EXAMINATIONS COUNCIL OF ZAMBIA

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

BIOLOGY

PAPER 3 Practical Test

Friday 16 OCTOBER 2009 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 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.

FOR EXAMINER'S USE

1

2

Total

This question paper consists of 6 printed pages. [Turn over
Answer all the questions.

1. You are provided with sample solution A which is a juice extracted from specimen W31. Carry out a food test to determine the presence of reducing sugar in sample solution A.

   (a) (i) State the test method, observation and conclusion in the table below.

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

   (ii) State the nutritional value to the human body of the reducing sugar.

   (b) State one way in which the propagation of specimen W31 can be carried out.

   (c) Further practical tests on solution A revealed that the food contained Vitamin A.

   (i) What is the importance of this Vitamin to the human body?

   (ii) What is the chemical name of Vitamin A?

   (iii) What four health problems could a person suffer if the Vitamin A was lacking in the diet of the human being?

   1. 
   2. 
   3. 
   4. [4]
Specimen **W32** was soaked in distilled water and left to stand for 3 days.

Specimen **W33** was soaked in one molar salt solution and left to stand for 3 days.

(i) Carefully observe Specimens **W32** and **W33**. Describe the appearance of the specimens **W32** and **W33**.

**W32** ........................................................................................................................................ [1]

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

**W33** ........................................................................................................................................ [1]

(ii) Explain why the specimens **W32** and **W33** appeared in the state mentioned above.

**W32** ........................................................................................................................................ [1]

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

**W33** ........................................................................................................................................ [1]

(iii) Relate the appearance of specimen **W32** to the germination of seeds in nature.

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

[Total 20]
2 (a) You are provided with two leaves of the same species, specimens W34 and W35, which after picking have been prepared in different ways. These are submerged in water in two Petri dishes.

(i) Describe how specimen W34 differs in appearance from specimen W35.

(ii) Drain the water from specimen W34 and add iodine solution until the specimen is just covered.

Observe carefully how the specimen changes colour over the next 2 to 3 minutes.

1 Record the colour changes you observed.

2 Describe the appearance of specimen W34 when it was picked from the plant.

(iii) What conclusion can you draw from these results?

(iv) Describe how specimen W34 and W35 were prepared after being picked from the plant and,

Give the reasons for each stage of the preparation of specimens W34 and W35.
(b) (i) Make a large labelled drawing of the lower surface of specimen **W35**.

(ii) Measure accurately the longest distance of specimen **W35**.

Longest distance: .................................................................

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

Calculation

Magnification: .................................................................

[Total 20]
SUPERVISOR’S REPORT

The Supervisor or Teacher responsible for the subject is asked to answer the following questions.

1  Was any difficulty experienced in providing the necessary materials? If so, give brief particulars.

2  Did the candidates experience any difficulty during the course of the examination? If so, give brief particulars. Reference should be made to

(a)  difficulties arising from faulty apparatus, substitute specimens etc;

(b)  accidents due to apparatus or materials;

(c)  any information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

INFORMATION THAT APPLIES TO ALL CANDIDATES NEED ONLY BE GIVEN ONCE.

Signed: ..................................................................................................................

Name (in block capitals) ...........................................................................................
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