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

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

Date: ……………………………

231/3

**BIOLOGY**

PAPER 3(PRACTICAL)

**TIME: 1HOUR 45MINUTES**

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

**Biology**

Paper 3 (practical)

**Time: 1hr 45minutes**

**INSTRUCTIONS TO CANDIDATES:**

* *Write your* ***name,******index number*** *and* ***school*** *in the spaces provided above.*
* *Sign and write the* ***date*** *of examination in the spaces provided above*
* *Answer* ***all*** *the questions in the spaces provided*
* *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
* *Additional pages must not be inserted.*
* *Candidates should check to a certaiin that all pages are printed as indicated.*

***For Examiner’s Use Only:***

|  |  |  |
| --- | --- | --- |
| **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATE’S SCORE** |
| 1 | 14 |  |
| 2 | 15 |  |
| 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 provided with the specimen labelled N. examine it and answer the questions that follow.

(a) Giving a reason, state the group of succulent fruits specimen N belongs to?

**Group** (1mk) ……………………………………………………………………………………………………………………………………………………………………………………………………………………

**Reason** (1mk) ………………………………………………………………………………………………………….

(b) (i) Name the dispersal agent of specimen **N**. (1mk)

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

(ii) Give **two** observable for adaptation of specimen **N** to the agent named in b(i) above. (2mk) …………………………………………………………………………………………………………

…………………………………………………………………………………………………………

(c) Using a scapel, obtain a transverse section of specimen **N**. Draw a plan diagram of a cut surface of one half and label the parts. (5mks)

(d) Squeeze about 5mls of juice from specimen **N** into a test-tube.

(i) Using the juice obtained, calculate the approximate percentage of ascorbic acid (vitamin C) contained, given that 12 drops of 0.1% ascorbic acid decolourises 1cm3 of **DCPIP**. (3mks)

(iii) Using the remaining juice of specimen **N** carry out iodine test;

Record your observation. (1mk)

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

2. The photograph labelled **1, 2,** and **3** below are bones obtained from a mammal. Examine them and answer questions that follow.

**PHOTOGRAPH 3**

**PHOTOGRAPH 2**

(a) (i) Identify the bones in photographs **1, 2,** and **3** and state where found. (6mks)

|  |  |  |
| --- | --- | --- |
|  | **Identify** | **Region where found** |
| **Photograph 1** |  |  |
| **Photograph 2** |  |  |
| **Photograph 3** |  |  |

(ii) Namethe parts labelled **J** and **K** (2mks)

…………………………………………………………………………………………………………

…………………………………………………………………………………………………………

(iii) State the use of each of the parts labelled **S** and **T**. (2mks)

**S** …………………………………………………………………………………………

**T** …………………………………………………………………………………………

(b) State one difference between part labelled **L** and photograph **2** and the same part as observed in photograph **1**. (1mk)

…………………………………………………………………………………………………………

(c) State the function of the part labelled **M** (1mk)

…………………………………………………………………………………………………………

(d) Name the type of joint at the part labelled **T** (1mk)

