

|                                                                      |                      |                             |  |
|----------------------------------------------------------------------|----------------------|-----------------------------|--|
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| CANDIDATE'S FULL NAME                                                |                      |                             |  |
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| GENERAL CERTIFICATE OF EDUCATION BOARD<br>ADVANCED LEVEL EXAMINATION |                      |                             |  |
| SUBJECT TITLE<br>BIOLOGY                                             | SUBJECT CODE<br>0710 | PAPER NUMBER 3<br>Group One |  |
| EXAMINATION DATE: JUNE 2023                                          |                      |                             |  |

PRACTICAL EXAMINATION

FIRST GROUP

THREE HOURS

Enter the information required in the boxes above.

Answer ALL FOUR questions. Spaces are provided in this booklet for each section of the questions – for either drawing or writing. The allocation of marks for each section of a question is shown as well as the total marks for each question at the end. Great importance is attached to careful observation and handling of specimens and in the accuracy of labelling your diagrams.

You are reminded of the importance of using a hand lens or microscope where appropriate.

| Q No. | Score |
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| 1     |       |
| 2     |       |
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| 4     |       |
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| Signature: ..... Date: ..... |  | SB/   |     |
|                              |  | Score |     |
| Checked by: .....            |  | EXAM  | 90  |
|                              |  | Score |     |
| Signature: ..... Date: ..... |  | Total | 100 |
|                              |  |       |     |

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Turn Over



SCAN TO VISIT THE WEBSITE

1. (a) For each of the eight specimens (A to H) provided, state:
- (i) the major group (Phylum) to which it belongs;
  - (ii) the sub-group (Class) to which it belongs;
  - (iii) the scientific or common name.
- Use the columns in the table below to enter your answers.

| Specimen | (i) | (ii) | (iii)       |
|----------|-----|------|-------------|
| A        |     |      | Waterflea   |
| B        |     |      | Moss        |
| C        |     |      | Hibiscus    |
| D        |     |      | Cypress     |
| E        |     |      | Earthworm   |
| F        |     |      | Honey bee   |
| G        |     |      | Sea anemone |
| H        |     |      | Tilapia     |

(8 marks)

- (b) Give ONE external visible feature, characteristic of the phylum to which each of the specimens A to H belong.

| Specimen | External visible feature |
|----------|--------------------------|
| A        |                          |
| B        |                          |
| C        |                          |
| D        |                          |
| E        |                          |
| F        |                          |
| G        |                          |
| H        |                          |

(8 marks)

23/0710/3/G1

Go on to the next page



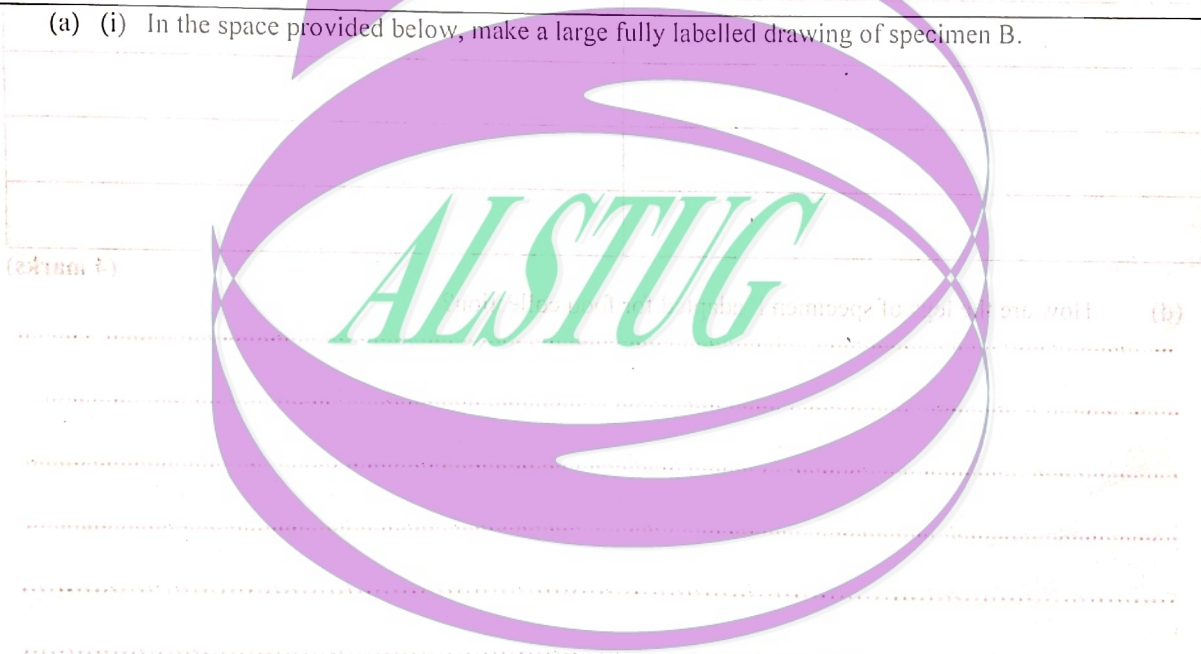
SCAN TO VISIT THE WEBSITE

(c) State **FOUR** ways in which specimens C and F are ecologically related:

