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

 Candidates Signature................................

**231/3**

**Biology**

**Practical**

**Paper 3**

**Time 1 ¾ hours END OF TERM 2 YEAR 2019**

 **FORM 4 EXAMINATION**

 **INSTRUCTIONS TO CANDIDATES**

* *Write your name and index number in the spaces provided at the top of this page.*
* *Answer* ***all*** *questions.*
* *You are required to spend the first 15 minutes of the1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
* *Answers must be written in the spaces provided in the question paper. Additional pages must not be inserted.*

**For Examiners Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score**  |
| **1** | **15** |  |
| **2** | **14** |  |
| **3** | **11** |  |
| **Total score** | **40** |  |

1. You are provided with specimen labelled **Q**. cut the specimen into two halves.

(a) Cut four rectangular strips from one half of specimen **Q,** each strip should be of 20mm long

 and 5mm wide. Place two stripes into solution **R** and the other two strips into solution **S**.

 Allow the experiment set ups to stand for 10 minutes.

(i) Using your fingers feel the texture of the stripes and record your observations from each solution:

 Solution **R** (1mark)

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 Solution **S** (1mark)

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 (ii) Account for your observations of no. (i) above. (4marks)

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b) Peel the other half of specimen **Q,** cut into small pieces and then crush in a mortar. Use the

 Reagents provided to test for the various food substances in the extract obtained from the crushed material.

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| --- | --- |
| Record **the procedures, observations and conclusions** in the table below. | (9marks) |
| **Food substance** | **Procedure** | **Observations** | **Conclusion** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**2**. The Diagram below shows two organisms (R and S) belonging to the same phylum



R S

(a) **Name** the class in which the organisms shown above belong. (2 Mark)

i) Organism R

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ii) Organism S

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b**) Other than** presence of exoskeleton, list **two** observable similarities between the two organisms (2 Marks)

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c) List **two** observable differences between the two organisms (2 Marks)

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| --- | --- |
| P | S |
|  |  |
|  |  |

d) **Explain** how the organism labelled R is adapted to safeguard itself from the predator (2 Marks)

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e) (i) **Name** the gaseous exchange system exhibited by organism S (1 Mark)

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ii) **State** the respiratory surface used by organism S (1 Mark)

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f) Outline **four** functions of exoskeleton (4 Marks)

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3. (i) Examine photograph k 1and K2 then answer the questions that follow.





 **K2**

 **K1**

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**R1** **x**

 **R2**

a) **Nam**e the response that is exhibited by the seedlings K1 and K2 (1mrk.)

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b) **Explain** how the response you have stated in (a) above occurs. (4mrks)

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(c) What is the significance (survival value) of the response you have stated in (a) above. (1 mrk)

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d) Photographs R1 and R2 show a certain response in plants.

* 1. i**) Name** the response shown by plant X. (1mrk)
	2. …………………………………………………………………………………………………………………………………………

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ii) **Explain** how the response you have stated In (a) above occurs. (2mks)

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iii) **What** is the biological significance of the response shown by X? (2 mks)

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