**BIOLOGY PP2 FORM THREE TERM**

**THREE 2023**

**TIME: 2HRS**

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

1. During an ecological study, form three students encountered three plant species: **X**, **Y** and **Z**. The students recorded the main features of each plant species, as shown below

**X**: - Leaves with broad lamina and with large air spaces

- Many stomata on the upper epidermis

**Y**: - Leaves with broad lamina

- Long flexible stems with tendrils

**Z**: - Large buttress roots

- Pneumatophores

1. State the possible habitat of each plant

**X**...................................................................................................................................... **(1 mark)**

**Y**...................................................................................................................................... **(1 mark)**

**Z**...................................................................................................................................... **(1 mark)**

1. State the significance of the following:
2. Numerous stomata on the upper epidermis in plant **X (1 mark)**

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1. Broad leaves in plant **Y (1 mark)**

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1. Buttress roots in plant **Z (1 mark)**

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1. Give **two** problems faced by plant **X** in its habitat **(2 marks)**

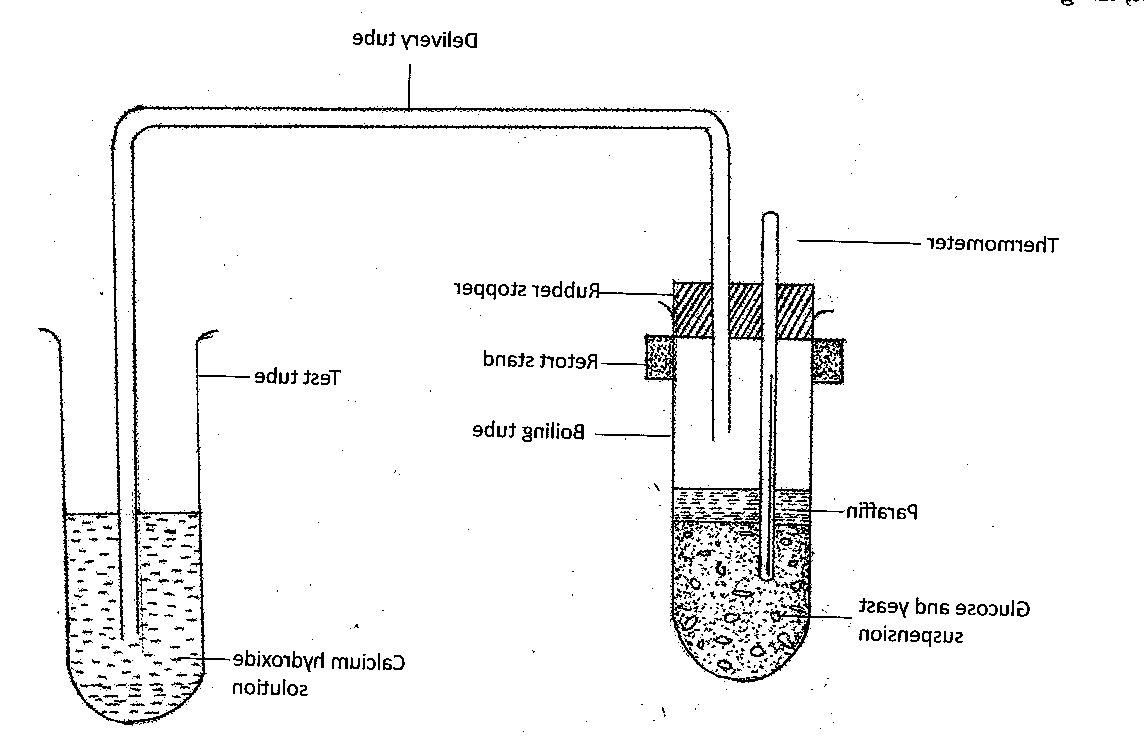
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1. The set up below illustrates an experiment to demonstrate a certain biological process, before the addition of the yeast suspension the glucose solution was first boiled and then cooled at 40oC.



a) What was the aim of the experiment? (1mk)

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b) What observations would you make in the tubes a few minutes after the experiment begun (2mks)

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c) Explain the observations made in (b) above (2mks)

