

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2025

ORDINARY LEVEL

Centre Number	
Centre Name	
Candidate Identification Number	
Candidate Name	

Mobile phones are NOT allowed

Duration: One and a Half Hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed “**Ordinary Level – 0510 BIOLOGY 1**”
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Examination Session, Subject Code and Candidate Number.

Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination

6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
7. Non-programmable calculators are allowed.
8. Each question has **FOUR** suggested answers: **A, B, C** and **D**. Decide on which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if **C** is your correct answer, mark **C** as shown below:
[A] [B] [C] [D]
9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
11. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
12. **At the end of the examination, the invigilator shall collect the answer sheet and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

SECTION I
Questions 1-7
(Seven questions)

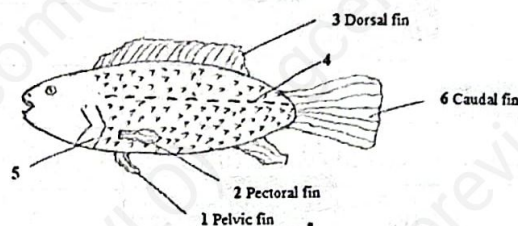
Directions: Each of these questions or incomplete statements is followed by four suggested answers. Select the best answer in each case and mark the answer sheet appropriately.

1. In which organ of the human body are bile salts produced?
 A Pancreas.
 B Duodenum.
 C Gall bladder.
 D Liver.
2. Which of these organisms will occupy the first trophic level in an ecosystem?
 A Cabbage.
 B Caterpillar.
 C Earthworm.
 D Beetle.
3. Which of the following is the causative agent for malaria?
 A Female Anopheles mosquito.
 B Culex mosquito.
 C Plasmodium.
 D Male anopheles mosquito.
4. The streamline body of the bird enables it to:
 A Capture prey easily.
 B Reduce air resistance during flight.
 C Reduce weight during flight.
 D Perch on tree branches with ease.
5. Comparing inspired and expired air, expired air:
 A Is warmer.
 B Contains no oxygen.
 C Is dry.
 D Is richer in nitrogen.
6. Which of the following is an air pollutant?
 A Herbicides.
 B Refuse.
 C Sewage.
 D Noise.
7. A food sample was tested with Millon's reagent and a pink coloration was observed. The food sample contains:
 A Starch.
 B Lipid.
 C Reducing sugar.
 D Protein.

SECTION II
Questions 8 – 20
(Thirteen questions)

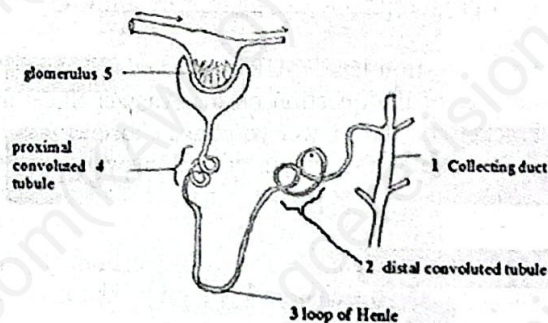
Directions: This group of questions relates to biological diagrams. Select the best answer for each question.

8. The diagram below is that of a bony fish.



Which numbered parts control pitching of the fish in water?

- A 1 and 2.
 B 2 and 6.
 C 2 and 3.
 D 6 and 3.
9. The structure in the mammalian eye that contains light sensitive cells is:
 A Lens.
 B Blind spot.
 C Choroid.
 D Retina.
10. How does the structure of the artery help in its function?
 A Thin elastic walls.
 B Thin muscular walls.
 C Thick elastic muscular walls.
 D Thick inelastic muscular walls.
11. The diagram below represents a nephron



Where does ultra-filtration occur?

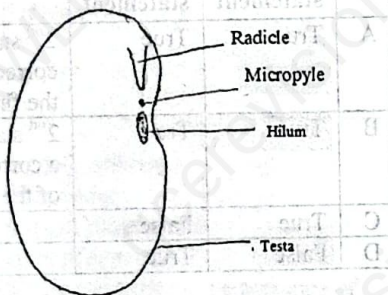
- A 4.
 B 5.
 C 2.
 D 1.

12. Where does gaseous exchange take place in the human respiratory system?
- Bronchioles.
 - Alveoli.
 - Trachea.
 - Bronchus.

13. Why is it that only 10% energy is transferred from one trophic level to another?
- Energy is stored in the organisms.
 - Energy is released by the organisms.
 - Energy is burnt up.
 - Energy is used in metabolic processes.

14. Which structure in a bird plays a role in food storage?
- Crop.
 - Gizzard.
 - Bill.
 - Intestines.

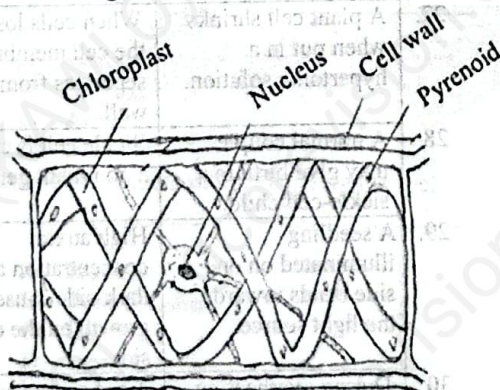
15. Below is the diagram of a bean seed:



During germination, water enters the seed through the:

- Radicle.
- Micropyle.
- Hilum.
- Testa.

