**Name:……………………………………………………………………………………………………………………….**

**Signature:…………………………………………………………..Index No.:…………………………………….**

**553/2**

**BIOLOGY**

**(Practical)**

**Paper 2**

**Jul/Aug 2016**

**2 Hours**

**MUKONO EXAMINATIONS COUNCIL**

**Uganda Certificate of Education**

**BIOLOGY PRACTICAL**

**Paper 2**

**2 Hours**

**INSTRUCTIONS TO CANDIDATES**

* *This paper consists of* ***three*** *questions.*
* *Answer* ***all*** *questions*
* *Drawings should be made in the spaces provided.*
* *Use sharp pencils for your drawings.*
* *Coloured pencils and crayons should* ***not*** *be used.*
* *No additional sheets of writing paper are to be inserted in this booklet.*
* *Work on additional sheets will* ***not*** *be marked.*

|  |  |  |
| --- | --- | --- |
| **For Examiner’s Use Only** | | |
| **Question** | **Marks** | **Examiner’s No and signature** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| **Total** |  |  |

1. You are provided with four lots of seeds **S1**, **S2**, **S3** which have been **soake**d for some time and **S4** which have not been soaked. You are required to investigate the activity of the specimens using hydrogen peroxide following the procedure below.

Label five test tubes as T1, T2, T3, T4 and T5 and add 2cm3 of hydrogen peroxide to each test tube.

Take one seed from each lot of **S1**, **S2**, **S3**, **S4** and remove the testas from **S1**, **S2**, and **S3** but leave **S4** intact. Transfer each seed into the corresponding test tube containing hydrogen peroxide at nearly the same time.

Record your observations and deductions in table 1.

Take another seed from lot **S4** and carefully the testa from it and transfer it in test tube labelled T5. Record your observations and deductions. ***(12marks)***

***Table 1***

|  |  |  |  |
| --- | --- | --- | --- |
| Test tube | Test | Observations | Deductions |
| T1 | **S1** seed without testa + 2cm3 of hydrogen peroxide |  |  |
| T2 | **S2** seed without testa + 2cm3 of hydrogen peroxide. |  |  |
| T3 | **S3** seed without testa + 2cm3 of hydrogen peroxide |  |  |
| T4 | **S4** seed with testa + 2cm3 of hydrogen peroxide |  |  |
| T5 | **S4** seed without testa + 2cm3 of hydrogen peroxide. |  |  |

b) Explain the observations in Test tubes T2, T4 and T5. ***(06marks)***

(i) T2

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(ii) T4

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(iii) T5

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c) What conclusions can be made from the experiment above? ***(02marks)***

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1. You are provided with specimen **Q** which is an animal.

Examine the specimen carefully and answer the questions that follow.

a) State the phylum and class of the specimen and give a reason for your answer.

(i) Phylum ***(01mark)***

………………………………………………………………………………………………………………………………

Reason ***(01mark)***

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(ii) Class ***(01mark)***

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Reason ***(01mark)***

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b) Cut and remove one of the pectoral fins.

(i) Describe the structure of the fin. ***(03marks)***

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(iii) State how the structure of the pectoral fin is adapted to the habitat where the

animal lives. ***(04marks)***

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c) Cut off and remove a piece of skin measuring 2cm x 2cm from the specimen.

(i) Draw and label the structure of the skin removed and indicate the direction of the

head. ***(04mark)***

(ii) State how the structure of the skin is adapted to the habitat of the animal.

***(02marks)***

1. You are provided with **E**, **F** and **G** which are flowers.

a) Examine the specimens **E** and **F**, carefully and state the differences between them

using petals, sepals and stamens in table – below.

**Table**  ***(03marks)***

|  |  |  |
| --- | --- | --- |
| Part of flower | Specimen **E** | Specimen **F** |
| Petals |  |  |
| Sepals |  |  |
| Stamens |  |  |

b) Using a hand lens, examine one flower of specimen **G** and specimen **F**. Explain one

advantage that specimen **F** has over specimen **G**. ***(03marks)***

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c) Describe how each of the specimens F and G are adapted for pollination.

(i) Specimen **F** ***(02marks)***

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(ii) Specimen **G**

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d(i) Open up one flower of specimen **G** to expose the inside structures. Draw and

label. ***(05marks)***

(ii) Cut specimen **E** longitudinally. Cut and remove the sepals. Draw and label the

remaining structures. ***(05marks)***

***End -***