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

**SCHOOL…………………………………………………… CANDIDATE’S SIGNATURE………………**

 **DATE………..………………….……………..**

**231/3**

**BIOLOGY**

**PAPER 3**

**(PRACTICAL)**

**TIME: 1¾ HOURS**

**INSTRUCTIONS TO CANDIDATES:**

(a) Write your name and index number in the spaces provided above.

(b) Sign and write the date of examination in the spaces provided above.

(c) Answer all the questions in the spaces provided.

(d) You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper

 reading the whole paper carefully before commencing your work.

(e) Additional papers must not be inserted.

(f) This paper has three questions and pages.

(g) Students should check the question paper to ascertain that all the paper are printed

 as indicated and that no questions are missing.

**FOR EXAMINER’S USE ONLY:**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum****Score** | **Candidate’s****Score** |
| **1** | **15** |  |
| **2** | **15** |  |
| **3** | **10** |  |
| **Total score** | **40** |  |

*Biology Paper 3*

 *Turnover*

1. (a) You are provided with suspension W. Using the reagents provided carry food test and record the procedure, observation and conclusion.

|  |  |  |  |
| --- | --- | --- | --- |
| Food substance | Procedure | Observations | Conclusion |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

 (12 marks)

1. Mention **two** enzymes that may be required to digest the content of suspension

W in the alimentary canal of mammal. (2 marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (c) State the purpose of hydrochloric acid in the experiment. (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Biology Paper 3 2*

2. You are provided with seven photographs of plant specimens. They are labelled specimen

 D1, D2, D3, D4, D5, D6, D7.

*Biology Paper 3 3*

1. Use the dichotomous key to identify the taxonomic group of each of the seven specimens in the photographs provided.

**The dichotomous key**

1. (a) Leaves needle like ------------------------------------- go to 2

 (b) Leaves broad ------------------------------------- go to 3

2. (a) Leaves arranged in clusters on stem ------------- Pinaceae

 (b) Leaves not arranged in clusters on stem ------------- Auraucariaceae

3. (a) Leaves compound ------------------------------------- go to 4

 (b) Leaves simple ------------------------------------- go to 7

4. (a) Leaf pinnate ------------------------------------- go to 5

 (b) Leaf bipimate ------------------------------------- go to 6

5. (a) Leaflets attached to many small stalks that join the

 main one --------------------- Mimosaceae

 (b) Leaflets attached to one stalk --------------------- Rosaceae

6. (a) Leaflets attached to many small stalks that join the

 main one --------------------- Bignonaceae

 (b) Leaflets attached to one stalk --------------------- Compoistae

7. (a) Leaves green -------------------------------------- go to 8

 (b) Leaves purple -------------------------------------- go to 9

8. (a) Leaves parallel veined ------------------------------ Graminae

 (b) Leaves net veined ------------------------------ Geranaceae

9. (a) Leaves parallel veined ------------------------------ Commelinaceae (b) Leaves net veined ------------------------------ Euphorbiaceae

|  |  |  |  |
| --- | --- | --- | --- |
| Specimen | Steps followed | Identify |  |
| D1 |  |  |  |
| D2 |  |  |  |
| D3 |  |  |  |
| D4 |  |  |  |
| D5 |  |  |  |
| D6 |  |  |  |
| D7 |  |  | (14 marks) |

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

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Biology Paper 3 4*

3. The diagram **below** represents bones obtained from a mammal.

 A1

A2

A3

 (a) Identity bones. (3 marks)

 A1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 A2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 A3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Biology Paper 3 5*

 (b) Name parts labelled. (3 marks)

 **X** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Y** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Z** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (c) From which region of the body was bone labelled A2 obtained. (1 mark)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (d) State the function of part labelled **X**. (1 mark)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (e) State **two** adaptations of bone labelled A1 to its function. (2 marks)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Biology Paper 3 6*