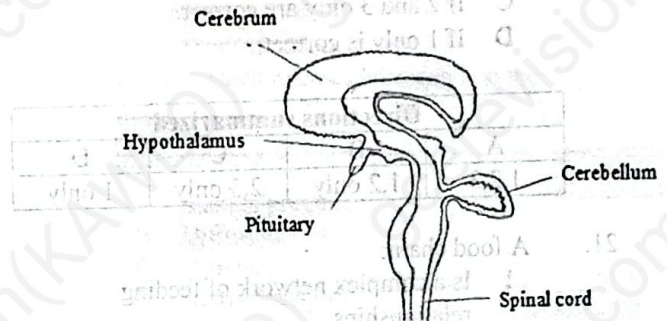
16. The diagram below is that of spirogyra:



Which labelled part enables it to carry out autotrophic nutrition?

- Chloroplast.
- Cell wall.
- Nucleus.
- Pyrenoid.

17. The diagram below is that of the mammalian brain.



Which of the labelled parts controls reasoning and intelligence?

- Hypothalamus.
- Pituitary.
- Cerebrum.
- Cerebellum.

18. Which of the following structures in the ileum transports fatty acid and glycerol?

- Capillaries.
- Lacteal.
- Epithelium.
- Microvilli.

19. Where in the mammalian skin is sebum produced?

- Malpighian layer.
- Sebaceous gland.
- Sweat gland.
- Granular layer.

20. Carbon dioxide concentration in an industrial zone can be kept constant by:

- Combustion of fuel.
- Deforestation.
- Afforestation.
- Grazing.

SECTION III (QUESTIONS 21-25)

(Five questions)

Directions: For each of the questions below, ONE or MORE of the responses is (are) correct. Decide which of the responses is (are) correct. Then choose:

- A If 1, 2 and 3 are all correct
- B If 1 and 2 only are correct
- C If 2 and 3 only are correct
- D If 1 only is correct

Directions summarized			
A	B	C	D
1,2,3	1,2 only	2,3 only	1 only

21. A food chain:
- 1 Is a complex network of feeding relationships.
 - 2 Has a producer at the base.
 - 3 Is a linear sequence of feeding.
22. The following features maximize absorption of sunlight in leaves:
- 1 Thin epidermis.
 - 2 Large surface area.
 - 3 Waxy cuticle on lower epidermis.
23. When a complete ring of bark of a tree is peeled off:
- 1 Active transport of minerals occur.
 - 2 Phloem is destroyed.
 - 3 No translocation of food occurs.
24. Decomposers in an ecosystem:
- 1 Feed saprophytically.
 - 2 Breakdown dead bodies.
 - 3 Release nutrients.
25. In a human being, in the face of danger:
- 1 Much ADH is secreted.
 - 2 Heart beats faster.
 - 3 Pupil opens wider.

SECTION IV

Questions 26-30

(Five questions)

Directions: Each of the following questions consists of a statement in the left – hand column followed by a statement in the right – hand column.

Decide whether the first statement is true or false. Decide whether the second statement is true or false.

Then, on the answer sheet mark:

- A If both statements are true and the second statement is a correct explanation of the first statement.
- B If both statements are true and the second statement is NOT a correct explanation of the first statement
- C If the first statement is true but the second Statement is false.
- D If the first statement is false but the second Statement is true.

Directions summarized			
	First statement	Second statement	
A	True	True	2 nd statement is a correct explanation of the first.
B	True	True	2 nd statement is NOT a correct explanation of the first.
C	True	False	
D	False	True	

	FIRST STATEMENT	SECOND STATEMENT
26.	Oxygen depletion in an aquatic environment results in suffocation and death of aquatic organisms.	During eutrophication, aerobic micro-organisms use up large amount of oxygen for decomposition of algae.
27.	A plant cell shrinks when put in a hypertonic solution.	When cells lose water, the cell membrane separates from the cell wall.
28.	A normal couple may give birth to a sickle-cell child.	Sickle cell is caused by a dominant gene.
29.	A seedling illuminated on one side bends towards the light source.	High auxin concentration at the dark-side causes rapid growth on the dark-side.
30.	During overheating in mammals, hair lies flat.	Air is a good conductor of heat.

SECTION V

Questions 31-40

(Ten questions)

Directions: Each question consists of four lettered headings A, B, C, D. Select the heading which is closely related to the description which follows.

31.

- A Stigma.
- B Anther.
- C Ovule.
- D Ovary.

Becomes the fruit after fertilization.

32.

- A Pituitary gland.
- B Thyroid gland.
- C Adrenal gland.
- D Pancreas.

