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BIOLOGY

(Theory)

Paper 1

July/Aug. 2024

2½ hours

SECONDARY SCHOOLS JOINT MOCK EXAMINATIONS, 2024

Uganda Certificate of Education

BIOLOGY

(THEORY)

Paper 1

2 HOURS 30 MINUTES

INSTRUCTIONS TO CANDIDATES:

This paper consists of seven examination items.

It has two sections A and B.

Section A has three compulsory items.

Section B has two parts I and II. Answer one item from each part.

Answer five items in all.

Any additional item(s) answered will not be scored.

Responses to Section A must be written in the spaces of the examination paper provided.

Advice:

Read each the items carefully before you start your response

Section	Item	Scores	Examiner's Signature
A	1		
	2		
	3		
B	4		
	5		
	6		
	7		
TOTAL			

SECTION A

1. Okello is a bright student but very naughty in class. He likes making noise and disturbing others in the class room. His class teacher recommended that he sits on the front row near the chalk board for close monitoring of his discipline but the problem is that he cannot see the writings on the chalk board and he also complains of pain in his eyes when he strains them to see the work in his book. However, when he is at the back of the class, he is able to see very well. The class teacher has called Okello's parents to see how well to help him.

TASK

- (a) Using scientific facts, explain Okello's problem to his parents.

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- (b) Identify the causes and effects of the problem.

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- (c) Using illustrative diagrams clearly explain to the parents how Okello's problem can be managed.

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2. Mr. Akankwatsa is a very successful and wealthy businessman though he did not go far in his education. He has been married for 9 years and produced four children, only girls. Mr. Akankwatsa blames his wife for producing only girls, and starts engaging in extra marital affairs. After some time he developed an ailment, went to a health facility, which after some tests were carried out confirmed that he was HIV positive.

TASK

- (a) Advise Mr. Akankwatsa that he is also responsible for producing only girls in the marriage with his wife.

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- (b) What are the likely symptoms possessed by Mr. Akankwatsa as a result of his health status?

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- (c) How can he manage life with his health status?

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3. Kato brews "tonto" a local alcohol drink for money to pay his son's school fees. The 'tonto' is kept in plastic jerrycans. Kato's son observes that the jerrycan bulge and feel slightly warmer during the day than at night with some hissing sound heard inside the jerrycans.

TASK:

- (a) Identify the raw materials Kato uses to make the “tonto” and the condition(s) required for the conversion of the raw materials into the “tonto”.

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- (b) Explain to Kato’s son how the following observations arise; bulging jerrycans being warmer during the day than at night and the hissing sound in the jerrycans.

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SECTION B

Part I

4. Mr. Mukasa cleared a forest along the slopes of a hill that had fertile soils to extend his farm for growing maize. After several years of planting maize on his farm, the maize plants he planted started to grow slowly with yellow leaves which generally reduced the maize yields. Yields are poorer at the hill top than in the valley. Also residents of this village use of the valley of Mr. Mukasa’s farm for dumping plastic bottles and used “kavera” (polythene bags) which has caused more challenges especially in the streams found in the valley.

TASK:

Explain the likely effects of the actions of Mr. Mukasa and the residents of his village and suggest possible ways these effects can be overcome. What is the importance of conservation of the valleys?

5. Sakwo village farmers are proud of organic pesticide free vegetables they grow due to their fertile soil. However, this season the tomato plants are stunted with a few small fruits despite adequate rainfall and sunshine the area has received. Farmers are worried about their harvest that is likely to be so low which will greatly affect their livelihood.

TASK:

Using your knowledge on plants, explain to these farmers the causes of this problem and give advise on how they can solve it.

Part II

6. After a morning heavy carbohydrate meal, Peter, an athlete started to warm up in preparation for the competition in a long race. He competed favorably but towards the end, he developed muscle cramps and was breathing heavily. Nonetheless he endured and finally won the race. After the race his heavy breathing continued while the muscle cramps receded progressively. He even managed to walk back home without any help.

TASK:

Explain how Peter's body utilized the morning meal to enable him win the competition and analyze the challenges his body encountered during the race and how he overcame them to enable him walk back home.

7. A 10 year old boy developed the following symptoms, fluid retention and a swollen distended stomach, low body weight and brown hair. Parents believe that his health condition is due to lack of appetite. The doctor has advised that they include fish in the child's diet.

TASK:

Explain to the parents the cause of their boy's health status and how by including fish in the diet of the child will help solve the problem.
What will happen to the fish when eaten by the boy?