Name: ………………………………………………………………………. Index No…………………….

*P530/3*

*Biology Practical*

*Paper 3*

*July/August 2022*

*3hours*

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**Community**

UNNASE MOCK EXAMINATIONS 2O22

*Uganda Advanced Certificate of Education*

BIOLOGY PRACTICAL

PAPER 3

3HOURS

**INSTRUCTIONS TO CANDIDATES**

* ***Answer all questions in the spaces provided.***

**FOR OFFICIAL USE ONLY**

|  |  |
| --- | --- |
| NO. | MARKS |
| 1 |  |
| 2 |  |
| 3 |  |
| TOTAL |  |

***Turn over***

1. You are provided with specimen **R** which is freshly killed.

(a)(i) Examine the specimen and list three structures it uses for defence. (*3mrks)*

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(ii) Observe its tail. Describe the arrangement and attachment of its scales. *(2mrks*)

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(iii) State the significance of attachment and arrangement of scales to the survival of the specimen in its habitat. (*2mrks*)

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(b) Open the abdominal cavity. Cut out the gut, clear away all fats with a blunt forceps to expose main abdominal features.

Draw and label your dissection without displacement and with exclusion of reproductive structures. (*11mrks*)

(c) Open the regions anterior to diaphragm. Displace the heart to your left. Clearly expose the vessels that exclusively;

(i) Draw blood from the left of thorax and regions of the head and neck back to the heart.

(ii) Supply the right side of the regions. Draw and label your dissection. (*22mrks)*

2. You are provided with solutions of different concentrations labeled T, T1, T2, T3 and T4 and specimen B, filter paper and a stop clock.

(a) Cut 4 cubes from specimen B each with size of 1cm x 1cm x 1cm. Label three cubes 1, 2 and 3. Cut cube 2 into 4 equal pieces and cube 3 into 16 pieces. Don’t mix the pieces. Keep the remaining cube for part b.

Obtain 4 test tubes and label three of them 1, 2 and 3. Add 4cm3 of solution T to test tube 1, 2 and 3.

Use the remaining test tube to boil the cube and pieces of each cube separately for one minute. Pound each cube separately into a paste. Add the paste of the cube 1, 2 and 3 to corresponding test tubes. Observe and record the observations and deductions in the table below. (6mrks)

(i)

|  |  |  |  |
| --- | --- | --- | --- |
| Test tube | Content | Observation | Conclusion |
| T1 | 4cm2 of solution T + paste of cube 1 |  |  |
| T2 | 4cm3 of T + paste of cube 2 |  |  |
| T3 | 4cm3 of T + paste of cube 3 |  |  |

(ii) Explain the observation in test tube 1, 2 and 3. (*9mrks*)

Test tube 1

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Test tube 2

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Test tube 3

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(b) Crush the remaining cube into a paste; add 6cm3 of distilled water to make a solution labeled B. Decant clear extract B on to a petri dish.

Cut 4 pieces of filter paper each measuring 0.5cm x 0.5cm. Soak the cut filter papers into the extract for five minutes. Label 4 test tubes as T1, T2, T3 and T4. Pour 10cm3 of solutions T1, T2, T3 and T4 into the corresponding test tubes.

(i) Remove one filter paper with forceps from the petridish and dip it into test tube labeled and start the stop clock immediately.

Note and record the time taken in seconds for the paper to rise back to the surface of the solution and other observation as the paper rises in the table below. (*12mrks*)

Repeat the procedure for T2, T3 and T3.

|  |  |  |  |
| --- | --- | --- | --- |
| Test tube |  | | Time taken for the paper to rise to surface in seconds. |
|  | Other observation | Rate at which paper rises |
| T1 |  |  |  |
| T2 |  |  |  |
| T3 |  |  |  |
| T4 |  |  |  |

(ii) Explain the time recorded for test tube T1 and T4. (*6mrks*)

Test tube T1

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Test tube T4

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(iii) With a reason state nature of specimen B. (*2mrks*)

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(iv) State the properties of specimen B. (*3mrks*)

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3. You are provided wit h specimens M, B, D, C and P.

(a) Examine specimens **M** and **P**. With a reason state the type of pollination for specimens M and P. *(6mrks*)

Type of pollination for specimen M

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Reason

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Type of pollination for specimen P

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Reason

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(b)(i) Describe the structure of gamete producing organs for specimens M, B, D, C and P.

Specimen M

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Specimen B

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Specimen D

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Specimen C

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Specimen P

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(ii) Construct an identification key for the specimens in the following order M, B, D, C and P

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