**Name: .......................................................................... Centre/Index No. ....................**

 **Signature ....................................................................**

553/2

BIOLOGY

PAPER 2

Nov/Dec 2020

2 Hours



**HES MOCK EXAMINATIONS 2020**

**UGANDA CERTIFICATE OF EDUCATION**

BIOLOGY

**PAPER 2**

**2 HOURS**

**INSTRUCTIONS:**

 *Answer* **all** *questions.*

 *Drawings and answers should be made and written in the spaces provided respectively.*

 *Use a sharp HB pencil for your drawings.*

 *Coloured pencils or 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*

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| --- |
| **For Examiners’ use only** |
| **Question** | **Marks** | **Examiner’s Initials** |
| **1.** |  |  |
| **2.** |  |  |
| **3.** |  |  |
| **Total** |  |  |

**Turn Over**

1. You are provided with specimens ***R*** and ***S***, which are both seedlings, of different age. You are required to crush each specimen separately in a mortar, add a little water to make an extract, which should be decanted into a small beaker. The extract from specimen ***R***, should be labelled ***R***. The extract from specimen ***S*** should be labelled ***S***.

(a) Use the extracts to carry out the tests in the table 1 below: (12 marks)

***Table I***

|  |  |  |
| --- | --- | --- |
| **Test** | **Observation** | **Deduction** |
| 1. To $1cm^{3}$ of extract ***R*** in a test tube add 3 drops of iodine solution. Shake to mix.
 |  |  |
| 1. To $1cm^{3}$of ***R*** in a test tube add $1cm^{3}$ of Benedict’s solution and boil.
 |  |  |
| 1. To $1cm^{3}$ of extract ***S*** add 3 drops of iodine solution. Shake to mix.
 |  |  |
| 1. To $1cm^{3}$ of extract ***S*** add $1cm^{3}$ of Benedict’s solution and boil.
 |  |  |
| 1. To $2cm^{3}$ of extract $S$ add $1cm^{3}$ of sodium hydroxide solution followed by 3 drops of copper(ii) sulphate solution, shake.
 |  |  |

 (b) Explain the results in tests (ii) and (iv) in table I. Test (ii) (02 marks)

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Test (iv) (02 marks)

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(c) State the specimen (seedling) which is;

(i) older, (01 mark)

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(ii) younger. (01 mark)

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 (d) State **two** uses of the food substance identified in test (iv) in table I. (02 marks)

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**Turn Over**

2. You are provided with specimens ***X***, ***Y*** and ***Z***, which are all plant structures.

 (a) Explain how the structure of specimen ***X*** suits its function. (04 marks)

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 (b) Cut a longitudinal section through specimen ***X***.

In the space below make a well labelled drawing of the longitudinal section of specimen ***X***. (06 marks)

(c) Describe the structures of each of the specimens ***Y*** and ***Z***.

1. ***Y*** (02 marks)

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1. ***Z*** (04 marks)

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(d) (i) Identify the part of a plant that specimen ***Z*** is (01 mark)

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 (ii) State reasons for your answer in (d) (i) above. (03 marks)

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**Turn Over**

3. You are provided with specimens ***O***, ***P*** and ***Q*** which are animal structures.

1. Examine the specimens and describe the structure of each of them.

 (06 marks)

(i) ***O***

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(ii) ***P***

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(iii) ***Q***

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(b) In the space below make a labeled drawing of specimen ***O***. (05 marks)

**Turn Over**

 (c) State the uses of the structures to the animal. (05 marks)

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(ii) ………………………………………………………………………......

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(iii) ………………………………………………………………………......

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(iv) ………………………………………………………………………......

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(v) ………………………………………………………………………......

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(d) Make a drawing of specimen of ***Q*** (do not label) (04 marks)

**END**