**Name**…………………………………… …………………………..………… Index No:………………………….

 Candidate’s Signature …………..……………

Date: …………………………

**231/3**

**BIOLOGY**

**PAPER 3**

**(THEORY)**

**TIME: 2 HOURS**

***Kenya Certificate of Secondary Education (K.C.S.E.)***

**231/3**

**Biology**

**Paper 3**

**2 ½ Hours**

**INSTRUCTIONS TO CANDIDATES**

* Write your **name** and **index** **number** in the spaces provided above
* **Sign** and write the **date** of examination in the spaces provided.
* Answer ***all*** the questions in the spaces provided.

**For Examiners Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum score** | **Candidate’s score** |
| 1 | 17 |  |
| 2 | 12 |  |
| 3 | 11 |  |
| 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. You are provide with specimen K. make thin cross sections of the leaf stalk. Place the sections on a glass slide. Using a dropper, add a drop of methylene blue to the sections. After 5 minutes, use a blotting paper to dry the sections. Examine one using a hand lens

 (a) Make a well labeled drawing of the section (6mks)

 (b) In the table below, state the functions of the parts labeled in (a) above (6mks)

|  |  |
| --- | --- |
| Part labeled | Function  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

 (c) Why were the following procedures done?

 (i) Making thin sections (1mk)

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

 (ii) Adding a drop of methyelene blue to the sections

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

 (d) Examine the specimen with aid of a hand lens and state the class with a reason

 Class: (1mk)

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

 Reason (1mk)

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

2. You are provided with specimen L, which is a FOOD substance, and the following reagents:

M(Iodine solution); N(Benedicts solution); Q(DCPIP) R(1% copper sulphate) and S(10% Sodium hydroxide) carry out tests to determine the food substances in specimen L. record your results in the table below

|  |  |  |  |
| --- | --- | --- | --- |
| Food substance being tested for | procedure | Observations  | Conclusion  |
| Reducing sugar |  |  |  |
| Starch |  |  |  |
| Proteins  |  |  |  |
| Ascorbic acid |  |  |  |