**NAME:…………………………………………….………….. CLASS:……. .ADM NO…………**

**231/3**

**BIOLOGY**

**FORM 4 JANUARY 2023 TERM 1 OPENER EXAM**

**PAPER 3 (PRACTICAL)**

**TIME: 13/4 Hours**

**INSTRUCTIONS TO CANDIDATES**

* *Write your* ***name, Admission******number*** *and* ***name of your school*** *in the spaces provided above*
* ***Sign*** *and write the* ***date*** *of examination in the spaces provided.*
* *This paper consists of three questions*
* *Answer* ***all*** *the questions in the spaces provided.*
* *You are required to spend the first 15 minutes of the 13/4 Hours allowed for this paper reading through all the questions before commencing your work.*
* *This paper consists of 5 printed pages.*
* *Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

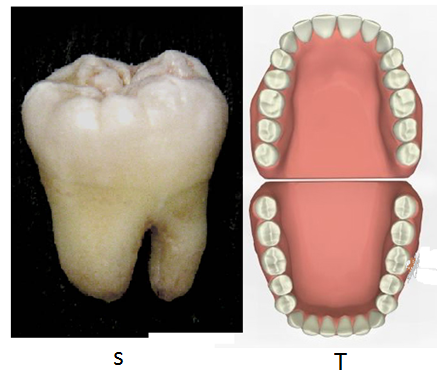
**For Examiners Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum score** | **Candidate’s score** |
| **1** | **17** |  |
| **2** | **10** |  |
| **3** | **13** |  |
| **Total Score** | **40** |  |

1. a)You are provided with solution W in a boiling tube. Using the provided reagents, carry out possible food tests to identify food substances present in solution W. **(12mks)**

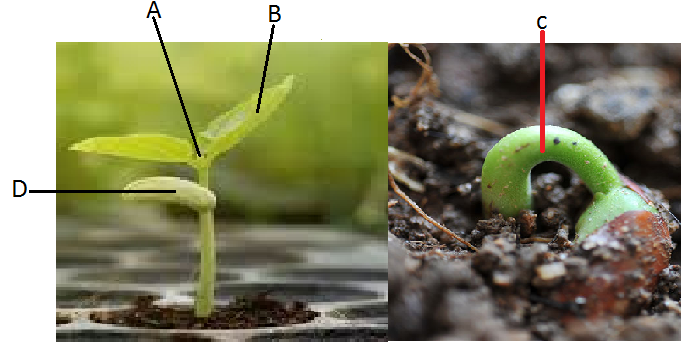
|  |  |  |  |
| --- | --- | --- | --- |
| **Food substance** | **Procedure** | **Observation** | **Conclusion** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

b) Study the photographs below showing a certain type of tooth and teeth arrangement in man.



1. Label any **TWO** parts of the tooth in photograph  **S**  (2mks)

1. Give **two** observable adaptations of the tooth to its function (2mks)
2. Write the **dental formula** for the teeth arrangement in photograph **T** (1mk)
3. Examine the photographs I and II of seedling specimen shown below and answer the questions that follows;



a) Name the parts labelled A, C and D. **(3 mks)**

A –

C -

D -

b) (i) Name the class to which the specimen belongs.  **(l mark)**

(ii) Give two reasons, using observable features to support your answer in (b) (i) above **(2 mks)**

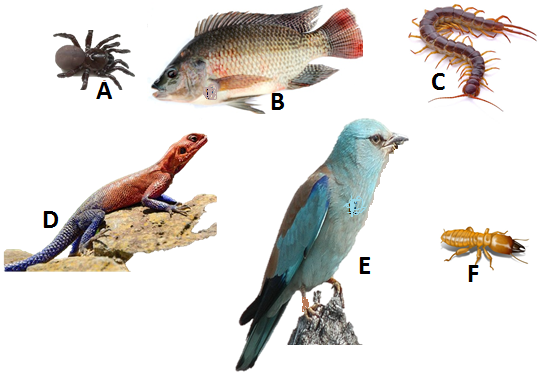
(c) Give two functions of the structure labeled D. **(2 mks)**

d) Name the type of germination exhibited by the seedlings. Give a reason for your answer. **(2mks)**

Type

Reason -

**3.** Below are photographs showing some observable features of animals



a. Complete and use the key below to identify the organism. 2mks  
  
1a. Organism with endoskeleton ……………………………………………..… go to 2  
1b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ………………………………………………… go to 3

2a. Has scales on the body……………………………………………………… go to 4  
2b. Has no scales on the body………………………………………..………… mammalian.  
3a. Has cephalothorax ………………………………………….……………… Arachnida.  
3b. Has no cephalothorax………………………….……………………………go to 5  
4a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_................................................... Pisces

4b. Has no fins ……………………………………………….……………….. go to 7  
5a. Has three pairs of legs …………………………………………….……… Insects.  
5b. Has more than three pairs of legs ………………………………………… go to 6  
6a. Two pairs of legs per segment ……………………………………..………Diplopoda  
6b. One pair of legs per segment……………………………………….………Chilopoda.  
7a. Has feathers ……………………………………………….……………… Aves  
7b. Has no feathers ……………………………………………….……………go to 8  
8a. Has a tail……………………………………………………………………Reptilia  
8b. Has no tail……………………………………………………….…………Amphibia.

b). Identify the organisms above using the completed key above. 6mks

|  |  |  |
| --- | --- | --- |
| Specimen | Steps followed | identity |
| A |  |  |
| B |  |  |
| C |  |  |
| D |  |  |
| E |  |  |
| F |  |  |

c). Name the phylum in which specimens A, C and F belong to 1mk

d). Give three reasons for your answer in (c). 3mks

e).Name one feature that is common in organisms **B**, **D** and **E**. 1mk

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