EXAMINATIONS COUNCIL OF ZAMBIA

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

BIOLOGY

PAPER 3 Practical Test

Friday 19 OCTOBER 2012

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 provided 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 HB 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.

Cell phones are not allowed in the examination room.

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FOR EXAMINER'S USE

1

2

Total

---

This question paper consists of 4 printed pages.
Answer all the questions.

1. You are provided with solution S1 which contains a nutrient. Divide solution S1 equally into two test tubes labelled T1 and T2. Also provided is a solution labelled J.

   (a) (i) Test Solution T1 for starch.
   
<table>
<thead>
<tr>
<th>SOLUTION</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
<th>CONCLUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   [5]

   (ii) Test a drop of juice from specimen J for starch.

<table>
<thead>
<tr>
<th>SOLUTION</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
<th>CONCLUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   [2]

   (iii) Test solution T2 for reducing sugar.

<table>
<thead>
<tr>
<th>SOLUTION</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
<th>CONCLUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   [5]

   (b) Test juice from specimen J for reducing sugar. Construct a table in which your test method, observations and results will be recorded.

   [8]

   [Total 20]
2 Make thin transverse sections of the petiole of P2. Add a drop of iodine solution on one side of the transverse section laid out on blotting paper. Allow the treatment to stand for a few seconds.

(a) (i) What happens to the transverse section after adding iodine solution?

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

(ii) Make a large labelled drawing of the stained transverse section.

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

(iii) What conclusion can be made about the observed results after adding iodine solution?

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

..........................................................................................................................[1]
(b) (i) Measure the diameter of the stained transverse section of P2.
Measurement: ................................................................. [1]

(ii) Measure the diameter of the drawing of the transverse section of specimen P2 made in (a) (i) above:
Measurement: ................................................................. [1]

(iii) Calculate the magnification of the drawing and show your working.

(c) Cut a minimum of three transverse sections of the petiole of P2. Suspend sections in 2cm³ Benedicts solution in a test-tube. Test the sections for reducing sugar.

(i) Record the method, observation and conclusion in the table below.

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>TEST METHOD</th>
<th>OBSERVATION</th>
<th>CONCLUSION</th>
</tr>
</thead>
</table>

[3]

[7]

[Total 20]
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