Using a hand lens:

(i) Compare **D31** with **D32**.
   
   State **two visible similarities** between them.
   
   1. .................................................................
   
   2. ................................................................. [2]

(ii) State **three visible differences** between them.

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

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

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

   [Total 16]
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