

ALLIANCE INTEGRATED SECONDARY SCHOOL
S2 END OF TERM TWO ASSESSMENT
Biology(theory) paper one
Duration 2hrs

Instructions.

- ★ This paper consists of two sections A and B. Section A contains two compulsory items, answer in the spaces provided. Section B contains three items. Attempt only two items, answers to be written on the answer sheet(s) provided.
- ★ Attempt four items in all.
- ★ Be neat

SECTION A

Item 1

Living organisms are made up of organism cells which carryout life processes. Both plants and insects possess cells. In one of the biology lessons about cells, students examined animal and plant cells marked in the microscope.

Task.

- a) State any five structural difference between animal and plant cells that were observed.
(5maks)

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- b) In a blood smeared on a glass slide mounted on the microscope, specialized cells were observed

- i. Identify any three specialized cells in the blood smear. (03 marks)

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- ii. State the roles played by each specialized cell carried in (i) above. (03 marks)

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- c) State any two examples of plant specialized cells and their roles. (04 marks)

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Item 2

During a research study by a group of physiologists, it was discovered that certain materials can enter or exit cells. The entry or exit of these materials was found to be under the control of the cell membrane. They also discovered that these materials enter or leave the cells by certain processes which they noted in their research report.

Task.

- a) (i) Explain how the cell membrane controls entry and exit of materials into or out of the cell. (02marks)

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- (ii) State why it's important for movement of materials in and out of cells. (03marks)

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- b) Apart from diffusion, name any other two processes by which material enter or exit cells. (01mark)

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- c) Describe how the following factors affect the process of diffusion.

- (i) Temperature (02 marks)

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- (ii) Concentration gradient. (02marks)

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SECTION B (attempt any two items)

Item 3.

In essence, to understand the effect of different foods we eat on our health, JASPER and YAWA, who are students in Form Two, took measurements of height (m) and weight (kg) of two students, X and Y. Then after, they compared their results with the standard body mass index (BMI) courtesy of World Health Organization (WHO), their results were recorded in the table below.

Table

Student	Weight(kg)	Height (m)
X	58	1.97
Y	65	1.45

Standard body mass index (BMI)

Status	Ranges of values
Under weight	Below 18
Normal	18.0 to 24.9
Overweight	25.0 to 29.9
Obese	Above 30.0

Task.

Based on the above project findings, apply your skills, understanding and the knowledge obtained from nutrition studies, to show students X and Y, the likely health impact of their nutritional behavior. And advise them accordingly.

(15scores)

Item 4

Through transpiration, plants are able to get rid of excessive water from their leaves, because water vapour escapes to the atmosphere through certain routes from the plant. However, transpiration is affected by some environmental factors that either increase or decrease the rate of transpiration. You are required to identify some factors affecting rate of transpiration.

Task

- a) (i) Outline two routes through which water vapour can escape from the plant. (01mark)
- (ii) State the process through which water vapour escapes from the leaves (01mark)
- b) (i) Recall and state two conditions that easily dry clothes when we wash and hung our clothes to dry. (02marks)
- (ii) How do you think one of the conditions help to dry clothes? (02marks)
- c) (i) Using that knowledge from b) above, state two factors that can increase the rate of transpiration. (02marks).
- (ii) Explain the importance of transpiration to man. (02marks)

Item 5.

Crop growing is one of the major activities practiced by people living along the shores of L. Victoria. During heavy rains, a lot of water flows from the mainland into the Lake and some remain logged in environment where people live. During this time, most people are reported with malaria, crops give low yields than expected. Farmers in Kigezi highlands also face the same challenge of low yields during same season.

Task.

Explain the causes leading to challenges in these areas and suggest possible solutions to overcome them. (15 scores)

THE END