**NAME....................................................................... ADM NO..........**

**DATE............................. SIGN.............................................**

231/3

Biology paper 3

(Practical)

1 ¾ HRS

DEC 2021.

***Kenya Certificate of Secondary Education 2021***

231/3

Biology paper 3

(Practical)

TIME: 1 ¾ HRS

**INSTRUCTIONS TO CANDIDATES**

* Write your name and index number in the spaces provided at the top of this page.
* Answer all the questions in the spaces provided.

**For examiner’s use only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum score** | **Candidate’s score** |
| 1 | 13 |  |
| 2 | 15 |  |
| 3 | 12 |  |
| **Total score** | **40** |  |

1. You are provided with powder Q and powder R. Measure 10ml of distilled water and put it in a boiling tube. Put powder Q in the boiling tube, shake and make a solution. Label it solution Q. Measure 10ml of distilled water and put it in another boiling tube. Put powder R in the boiling tube, shake and make a solution. Label it solution R.
2. Using the reagents provided carryout food tests on the two solutions to determine the food present in the two solutions. ( 8mks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Solution** | **Food** | **Procedure** | **Observation** | **Conclusion** |
| **Q** |  |  |  |  |
|  |  |  |  |
| **R** |  |  |  |  |
|  |  |  |  |

b (i). Which of the two food substances should be included in a diet to protect a child suffering from kwashiorkor? (1mk)

ii). Give a reason for your answer in b (i) above. (1mk)

C (i) Name two enzymes in the human body which digest the food substances found in the powder. (2mks)

ii) State the organ from which each enzyme you have stated in c (i) acts. (2mks)

1. Observe the three photographs carefully and answer the questions that follow



1. Identify the structures labeled H, J, and K (3mks)

1. Suggest the group of plant from which the root is obtained (1mk)
2. Explain the relationship found at point J (4mks)
3. Explain how the relationship benefits a farmer. (2mks)
4. State one difference between the relationships in photographs D and F. (1mk)

1. Construct one food chain from the organisms in photograph D (1mk)
2. State two disadvantages of the relationship shown in photograph F (2mks )
3. The photographs below show a certain physiological process.



**A**

**B**

**Z**

**X**

**Y**

1. Name the physiological process shown by the photographs. (1Mark)

1. Name cells X and Y. (2Marks)

X

Y

1. How is cell X adapted to function? (2Marks)

1. i) Name **two** substances that passes through part Z. (2Marks)

ii) Describe the significance of the process shown by figure A. (2Marks)

1. State three theories that explain the appearance of figure A and B. (3Marks)