Has both endocrine and exocrine functions.

33.

- A Pond water.
- B Pond weed.
- C Tadpole.
- D Fish.

An abiotic factor.

34.

- A Copper sulphate.
- B Lime water.
- C Sodium bicarbonate.
- D Pyrogallic acid.

A chemical used to indicate the presence of carbon dioxide.

35.

- A Ovulation.
- B Copulation.
- C Implantation.
- D Fertilization.

Causes an organism to experience orgasm.

36.

- A Lens.
- B Cornea.
- C Pupil.
- D Iris.

Controls the amount of light entering the eye.

37.

- A Erosion.
- B Desertification.
- C Leaching.
- D Eutrophication.

Caused by excessive application of inorganic fertilizers into aquatic ecosystems.

38.

- A Short gut
- B One-chambered stomach.
- C Sharp chisel-like canines.
- D Presence of bacteria in gut.

Is an adaptation for cellulose digestion.

39.

- A Nitrogen fixation.
- B Nitrification.
- C Decay.
- D Denitrification.

A process which releases Nitrogen into the atmosphere.

40.

- A Suction pressure.
- B Diffusion.
- C Osmosis.
- D Active transport.

Movement of substances against their concentration gradient.

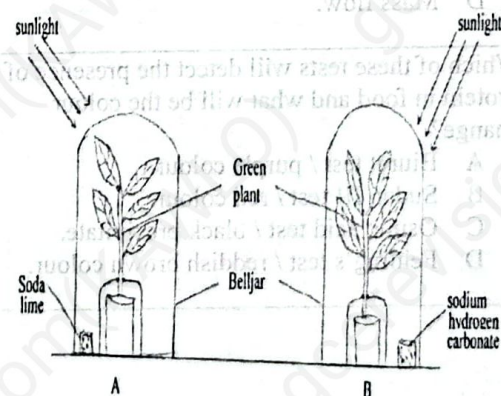
SECTION VI

Questions 41 - 50

(Ten questions)

Directions: This group of questions deals with biological situations. Each situation is followed by a set of questions. Select the best answer for each question.

41. The apparatus below was set up to investigate the effect of an external factor on photosynthesis.



What is the role of soda lime in the apparatus above?

- A To prove that CO_2 is necessary for photosynthesis.
- B To release CO_2 into the bell jar.
- C To prevent CO_2 production by soil organisms.
- D To absorb CO_2 present in the bell jar.

Turn Over

42. Pyrogalllic acid was used in an experiment to show that oxygen is necessary for seed germination. What is the role of pyrogalllic acid in the experiment?
- To release O_2 .
 - To absorb O_2 .
 - To kill microorganisms.
 - To facilitate seed germination.
-
43. Which of the equations below represent the process of fermentation?
- $6CO_2 + 6H_2O \longrightarrow C_6H_{12}O_6 + 6O_2$.
 - $C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O + \text{Energy}$.
 - $C_6H_{12}O_6 \longrightarrow 2C_3H_5OH + 2CO_2 + \text{Energy}$.
 - $C_6H_{12}O_6 \longrightarrow 2CH_3CH(OH)COOH + \text{Energy}$.
-
44. Blood vessels constrict in cold weather such that:
- Less blood flows to the body surface and conserve heat.
 - More blood flows to the body surface and promote heat loss.
 - More heat is lost by conduction.
 - Less heat is generated by convection.
-
45. The movement of molecules of a substance from a region of high concentration to a region of low concentration is?
- Diffusion.
 - Active transport.
 - Osmosis.
 - Mass flow.
-
46. Which of these tests will detect the presence of protein in food and what will be the colour change?
- Biuret test / purple colour.
 - Sudan III test / red colour.
 - Osmic acid test / black precipitate.
 - Fehling's test / reddish brown colour.
-
47. When setting up a potometer, the shoot to be used is cut under water. This is to avoid:
- Water flowing backward in the xylem.
 - The entry of dust into the xylem.
 - The entry of air into the xylem.
 - The entry of bacteria.
-
48. Newly transplanted seedlings wilt on a windy sunny day. This is:
- To reduce excessive water loss.
 - Because they lose water faster than they are absorbing.
 - Because the guard cells become very turgid.
 - Because the seedlings do not yet have a thick cuticle to resist transpiration.
-
49. In an experiment to determine a change in mass over time, a fixed quantity of germinating seeds were placed in a beaker and weighed on a balance after time intervals. After a few days, a drop in mass was noticed. The drop in mass at the early days was due to:
- No respiration.
 - Digestion and use of food reserves.
 - Inability to absorb water.
 - Digestion of the testa.
-
50. Brown eye (B) is dominant over blue eye (b). A heterozygous brown-eyed man marries a blue-eyed woman. What is the probability of this couple producing blue-eyed offspring?
- $\frac{1}{2}$.
 - $\frac{3}{4}$.
 - 0.
 - $\frac{1}{4}$.

STOP

GO BACK AND CHECK YOUR WORK