Term 2 - 2022

BIOLOGY

(QUESTION PAPER III)

PRACTICAL

FORM FOUR

TIME: 1 ¾ HOURS

Name: …………………………………………………………. Adm No: ……………….

School: ……………………………………………………….. Class: …………………..

Signature: …………………………………………………….. Date……………………..

**INSTRUCTIONS TO CANDIDATES:**

1. Write your **name,** **index number** and **school** in the spaces provided above.
2. **Sign** and write the **date** of examination in the spaces provided above.
3. Answer all the questions in the spaces provided.
4. You are required to spend the first **15** minutes of the **1¾** hours allowed for
5. this paper reading the whole paper carefully before commencing your work.
6. This paper has **three** questions.
7. Students should check the question paper to ascertain that all the papers are printed as indicated and that no questions are missing.
8. Candidates should answer the questions in English.

**FOR EXAMINER’S USE ONLY:**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum**  **Score** | **Candidate’s**  **Score** |
| **1** | **14** |  |
| **2** | **12** |  |
| **3** | **14** |  |
| **Total Score** | **40** |  |

|  |  |
| --- | --- |
|  |  |
|  |  |

1. You are provided with visking tubing labeled **J**, a piece of thread and a solution labeled **K**.

Dip the visking tubing in distilled water to moisten it, open it, and then tie one end tightly with the thread provided.

Half-fill the visking tubing with solution **K** then tie the open end of the tubing tightly. Ensure solution **K** does not spill out of the tubing.

Immerse the visking tubing into distilled water in a beaker. Ensure that the visking tubing is completely immersed in the distilled water.

Leave the set-up for 20 minutes. Record your observations after 20 minutes.

(a) (i) Observations (1mk)

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

(ii) Explain you observations in a (i) above. (2mks)

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

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

(b) Remove the visking tubing carefully. Ensure the contents of the visking tubing do not mix with that of the beaker.Using the reagents provided, test for the food substance present in the visking tubing and the beaker.

**I. Visking tubing** (4mks)

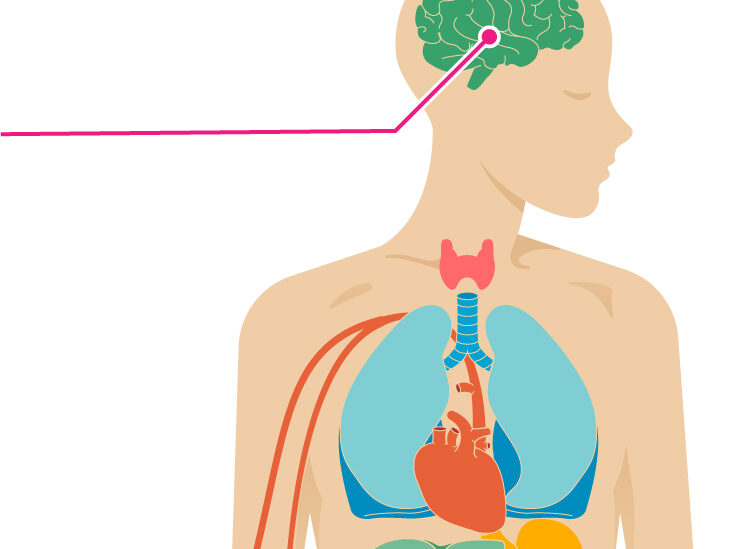
|  |  |  |  |
| --- | --- | --- | --- |
| FOOD TEST | PROCEDURE | OBSERVATIONS | CONCLUTION |
| Starch |  |  |  |
| Reducing sugars |  |  |  |

**II. Beaker** (4mks)

|  |  |  |  |
| --- | --- | --- | --- |
| FOOD TEST | PROCEDURE | OBSERVATIONS | CONCLUTION |
| Starch |  |  |  |
| Reducing sugars |  |  |  |

(c) Explain observations in the visking tubing and Beaker in 1(b) above. (3mks)

2. The photographs I and II below illustrate parts of mammalian systems. Study them and answer the questions that follow.



**PHOTOGRAPH I**

M

L

Z

Y

X



N

**PHOTOGRAPH II**

P

(a) Identify the two mammalian systems shown above. (2mks)

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

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

(b) Name the membrane that covers part marked P and Z. (2mks)

P…………………………………………………………………………………………………………………………………

Z…………………………………………………………………………………………………………………………………

(c) Describe two ways by which organ P and Z are protected. (2mks)

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

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

(d) How is the part labelled Y adapted to perform its function. (2mks)

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

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

(e) Identify the part labelled N. (1mk)

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

(f) State the difference in the content of blood in L and M. (1mk)

|  |  |
| --- | --- |
| L | M |
|  |  |

(g) State the role of the inner part of X in ensuring a healthy system. (2mks)

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

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

3. You are provided with specimens labeled S1 , S2 and S3

1. Using a scalpel blade split S1 longitudinally and draw a well labeled diagram to show the internal structures. (4mks)
2. With a reason, state the class of the plant from which specimen S1 was obtained.
3. Class (1mk)

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

Reason (1mk)

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

1. Specimen S2 is a germinated seedling of S1.

In the table below, name three structures of S1 and identify the structures they developed into in specimen S2 (3mks)

|  |  |
| --- | --- |
| **Structure in S1** | **Structure developed into, in S2** |
| 1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. i) Using specimens S2 and S3 ,name the type of germination. (2mks)

S2 ……………………………………………………………………………………………………………………….

S3 ……………………………………………………………………………………………………………………….

ii) Give a reason for your answer in S3 above. (2mks)

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

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

iii) Account for the type of germination in S2  (2mks)

…………………………………………………………………………………………………………………..,..

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