

FORM TP 02025085



TEST CODE 01253020

MAY/JUNE 2025

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE®
EXAMINATION

HUMAN AND SOCIAL BIOLOGY

Paper 02 – General Proficiency

2 hours

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of SIX questions in TWO sections.
2. Answer ALL questions.
3. Write your answers in the spaces provided in this booklet.
4. Do NOT write in the margins.
5. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
6. **If you use the extra page(s), you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Copyright © 2024 Caribbean Examinations Council
All rights reserved.

01253020/MJ/CSEC 2025



0 1 2 5 3 0 2 0 0 3



SECTION A

Answer ALL questions.

1. (a) Define EACH of the following terms, according to the World Health Organization (WHO).

(i) Health

.....
.....
.....
.....

(2 marks)

(ii) Disease

.....
.....
.....
.....

(2 marks)

(b) State TWO causes of **noncommunicable** diseases.

.....
.....
.....
.....

(2 marks)

906

A000

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.



(c) Long Covid occurs where patients continue to experience the effects of COVID-19 for extended periods after recovery. Figure 1 shows the signs and symptoms of long Covid and its prevalence in patients.

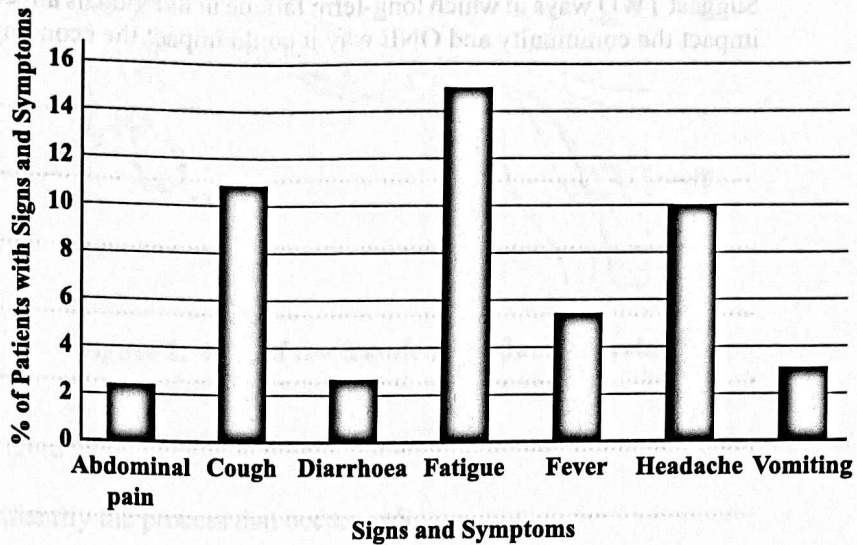


Figure 1. Graph showing patients with signs and symptoms of long Covid

From the graph in Figure 1,

(i) identify TWO signs and TWO symptoms that patients with long Covid experience

Signs

.....
.....

Symptoms

.....
.....

(4 marks)

(ii) identify the MOST common sign or symptom that long Covid patients experience

.....

(1 mark)

(iii) identify the LEAST common sign or symptom that long Covid patients experience.

.....

(1 mark)

GO ON TO THE NEXT PAGE

01253020/MJ/CSEC 2025

01253020/MJ/CSEC 2025



0 1 2 5 3 0 2 0 0 5



2. Figure 2 shows two processes, S and T, which occur in the female reproductive system.

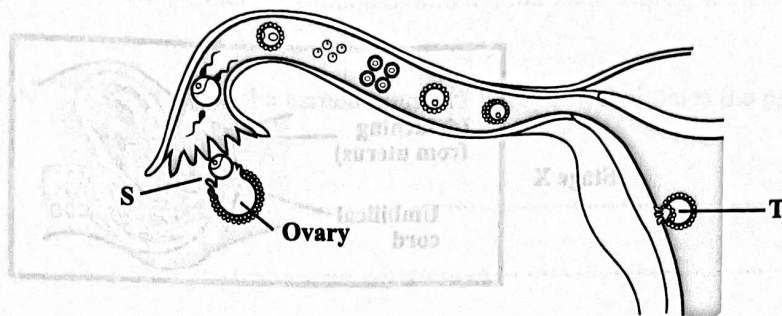


Figure 2. Part of the female reproductive system

(a) Using Figure 2,

(i) identify the process that occurs at S

.....
(1 mark)

(ii) state the day of the menstrual cycle in which the process identified in (a) (i) typically occurs

.....
(1 mark)

(iii) describe the process that is occurring at the region labelled T.

.....
.....
.....
(2 marks)



(b) Figure 3 shows three stages, labelled X, Y and Z, which occur during the process of childbirth. The stages are NOT in the correct order.

