**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Index No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sign --------------------------------------- Dates: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Biology 231/3**

**Paper 3 (Practical)**

**TIME: 1 ¾ HRS**

**FORM 4**

**Instructions to candidates.**

1. Write your name and index Number in the spaces provided above.

2. Sign and write the date of examination in the spaces provided

3. Answer all the questions in the spaces provided.

4. You are required to spend the first 15 minutes of the 1 ¾ hors allowed for the paper reading the whole paper carefully before commencing your work.

5. Additional pages must not be inserted.

For examiners use only

|  |  |  |
| --- | --- | --- |
| Question | Maximum score | Candidates Score |
| 1 | 12 |  |
| 2 | 16 |  |
| 3 | 12 |  |
| Total score | 40 |  |

1. You are provided with a sample of food labeled Q. Using the reagents provided carry out tests on the food sample to identify the type of food substances present in Q (12 Marks)

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

1. You are provided with specimens labeled P1,P2,P3,P4,P5 and P6.

A dichotomous key shown below can be used to identify them.

1. (a) Leaves simple …………………………………………….. go to 2

(b) Leaves compound ……………………………………… Cassia

1. (a) Leaves green ……………………………………………….. go to 3

(b) Leaves purple ……………………………………………… Tradescantia.

1. (a) Leaves parallel veined …………………………………. Zea

(b) Leaves not veined ………………………………………. Go to 4

1. (a) Leaf margin Serrated …………………………………… go to 7

(b) Leaf margin smooth …………………………………….. go to 5

1. (a) Leaves Hairy …………………………………………………….. Solanum

(b) Leaves not hairy ………………………………………………… go to 6

1. (a) Leaves ovate …………………………………………………… Boungavillea

(b) Leaves Lanceolate ………………………………………….. Mangifera

1. (a) Leaves fleshy ………………………………………………. Kalanchoe

(b) Leaves not fleshy ……………………………………….. Hibiscus

1. Use the dichotomous key to identify each of the plant specimens provided.

|  |  |  |
| --- | --- | --- |
| Specimen | Steps followed | Identity |
| P1 |  |  |
| P2 |  |  |
| P3 |  |  |
| P4 |  |  |
| P5 |  |  |
| P6 |  |  |

1. With a reason for each case identify the classes of P1 and P4 (4 marks)

P1 Class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reason \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P2 Class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reason\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. You are provided with specimen labeled M.

Examine it.

1. Identify the specimen and state the organism from which it was obtained. (2 mrks)

Specimen part Organism

M

1. i, Draw and label specimen M (4 Mrks)

ii, Calculate the magnification of your drawing (2 Mrks)

Using observable features only, explain how specimen M is adapted to its function. (4 Mrks)