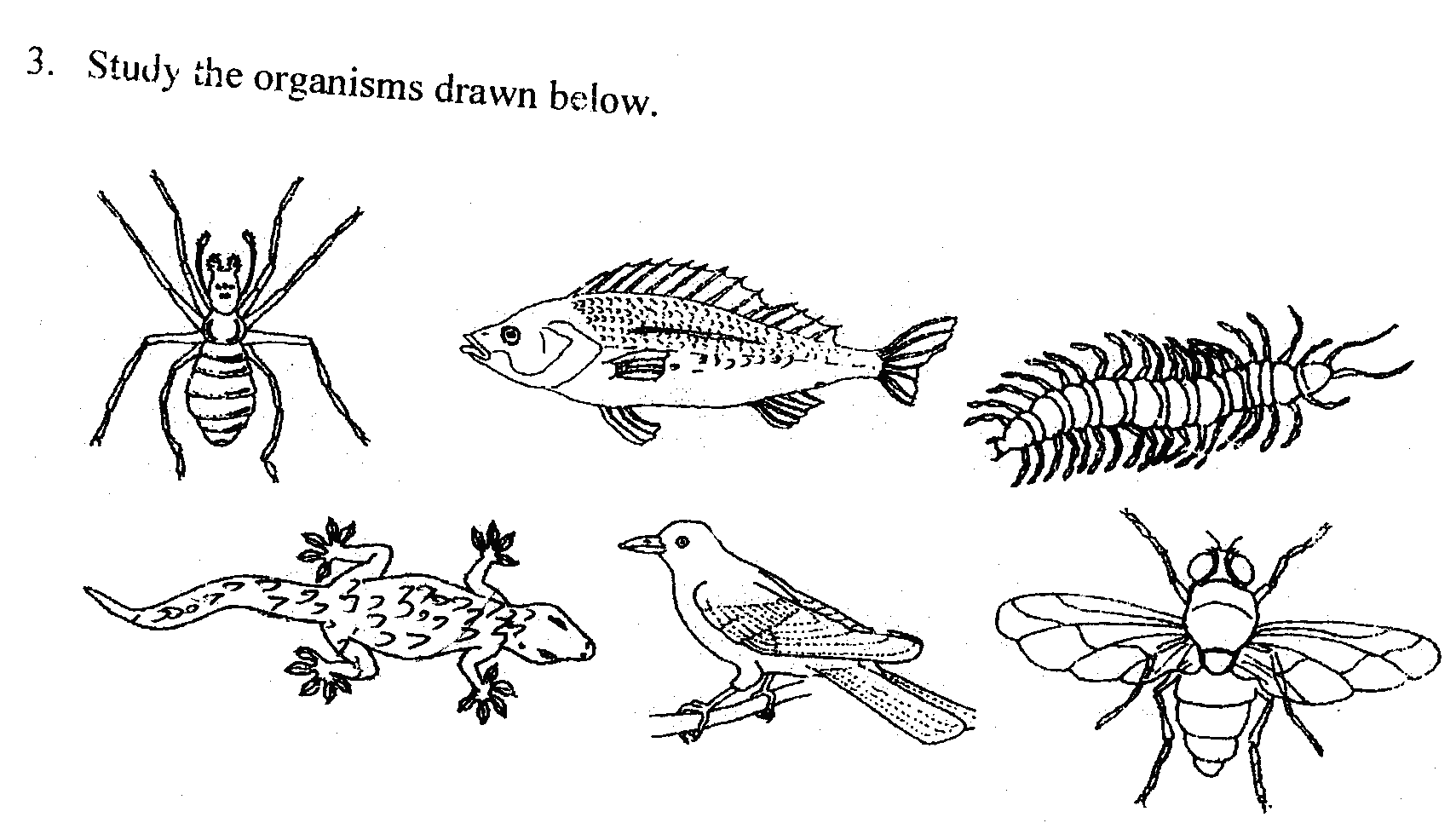
…………………………………………………………………………………………………………

(e) Using observable features only, state any **two** adaptations of the bones in photograph 3 to its functions. (2mks)

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

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

3. Complete and use the dichotomous key below to identify the organisms. (1mk)



1 a Vertebrates ………………………………………………..go to 2

b ……………………………………………………………..go to 3

2 a Has scales on the body …………………………………….go to 4

b Has no scales on the body …………………………………mammalia

3 a Has cephalothorax …………………………………………Arachnida

b Has no cephalothorax ………………………………………go to 5

4 a Has fins ……………………………………………………Pisces

b Has no fins ………………………………………………….go to 7

5 a Has three pairs of legs ……………………………………..Insecta

b Has more than three pairs of legs …………………………go to 6

6 a two pairs of legs per segment ………………………………Diplopoda

b One pair of leg per segment ……………………………….Chilopoda

7 a Has feathers ……………………………………………….Aves

b Has no feathers …………………………………………….go to 8

8 a Has a tail …………………………………………………… Reptilia

b Has no tail …………………………………………………..Amphibia

(ii) (10mks)

|  |  |  |
| --- | --- | --- |
| **Specimen** | **Steps followed** | **Identity** |
| A |  |  |
| B |  |  |
| C |  |  |
| D |  |  |
| E |  |  |
| F |  |  |