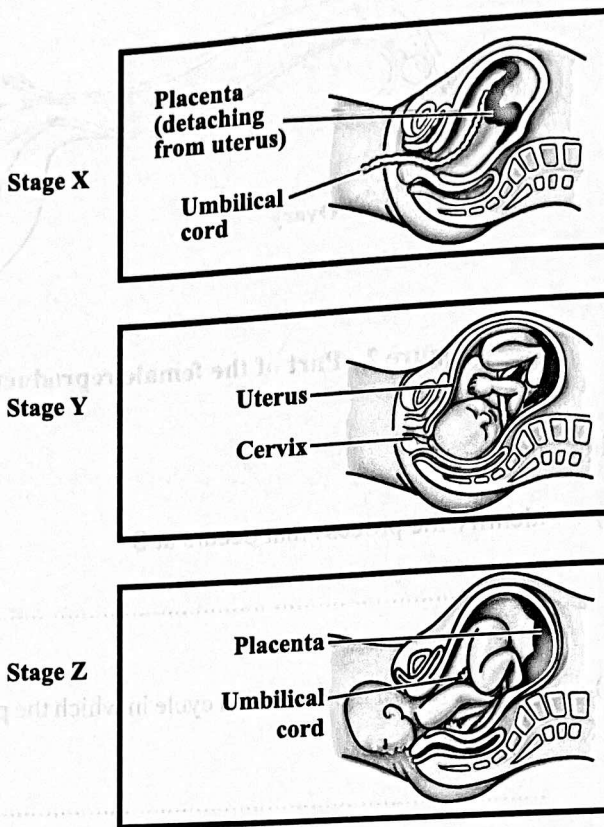


Figure 3. Stages during childbirth

(i) Using the letter labels only, place the stages of childbirth in Figure 3 in the correct order.

(2 marks)

(ii) Briefly explain what occurs during the second stage of childbirth.

(3 marks)



(iii) Name the hormone which is released throughout the duration of childbirth.

(1 mark)

(iv) Explain how the named hormone in (b) (iii) facilitates the process of childbirth.

(4 marks)

(v) Identify ONE component of the afterbirth.

(1 mark)

Total 15 marks

GO ON TO THE NEXT PAGE



3. (a) Identify the number of sets of chromosomes contained in a haploid human cell and a diploid human cell.

Haploid

Diploid

(2 marks)

(b) State the term which characterizes EACH of the following definitions in the table below.

(i) A very long molecule of DNA that contains the genetic material of the cell.	
(ii) Short sections of DNA that contain information for a particular trait.	

(2 marks)

(c) Taxines are drugs that inhibit mitosis by preventing the movement of chromatids in the cell.

(i) Define the term 'mitosis'.

(2 marks)

(ii) Identify TWO stages of mitosis that will NOT occur as a result of the action of taxines.

(2 marks)

(iii) Suggest ONE process that will NOT occur in the body as a result of the action of taxines.

(1 mark)



DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

906

A000

(d) Figure 4 shows a sickle cell pedigree. Each individual in the pedigree is labelled 1–10.

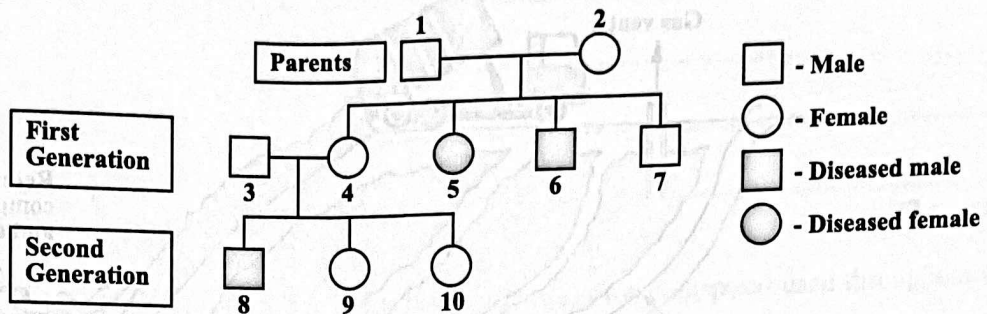


Figure 4. A sickle cell pedigree

From Figure 4, identify

- (i) the TWO individuals in the first generation who are carriers of the sickle cell trait. Justify your response.

.....
.....
.....
.....
(4 marks)

- (ii) ONE individual in the parental generation who has the heterozygous genotype $H^A H^S$.

.....
(1 mark)

- (iii) ONE individual in the first generation who has the homozygous recessive genotype $H^S H^S$.