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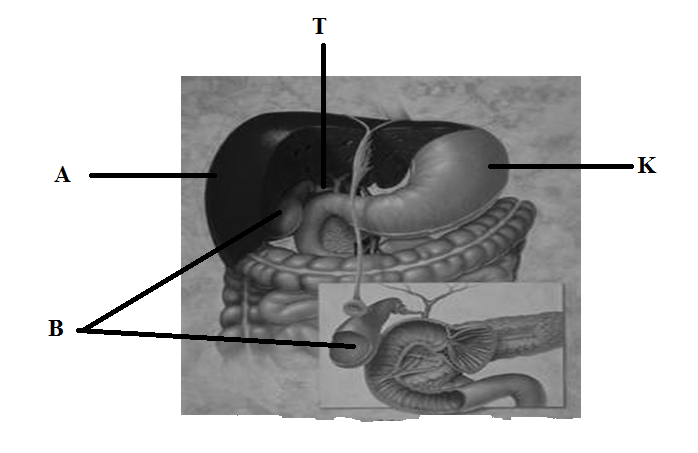
d) Why was glucose solution boiled before cooling at 40oC (1mk)

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e) How can you set up a control experiment for the above (1mk)

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1. . Use the photograph of mammalian digestive system and associated organs to answer the questions that follow.



(i) Name the structures marked **A**, **B**, **K** and**T**. (4marks)

**A**……………………………………………………………………………………………….**B**……………………………………………………………………………………………….**K**……………………………………………………………………………………………….**T**………………………………………………………………………………………………..

(ii) Name an acid found in the structure labelled **K**. (1mark)

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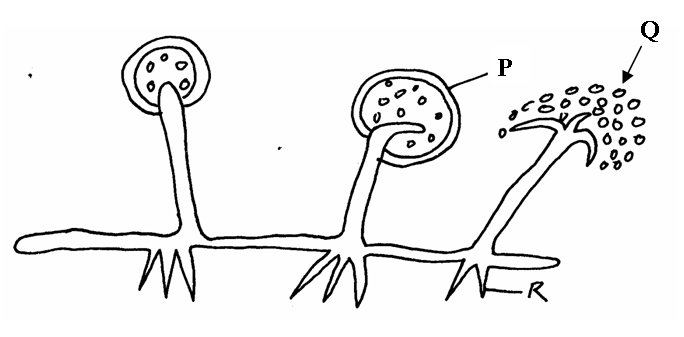
(iii) Name the juice stored in the structure labelled **B** and give its function. (2marks)

Juice…………………………………………………………………..…………………..

Function………………………………………………………………………………………………………………………………………………………………………………………...…………………………………………………...………………………………………………………………………………………………....................................................…

(iv) Label with letter **D** part where function named in (iii) above takes place. ( 1 mark)

1. The diagram below represents a mature bread mould (Rhizopus)



(a) Name the structures P, Q and R (3mks)

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(b) What is the function of the structure P? (1mk)

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(c) State **two** economic importances of moulds (2mks)