- (i) .....
- .....
- (ii) .....
- .....
- (iii) .....
- .....
- (v) .....
- .....

(4 marks)  
(Total = 20 marks)

2. (a) (i) In the space provided below, make a large fully labelled drawing of specimen B.



(ii) On your drawing annotate **ONE** structure each concerned with Reproduction and Nutrition. (5 marks)

(b) How is specimen B adapted to moist and dry environmental conditions? (4 marks)

(i) Moist environmental conditions:

- .....
- .....
- .....
- .....
- .....

(2 marks)



(ii) Dry environmental conditions:

.....

.....

.....

.....

(2 marks)

(c) State **FOUR** differences between specimen C and specimen D.

| Specimen C | Specimen D |
|------------|------------|
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |

(d) How are the legs of specimen F adapted for food collection?

(4 marks)

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(3 marks)  
(Total = 20 marks)

23/0710/3/G1



ext page

SCAN TO VISIT THE WEBSITE

3. (a) Pin the chick provided on its back on a dissecting board or dish. Cut into the muscle wall to display the digestive and circulatory systems. In the space provided below; make a fully labeled drawing of your dissection.

(13 marks)

Do not write in these boxes

|                    |  |
|--------------------|--|
| Dissection Quality |  |
| Drawing Accuracy   |  |



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(b) Annotate:

(i) **FOUR** parts concerned with digestion.

(ii) **TWO** parts concerned with blood circulation.

(12 marks)

(Total = 25 marks)

Leave your dissection properly displayed for assessment at the end of the examination.

23/0710/3/G1



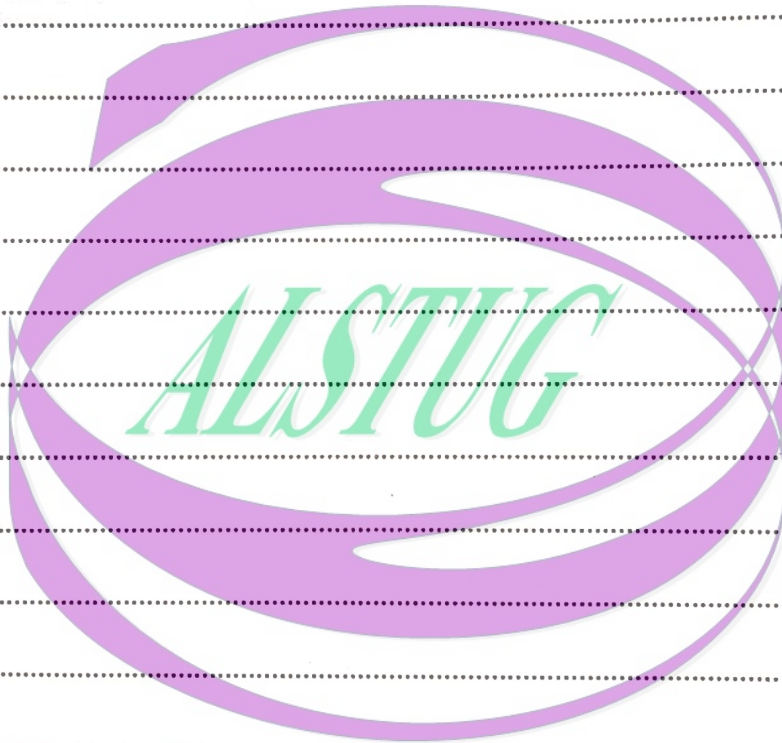
Turn Over

SCAN TO VISIT THE WEBSITE

(a) Hydrogen peroxide is a metabolic by-product of many living tissues of both plants and animals. The enzyme catalase, present in these tissues, catalyses the breakdown of hydrogen peroxide. Some tissues contain more catalase than others. You are provided with a piece of potato tuber; obtain an enzyme pool from it. Cut a piece of liver from the chick dissected in question 3, and obtain another enzyme pool from it. Using only the material provided, conduct an experiment to show that both potato tubers and liver contain catalase.

