

**SESEMAT MBARARA REGION**  
**END OF YEAR ASSESSEMENT 2023**

**SENIOR THREE**

**BIOLOGY**

**Time: 2 Hours**

Learner's Name.....Signature.....

School ..... stream.....

**Instructions**

- This paper is comprising of two sections **A** and **B**
- Attempt all questions in both sections
- Answers to section **A**, should be written in spaces provided.
- Answers to section **B**, should be written on the answer sheets provided.

**SECTION A (50 scores)**

1. During a biology lesson in S.2 class, students were asked to take their measurements for mass and height. Marion aged 15 years and a member of that class was 60kg and 142cm tall. When Marion mentioned her measurements everybody in class laughed. Marion started crying and went out of the class.

**Support material**

Standard body – mass index (BMI)

BMI	Interpretation
< 18.5	Underweight
18.5 to 24.9	Normal/ideal weight
25 to 29.5	Overweight
30 to 35	Obese
> 35	Gross obesity

Supposing you are Marion's biology teacher, prepare guidelines you would use to help her overcome the problems. (10 scores)

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2. David a S.3 student at Nyamahembe S.S, arrived late for term III. He only found back seats in class vacant. Later, the Biology teacher noticed that David was copying notes from the neighbour. He told the teacher that he wanted to sit in front because he could not see words on the chalkboard properly as they were blurred. On shifting him to the front seat, David could see clearly and copy work from the chalkboard.

- a) What condition did David have in his eyes that made him fail to see words on the chalkboard from the behind seat? (1 score)

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- b) Explain the cause of the condition you have mentioned in 2 a) above (5 scores)

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- c) How can David's condition be corrected?  
Use a diagram to illustrate your answer.

(4 scores)

3. In brewing, sugar (glucose) and yeast are the most commonly used raw materials. During the process, sugar is mixed with yeast in regulated proportions and the mixture is maintained at a pH between 4.0 and 5.5. The rate of reaction that occurs can be determined by measuring the amount Carbon dioxide produced in a given time.

The graph in figure 1 shows the effect of temperature on the amount of carbon dioxide produced in 1 minute.

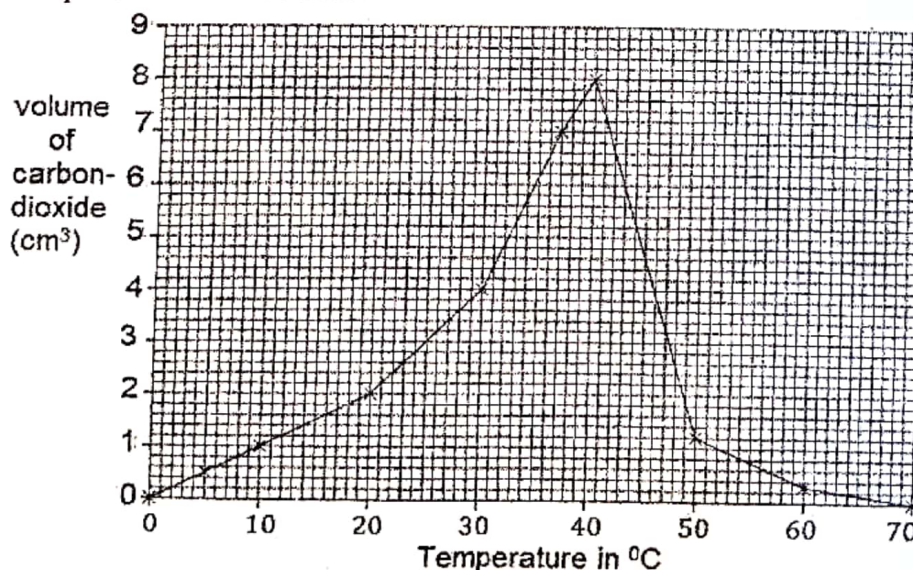


Figure 1

- a) Give an explanation for the volume of carbon dioxide produced at;  
(i)  $5^{\circ}\text{C}$  (3 scores)

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- (ii) At  $40^{\circ}\text{C}$ , (3 scores)

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- (iii) At  $70^{\circ}\text{C}$ . (2 scores)

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- b) Suggest two ways of increasing the amount of alcohol produced in process above;  
(2 scores)

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5. Figure 2 below shows a diagram of a structure of part of human body organ that was observed by medical students.

