**Name: …………………………………………………………… Index no ……..…...................................**

**School: ……………………………………………………....…. Candidate’s sign ……………………....**

**Date: ……………………………………………………………**

**231/3**

**BIOLOGY**

**PAPER 3**

**Practical**

**INSTRUCTIONS TO CANDIDATES:**

* *Write your* ***name*** *and* ***index number*** *in the spaces provided.*
* *Sign and write* ***date*** *of examination in the spaces provided above*
* *Answer* ***all*** *the questions in section* ***A*** *and* ***B***
* *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully.*

***For Examiner’s Use Only:***

|  |  |  |
| --- | --- | --- |
| **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATES SCORE** |
| 1 | 14 |  |
| 2 | 15 |  |
| 3 | 11 |  |
| **TOTAL**  |  **40** |  |

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

1. Examine the photographs below and answer the questions that follow.



**S**

**P**

**Q**

**R**

1 (a) Label the parts **M N O P** (4mks)

**M**…………………………………………………..

**N**…………………………………………………..

**O**…………………………………………………..

**P** …………………………………………………..

 (b) Identify the fused bones.

 (1mk)

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

 (c) Name the;

 (i) Bone that articulates at the point labeled **M.**

(1mk)

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

 (ii) The hole labeled **R**.

 (1mk)

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

 (d)( i) Give the identity of bone **Q** and **R.** (2mks)

 **Q**…………………………………………………..

 **R**…………………………………………………..

 (ii) Give **one** reason each for your answer in d(i) above ( 2mks)

 **Q** …………………………………………………..

 **R** …………………………………………………..

(e) Give **three** differences between bone **Q** and **R** ( 3mks)

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2. Below is an electron micrograph study it and answer the questions that follow.

 (a) Identify the following parts. (6mks)

 **A**………………………………….. **D**…………………………………..

 **B**………………………………….. **E**…………………………………..

 **C**………………………………….. **F**…………………………………..

(b) State the kingdom of the organism from which the micrograph was taken. (1mk)

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c) Give **two** reasons for your answer in (b) above. (2mks)

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d) How many cells can be seen? (1mk)

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e) What is the function of the parts labeled **G,H** and **J.** (3mks)

 **G**………………………………………………………….…………………..

 **H**………………………………………………………………….…………..

 **J**………………………………………………………..……………………..

f) State the role of the parts labeled **D** and **F** (2mks)

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3. You are provided with bean seeds that have been soaked for 48hours.

 i) Crush them using a pestle and mortar. Add 6 ml of water to the paste. Divide the mixture into

 two portions then use the mixture to carry out test.

Using the following reagents-iodine solution, sodium hydroxide, Copper II sulphate solution provided . put your results in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | **Procedure** | **Observation** | **Conclusion** |
|  |  |  |  |
|  |  |  |  |

ii) State the functions of the food substance(s) you have found to the seed during germination. (3mks)

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