.....
(1 mark)

Total 15 marks

GO ON TO THE NEXT PAGE



4. Figure 5 shows a waste disposal method used throughout the Caribbean.

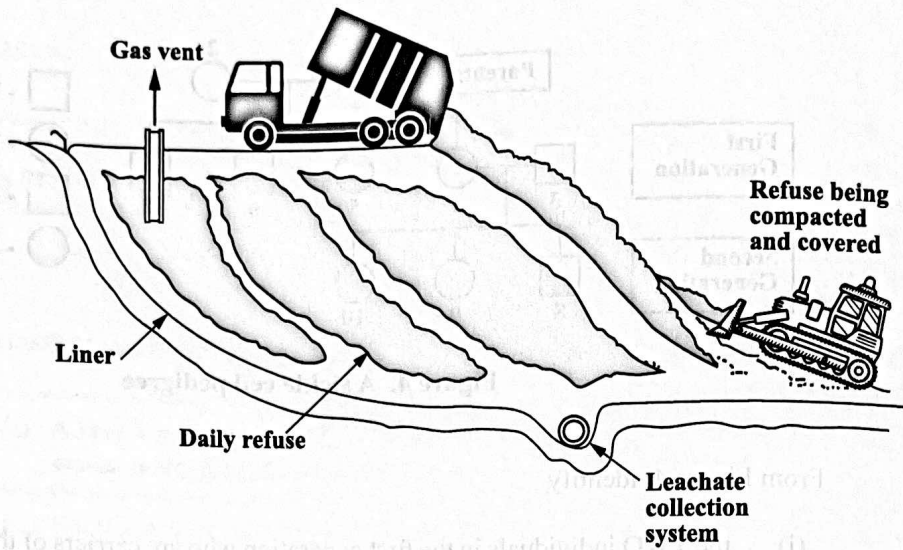


Figure 5. Waste disposal method

(a) Using Figure 5,

(i) identify the type of waste disposal method shown

(1 mark)

(ii) state the role of EACH of the following components.

- Gas vent

- Liner

(2 marks)



(c) Recommend THREE ways in which citizens could reduce the amount of solid waste that requires disposal.

.....
.....
.....
.....
.....
.....

(3 marks)

Total 15 marks

906

A000

GO ON TO THE NEXT PAGE

01253020/MJ/CSEC 2025



SECTION B

Answer ALL questions.

5. (a) A woman screams for help at a restaurant because her husband has suddenly fallen to the floor. He is not breathing and is unconscious. Vincent, who has CPR training, shouts for the waiter to call the ambulance while turning the man onto his back on the floor.

(i) List the NEXT four steps in cardiopulmonary resuscitation (CPR) that Vincent should use to assist the husband.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(4 marks)

(ii) State the TWO benefits of using a disposable device when applying mouth-to-mouth resuscitation.

.....

.....

.....

.....

(2 marks)



(c) The hookah is a water pipe used to smoke flavoured or sweetened tobacco. Hookah smoking usually occurs in groups where the same mouth piece is passed from one user to another. Some individuals believe that this practice is a safer method of using tobacco as compared to smoking cigarettes.

Suggest FOUR reasons why hookah use is just as or more harmful than smoking cigarettes.

