**Name**………………………………………**Adm No**…….............

**Index Number.......**…………….......... **Date**………………........

**231/3**

**BIOLOGY**

**(Practical)**

**Paper 3**

**December 2021**

**Time: 1 ¾ hours**

**BUNAMFAN CLUSTER EXAMINATIONS 2021**

**Instructions to Candidates**

* Write your name, Admission number and your other details in the spaces provided above.
* Spend the first 15 minutes of the time allocated to read through the question paper before commencing your work
* Answer **ALL** the questions in the spaces provided.
* Additional pages must **not** be inserted
* **For Examiner's Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score** |
| **1** | **13** |  |
| **2** | **16** |  |
| **3** | **11** |  |
| **Total Score** | **40** |  |

1. You are provided with the following materials;

***Substance labelled L***

***2cm3 Copper sulphate solution***

***2cm3Sodium hydroxide solution***

***2cm3 DCPIP solution***

***2cm3 Benedict’s solution***

***Source of heat***

***3 test tubes***

***3 droppers***

You are provided with a substance labeled **L**. Make a solution of substance **L** by adding 20 ml of distilled water and stir thoroughly. Design an experiment to investigate the food materials present in **L**. (9 marks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substance** | **Chemical test** | **Procedure** | **Observations** | **Conclusion** |
| **L** |  |  |  |  |
| **L** |  |  |  |  |
| **L** |  |  |  |  |

1. State the importance of the food substances present in **L** to the human body. (2 marks)

…………………………………………………………………………………………………

…………………………………………………………………………………………………

1. Describe how the body deals with the substances mentioned in (a) above when they are in excess. (2 marks)

…………………………………………………………………………………………………

…………………………………………………………………………………………………

2**.** Study the photographs below and answer the questions that follow.





1. (i) Identify the type of response exhibited by specimen **A.** (1 mark)

…………………………………………………………………………………………………

(ii)What is the survival value of the response you have identified in (a)(i) above. (1 mark)

…………………………………………………………………………………………………

1. (i) Identify the phenomenon exhibited by specimen **B.** (1 mark)

…………………………………………………………………………………………………

(ii) State the significance of the phenomenon in (b) (i) above. (1 mark)

…………………………………………………………………………………………………

1. Explain how the response exhibited by seedlings in photograph **C** occurred. (3 marks)

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

1. Study the photograph below showing a certain trait in man.



1. Identify the trait exhibited in the photograph above. (1 mark)

…………………………………………………………………………………………

1. The trait you have identified in (d)(i) above is **sex linked**. In which chromosome is it contained. (1 mark)

…………………………………………………………………………………………

1. Name any other sex linked trait in man. (1 mark)

…………………………………………………………………………………………

1. The man in the photograph married a woman. Use a genetic cross to predict the offspring of the above marriage. Let **YH** represent the gene for the trait above. (4 marks)
2. The photographs below show certain chromosomal mutations.



1. Identify them

**P** ………………………………………………………………………… (1 mark)

**Q** ………………………………………………………………………… (1 mark)

3. Study the photographs below and answer the questions that follow.



1. Give **two visible** survival adaptive features for the organism in photograph **X.**  (2 marks)

…………………………………………………………………………………………………

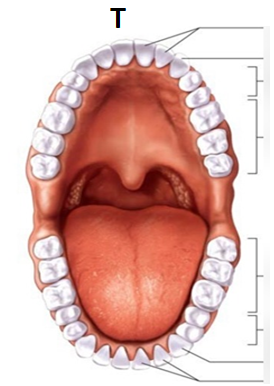
…………………………………………………………………………………………………

1. Identify the dentitions exhibited in photograph **Y** and **Z**  (2 marks)

**Y** ……………………………………………………………………………………………

**Z** ……………………………………………………………………………………………

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

1. Label any **three** parts of the tooth in photograph  **S.**  (3 marks)
2. Give **two** adaptations of the tooth to its function. (2 marks)

…………………………………………………………………………………………………

…………………………………………………………………………………………………

1. Write the **dental formula** for the teeth arrangement in photograph **T.** (1 mark)

**This is the last printed page**