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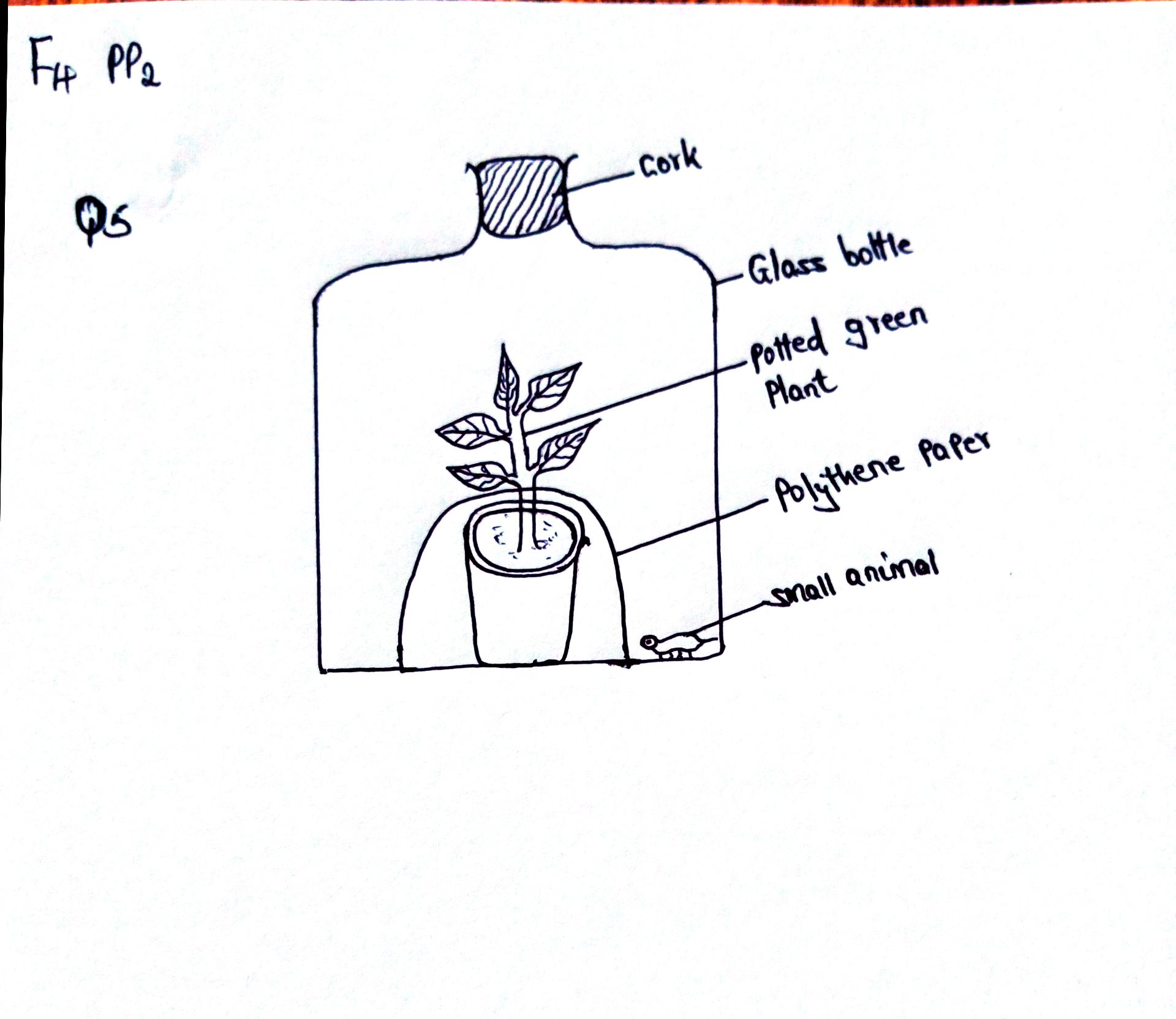
(d) (i) Name the kingdom to which bread mould belong (1mk)

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(ii) List down **one** general characteristic of member of the kingdom named in d (i) above.

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1. An experiment was set up to investigate a factor in autotrophism in green plants.



Vaseline was applied at joint between the cork and the mouth of glass bottle and set up was left under sunlight for 6 hours.

1. Why was it necessary;
2. To apply Vaseline (1mk)

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1. To cover the pot with polythene paper (1mk)

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1. What was the purpose of including the small animals? Give two reasons. (2mks)

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1. i) What would happen to the small animal if the set up was left over night in darkness

(1mk)

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ii)Account for the answer in b (i) above (1mk)

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1. State the respiratory surface of the following organism (2mks)
2. Amoeba

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1. Fish

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**SECTION B (40MARKS)**

Answer question 6 (compulsory) then choose any between question 7 and 8

1. A research was carried out to determine the trend of growth of some boys and girls. Their average mass in kilograms was taken separately for a period of 20 years and tabulated as shown in the table below.

|  |  |  |
| --- | --- | --- |
| Age | Average mass of boys (kg) | Average mass of girls (kg) |
| 0 | 2.5 | 2.5 |
| 2 | 11.5 | 11.5 |
| 4 | 15.0 | 16.0 |
| 6 | 18.5 | 19.3 |
| 8 | 22.1 | 27.1 |
| 10 | 25.1 | 27.1 |
| 12 | 27.5 | 30.5 |
| 14 | 37.0 | 35.5 |
| 16 | 44.0 | 44.0 |
| 18 | 46.9 | 52.0 |
| 20 | 48.5 | 55 |

On the same axis draw a graph of the average mass of the girls and boys against age (7mks)



1. From graph, determine the:
2. Mass of boys at the age of 11 years (1mk

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1. Growth rate of girls between ages 13 and 15 (3mks)

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1. Account for the change in the mass of girls during the age stated in ( ii) above (2mks)

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1. Explain the trend observed in the curves for both boys and girls (2mks)

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1. Why do girls above 10 years require intake of food that richer in iron than boys of the same age (2mks)

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1. Apart from using average mass to estimate growth in human beings name two other parameters that can be used (2mks)

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1. a) Describe the mechanism of inhalation and exhalation in mammals (14mks)

(b) Explain **three** factors that affect rate of breathing (6mks)

1. a) Describe the process of double fertilization in flowering plants. (15 mks)

b) Describe what happens to the various parts of a flower after fertilization. (5 mks)

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