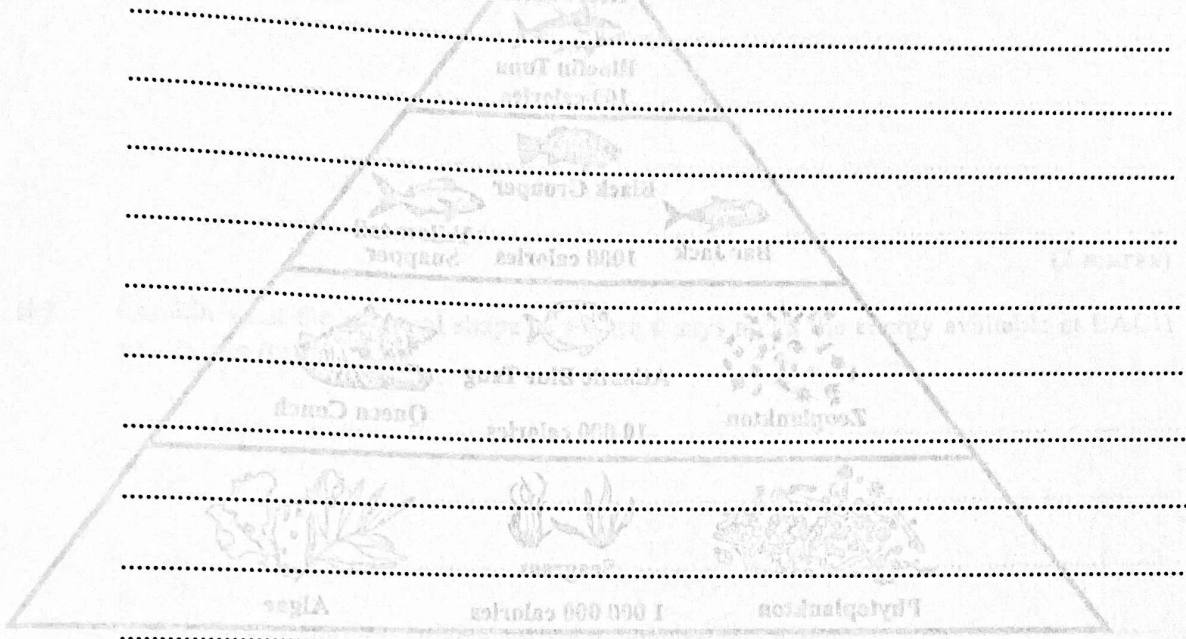


Figure 6. A marine ecosystem

Using Figure 6

(i)

Identify the type of pyramid shown in Figure 6.

(ii)

Identify ONE carnivore and ONE herbivore.

(4 marks)

Total 15 marks

GO ON TO THE NEXT PAGE



DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

6. Figure 6 shows a diagram of a marine ecosystem.

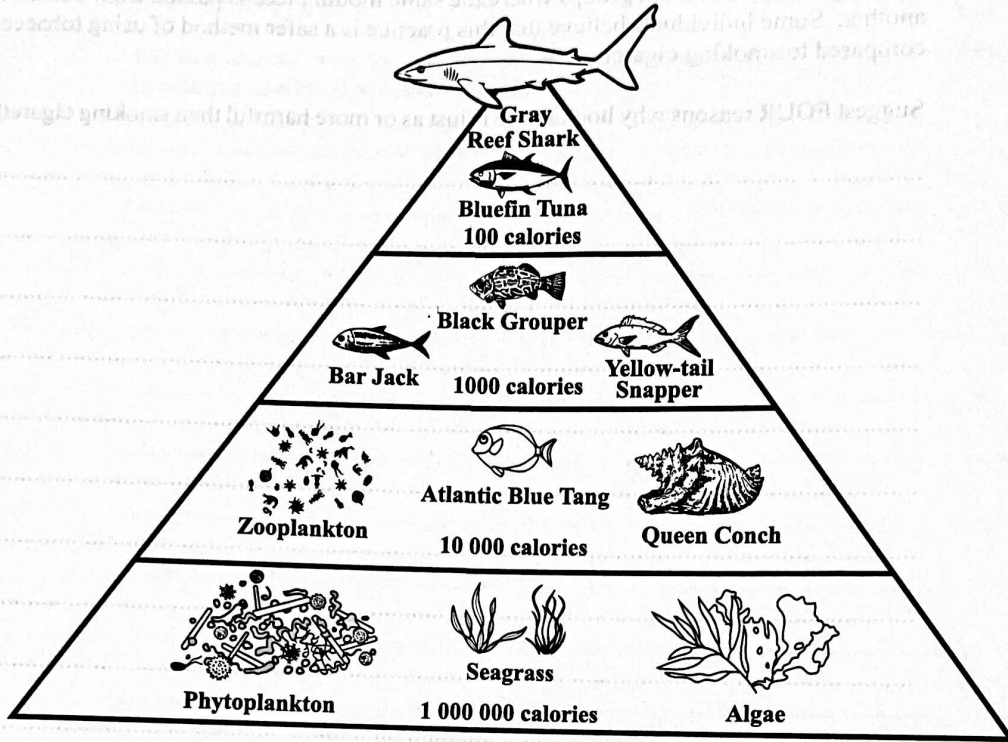


Figure 6. A marine ecosystem

(a) Using Figure 6,

(i) identify the type of pyramid shown

.....
(1 mark)

(ii) identify ONE carnivore and ONE herbivore

Carnivore

Herbivore

.....
(2 marks)



A000

906

A000

906

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

(iii) identify ONE producer

(1 mark)

(iv) explain why producers are essential for the success of the ecosystem.

(2 marks)

(b) Explain what the pyramid shape of Figure 6 says about the energy available at EACH successive trophic level.

(3 marks)

(c) (i) Define the term 'bioaccumulation'.

(2 marks)

GO ON TO THE NEXT PAGE



DO NOT WRITE IN THIS AREA

906

A000

0000

(ii) The marine ecosystem in Figure 6 is contaminated by heavy metals from a nearby industry. Identify the organism in Figure 6 which would have the greatest concentration of heavy metals and discuss the risk of its consumption to human health.

(10 marks)

.....
.....
.....
.....
.....

(2 marks)

(b) Explain what the pyramid shape of Figure 6 says about the energy available in EACH trophic level.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

(3 marks)

.....
.....
.....
.....
.....
.....
.....
.....

(4 marks)

Total 15 marks

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.

01253020/MJ/CSEC 2025



DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

906

A000

906

A000