**NAME: ……………………………………………………………… INDEX NO: …………………..……………**

**SCHOOL…………………………………………….……………… CANDIDATE’S SIGNATURE:………….**

**DATE: ……………….…………..…**

**231/3**

**BIOLOGY**

**PAPER 3(Practicals)**

**Time: 1 ¾ hours**

**INSTRUCTIONS TO CANDIDATES:**

* *Write your* ***name*** *and* ***index number*** *in the spaces provided at the top of this page.*
* *Sign and write* ***date*** *of examination in the spaces provided above*
* *Answer* ***all*** *the questions*
* *You are required to spend the first 15 minutes of the 1 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 page must not be inserted.*

***For Examiner’s Use Only:***

|  |  |  |
| --- | --- | --- |
| **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATES SCORE** |
| 1 | 14 |  |
| 2 | 12 |  |
| 3 | 14 |  |
| **TOTAL**  |  **40** |  |

*This paper consists of 4 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

1. (a) You are provided with six photographs of plant specimen labelled **D2**, **D3**, **D4**, **D5**, **D**6, and **D**7. The dichotomous key provided can be used to identify them.

(a) 1 a Leaves needle-like……………………………………………………………………...*Panaceae*

 b Leaves broad………………………………………………………………………………go to 2

2 a leaves compound …………………………………………………………………………..go to 3

 b Leaves simple………………………………………………………………………………go to 4

3 a Leaflet attached to many stalk that join to the main stalk…………………………...*Mimosaceae*

 b Leaflets attached to main stalk ………………………………………………………..*Compositae*

4 a Leaves green ………………………………………………………………………………go to 5

 b Leaves purple ……………………………………………………………………...*Commelinaceae*

5 a Leave parallel veined …………………………………………………………………….*Graminae*

 b Leaves net veined ……………………………………………………………………...*Geranaceae*

Use the dichotomous key to identify the specimens. In each case show the sequence of steps followed and identify. (12mks)

|  |  |  |
| --- | --- | --- |
| **Specimen** | **Steps followed**  | **Identity** |
| **D2** |  |  |
| **D3** |  |  |
| **D4** |  |  |
| **D5** |  |  |
| **D6** |  |  |
| **D7** |  |  |

(b) Suggest the possible habitat that specimen **D4** is adapted to. (1mark)

 ……………………………..……………………………………………………………………………

 ……………………………..……………………………………………………………………………

 (c) What is the importance of the structure marked **S** in specimen **D4**? (1mark)

 ……………………………..……………………………………………………………………………

………………………………………………………………………………………………………......

2. You are provided with a sample of food substance labelled **Z** which is in solution form. Use the reagents provided to identify the type of food present in the substance **Z**. write the food being tasted, the procedure and conclusion in the table below. (12mks)

|  |  |  |  |
| --- | --- | --- | --- |
| **Food being tested** | **Procedure** | **Observations** | **Conclusion** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

3. You are provided with photographs of specimens labelled **M** and **N**. Examine and use them to answer the questions that follow.

(a) Identify the specimens and in each case give **two** reasons for your answer.

 (i) Specimen **M** ……………………………………………………. (1mark)

 Reasons (2marks)

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

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

(ii) Specimen **N**…………………………………………………… (1mark)

 Reasons (2marks)

 …………………………………………………………………………………………………………..

 …………………………………………………………………………………………………………..

 (b) State **four** features of specimen **N** which adapts it to its functions. (4marks)

 …………………………………………………………………………………………………………….

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

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

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

 (c) State **four** differences between specimens **M** and **N**. (4marks)

|  |  |
| --- | --- |
| **M** | **N** |
|  |  |
|  |  |
|  |  |