**NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CLASS\_\_\_\_\_\_ADM. NO. \_\_\_\_\_\_\_\_\_\_**

**School……………………………………………………………………………….**

**231/3**

**BIOLOGY**

**PAPER 3**

**NOV. 2020**

**MERU CENTRAL EXAMINATIONS**

**BIOLOGY**

**PAPER 3**

**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 above.*
* *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.*
* *Answers must be written in the spaces provided in the question paper.*

**For Examiner’s Use only:-**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score** |
|  1 | 14 |  |
|  2 | 13 |   |
|  3 | 13 |  |
|  TOTAL | 40 |  |

*This paper consists of* ***7*** *printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

1. Below are photographs of two specimens, **J** and **K.** Both of them belong to the same phylum and class. Observe them carefully before you answer the questions that follow.



1. Name the class to which **J** and **K** belong and support your answer with two reasons.

Class ………………………………………………………………………………….1mk

Reasons 2mks

1. …………………………………………………………………………………
2. …………………………………………………………………………………
3. Suggest why the circulatory fluid in **J** and **K** has no haemoglobin. 2mks

…………………………………………………………………………………………

………………………………………………………………………………………….

1. Observe their wings and suggest the type of evolution that could have taken place to give rise to **J** and **K**, and then give a reason for your answer.

Type of evolution …………………………………………………………………1mk

Reason ……………………………………………………………………………………

 …………………………………………………………………………………2mks

1. Below is a diagram showing the life cycle of specimen J.



1. Identify the stage labeled **D**. ……………………………………………………..1mk
2. Name the hormone responsible for the change from **D** to **A**. 1mk

………………………………………

1. Explain the differences in the change from **C2** to **C3** and from **C3** to **D**. 4mks

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

………………………………………………………………………………………….

Q2. Study the organisms below and answer questions in spaces provided .



1. 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 C, E 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

………………………………………………………………………………………

Q3.You are provided with a specimen labeled **T** which is a fruit. Use it to answer the questions that follow.

1. Make a **transverse** section of the specimen **T**. Draw and label at least 3 parts. 6mks
2. With reasons, state the identity of fruit **T.**

Type of fruit………………………………………………………………………..1mk

Reason …………………………………………………………………………………1mk

1. Suggest the possible agent of dispersal and give **two** reasons

Agent …………………………………………………………………………………1mk

Reason ……………………………………………………………………………………………………………………………………………………………………………………

2mk

1. What is the placentation of **T**? …………………………………………………….1mk
2. Specimen **T** was green in colour before it was treated with a plant hormone.

Suggest the plant hormone.

………………………………………………………………………………………1mk

END