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P530/3

**BIOLOGY PRACTICAL**

**PAPER 3**

JULY/AUGUST 2016

3¼HRS

NTUNGAMO PRIVATE SECONDARY SCHOOLS

JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

**BIOLOGY PRACTICAL**

**PAPER 3**

3HOURS 15MINUTES

**INSTRUCTIONS TO CANDIDATES**

* Answer all questions
* Answers must be written in the space provided only:

|  |  |  |
| --- | --- | --- |
| **FOR EXAMINER’S USE ONLY** | | |
| **Question** | **Marks** | **Examiner’s signature** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| Total |  |  |

1. You are provided with specimen K.

(a) Examine the specimen and state two external features in each case, used to classify the specimen into its phylum and class:

(i) Features for the phylum: **02mks**

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(ii) Features for the class: **02mks**

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(b) Turn the specimen dorsal side upper most and examine the wings when pulled outwards:-

Describe the structure of :-

(i) Outer wings **02mks**

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(ii) Inner wings **02mks**

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(c) (i) With the help of a hand lens, examine the head of the specimen. Using any four observable features on the head, explain how each of them enables the animal to survive in its habitat. **04mks**

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(ii) View the anterior part of the head using a hand lens. Draw and label. **13mks**

(d) Pin the specimen with the dorsal side uppermost, dissect along the left lateral line of the abdomen. Displace the dorsal cuticle and clear any fat tissue without displacing any other structures, draw and Label your dissection. **14mks**

2. (a) You are provided with solution Q which is a food mixture. Using the reagents provided, Carry out tests to determine the nature of solution Q. In a suitable table in the space below, clearly state your tests, observations and deductions.  **26mks**

(b) You are provided with specimen B. Peel specimen B and cut out four equal cubes of the following dimensions; 1cmx1cmx1cm. Label 4 test tubes as 1, 2, 3, and 4. Add 2cm3 of hydrogen peroxide to test tubes 1, 2 and 3 and 2cm3 of distilled water to test tube 4.

(i) carry out tests on the Cubes following instructions in the following table. Record your observations  **4mks**

|  |  |  |
| --- | --- | --- |
|  | TESTS | OBSERVATIONS |
| (i) | To test tube 1, add one whole cube |  |
| (ii) | To test tube 2, add one cube after cutting it up into 16 equal parts. |  |
| (iii) | To test tube 3, add one whole cube after boiling it for 10 minutes |  |
| (iv) | To test tube 4, add one whole cube |  |

(ii) What is being investigated in the tests? **01mk**

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(ii) Explain your results in each test tube **08mks**

Test tube 1:

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Test tube 2

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Test tube 3

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Test tube 4

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(iv) From your results, state three properties of the active ingredient in the specimen under investigation **03mks**

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3. You are provided with specimen **L** and **N**,

(a) (i) Peel off epidermis of specimen L. Put it on a slide and add a drop of methylene blue dye and cover with a cover slip. Observe under medium power objective lens of a microscope. Draw and label two adjacent to each other **05mks**

(ii) Using your finger, scrape off cheek cells from your mouth. Mount on a glass slide, put a drop of Methylene blue dye and cover with a cover slip. Observe under medium objective lens. Draw and label one cell. **04mks**

(iii) How does a cell from **L** differ from a cheek cell? **03mks**

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(b) Peel off the lower epidermis of specimen **N**. Put it on a glass slide and add a drop of iodine solution. Observe under medium power objective lens

(i) Draw and label the adjacent guard cells. **06mks**

(ii) Describe how guard cells are stained with iodine **01mk**

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(iii) Explain your description in (b) (i) above **01mk**

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**END**