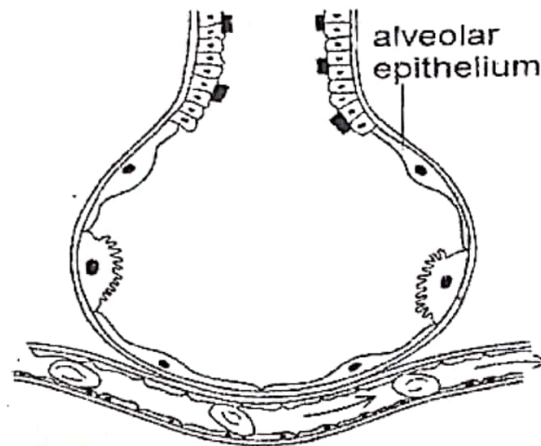


Figure 2

- a) Identify the human body system from which it was obtained. (1 score)

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- b) What is the function of the structure in figure 2 above in the human body? (1 score)

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- c) How is the structure above adapted to perform the function you have stated in b) above? (6 scores)

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- d) Explain one human practice that may decrease the ability of the structure above to perform its function. (2 scores)

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4. S.1 learners at Maranatha Secondary School, carried out an ecological study in which they examined and documented features of one of the organisms they came across. They labelled the organism as A and based on its external structural features to classify it in the hierarchy below.

Kingdom: Animalia

Phylum: Arthropoda

Class: Insecta

Order: Hymenoptera

Family: Apidae

Genus: Apis

Species: Merifera

- a) Identify three structural features that the learners might have based on to classify organism A under the class and phylum shown in the hierarchy above.

Structural features for;

- (i) Phylum (3 scores)

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- (ii) Class (3 scores)

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- (b) Write the scientific name of organism A following rules of Binomial

Nomenclature. (4 scores)

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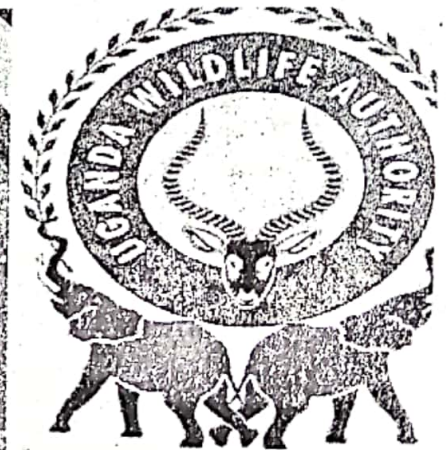
### SECTION B (30 Scores)

6. John got an accident which damaged his testes at the age of 3 years in 2000. In January 2017, John observed his male agemates having beards and deep voices which they never had in early childhood. Contrary to what he observes on his male agemates, John has a soft voice and no beards. His agemates tease him. This greatly affected his self-esteem. He is also worried that he might have been bewitched by somebody.

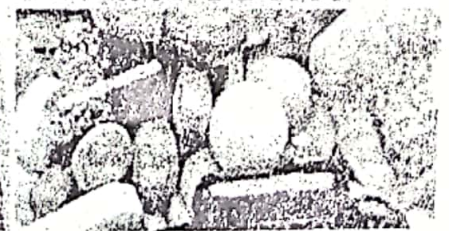
John runs to you to help him understand his situation.

As a student who has studied coordination in animals, write a letter to John that will help him understand his challenge and possibly find a solution. (15 scores)

7. NCDC, a body that formulates and reviews curriculum in Uganda conducted a survey on people's views about the New Lower Secondary Curriculum. The study focused mainly on the applicability of Biology in daily life.



**PHARMACEUTICAL  
INDUSTRY**



Suppose you were one of the citizens who were approached by NCDC during the above study, write a report giving your views about the application of the subject mentioned above in daily life (15 scores)

END