BIOLOGY FORM 4 PRACTICAL PAPER 3

NAME………………………………………………………………………INDEX NO……………………..DATE…………….SIGN…………..

TIME: 1 ¾ HOURS

INSTRUCTIONS:

* Write your name, index number, date of examination, signature in the spaces provided above
* This paper consist of ……….printed pages.
* Candidates should check and acertain that all the pages are printed as indicated and that no question is missing.
* Candidates answer all questions in the spaces provided.
* Candidates should answer all the the questions in English.

1. You are provided with iodine solution, visking tubing, a beaker and solution labeled X.

Tie one end of the tubing provided with a thread tightly. Measure 5ml of solution X, pour 5ml of solution X into the visking tubing.

Tie the end of the tubing tightly. Ensure there is no leakage. Rinse the outside of the tubing with distilled water and immerse its contents in a beaker containing iodine solution. Allow it to stand for 20 minutes.

1. i) Record your observation at the beginning and end of experiment. Record your results in the table below

|  |  |  |
| --- | --- | --- |
| Experiment set up | Solution X inside the tubing | Iodine solution outside the tubing |
| Beginning of experiment |  |  |
| End of experiment |  |  |

ii) What was the identity of solution X? (1mk)

iii) State the property of visking tubing. (1mk)

iv) Account for the results obtained in (a)(i) above (4mks)

1. i) Which physiological process was being investigated in this experiment? (1mk)

ii) State three factors which affects the process the process being investigated. (3mks)

1. The picture below shows series of beaks in birds.



Using observable features in the photograph, place with reason, the class to which the above pictures belong

Class………………………………………………………………………. (1mk)

Reason………………………………………………………………… (1mk)

* + 1. State the type of evolution that may have led to the emergence of the different beaks shown on the pictures above…………………………………………………………………. (1mk)
    2. Name the type of evolution structure represented by the beaks shown on the pictures above. ………………………………………………………………… (1mk)
    3. Observe the pictures carefully. From your observations, what features are responsible for the different types of beaks?………………………………………………………………… (3mks)

b. Below are pictures from two different animals

1. What is the specific function of the two structures shown in the picture (1mk)
2. Name the class to which each image belongs

x……………………………………………………………………………………………………….. (1mk)

Y………………………………………………………………………………………………………. (1mk)

iii. What type of evolutionary structures is represented in the above pictures (1mk)

iv. Name two economic importance of animal X (2mks)

1. The photographs below show three bean seedlings that are of the same age but were grown under different environmental conditions.



1. Based on the external appearance of the seedlings, suggest the condition under which wach of them was grown.

Q

R

S

1. State two observable differences between seedling Rand S

|  |  |
| --- | --- |
| Seedling R | Seedling S |
|  |  |
|  |  |

1. State the term that is used to describe the phenomenon exhibited by specimen S and state its significance. (2mks)

Term –

Significance –

1. Name the response exhibited by seedling Q and explain how it occurs

Name – (1mk)

Explanation - (3mks)

1. State the type of germination that occurs in the three seedlings and give a reason. (2mks)

Name –

Reason -