In the spaces provided below, describe your procedures, observations, and explain your results as fully as possible.

**Procedure and observations:**



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(10 marks)

**Explanation of results:**



SCAN TO VISIT THE WEBSITE

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(10 marks)

- (b) Devise and carry out a further test to confirm that an enzyme is involved in the experiment above.

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(5 marks)  
(Total = 25 marks)

GO BACK AND CHECK YOUR WORK.

23/0710/3/G1



SCAN TO VISIT THE WEBSITE

|                                                                      |  |                      |                             |
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| SUBJECT TITLE<br>BIOLOGY                                             |  | SUBJECT CODE<br>0710 | PAPER NUMBER 3<br>Group Two |
| EXAMINATION DATE: JUNE 2023                                          |  |                      |                             |

PRACTICAL EXAMINATION

SECOND GROUP

THREE HOURS

Enter the information required in the boxes above.

Answer ALL FOUR questions. Spaces are provided in this booklet for each section of the questions – for either drawing or writing. The allocation of marks for each section of a question is shown as well as the total marks for each question at the end. Great importance is attached to careful observation and handling of specimens and in the accuracy of labelling your diagrams.

You are reminded of the importance of using a hand lens or microscope where appropriate.

| Q No. | Score |
|-------|-------|
| 1     |       |
| 2     |       |
| 3     |       |
| 4     |       |
| Total |       |

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| Marked by: .....             |  | SCORE      |     |
| Signature: ..... Date: ..... |  | SBA Score  | 10  |
| Checked by: .....            |  | EXAM Score | 90  |
| Signature: ..... Date: ..... |  | Total      | 100 |

0710/3/G2

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Turn Over



SCAN TO VISIT THE WEBSITE

1. (a) For each of the eight specimens (A to H) provided, state:

- (i) the major group (Phylum) to which it belongs;
- (ii) the sub-group (Class) to which it belongs;
- (iii) the scientific or common name.

Use the columns in the table below to enter your answers.

| Specimen | (i) | (ii) | (iii)           |
|----------|-----|------|-----------------|
| A        |     |      | Spirogyra       |
| B        |     |      | Mushroom        |
| C        |     |      | Groundnut plant |
| D        |     |      | Millipede       |
| E        |     |      | Crayfish        |
| F        |     |      | Snail           |
| G        |     |      | Tilapia         |
| H        |     |      | Dogfish         |

(8 marks)

(b) Using a dichotomous key, separate the specimens A to F.

(5 marks)

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### Specimen B

Ecological importance: .....

**(2 marks)**

Habitat: .....

Ecological importance: .....

**(3 marks)**

Habitat: .....

Ecological importance: .....

(2 marks)

(Total = 20 marks)

2. (a) In the space provided below, make a large fully labelled drawing of specimen E. (7 marks)

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**—Turn Over**

23/0710/3/G2

SCAN TO VISIT THE WEBSITE

(b) Using the characteristics shown by specimen E describe how it is adapted for:

(i) Feeding.

.....

.....

.....

(ii) Gaseous exchange.

.....

.....

.....

(iii) Swimming.

.....

.....

.....

(iv) Defence.

.....

.....

.....

(v) Sensory perception:

.....

.....

.....

(c) State **FOUR** structural similarities and **FOUR** structural differences between specimen G and H which enable them to be classified under same phylum (major group) and different classes (subgroups). (5 marks)

(i) Similarities:

.....

.....

.....

.....

.....

.....

.....

(ii) Four structural differences between specimen G and specimen H.

(4 marks)

| Specimen G | Specimen H |
|------------|------------|
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |

(4 marks)

(Total = 20 marks)



3. (a) Pin the chick provided on its back on a dissecting board or dish. Cut into the muscle wall to display the urino-genital and respiratory systems. Make a fully labeled drawing of your dissection.

(15 marks)

Do not write in these boxes

|            |  |
|------------|--|
| Dissection |  |
| Quality    |  |
| Drawing    |  |
| Accuracy   |  |



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- (b) Annotate **TWO** structures each concerned with:

- (i) Reproduction.
- (ii) Excretion.
- (iii) Respiration.

(12 marks)

(Total =25 marks)

Leave your dissection properly displayed for assessment at the end of the examination.

Turn Over

23/0710/3/G2



SCAN TO VISIT THE WEBSITE

- | Solutions                | M | N | P |
|--------------------------|---|---|---|
| Initial length           |   |   |   |
| Length after 30 minutes  |   |   |   |
| Texture after 30 minutes |   |   |   |

(b) **Make a brief description of your procedure.**

**(6 marks)**

- (c) Suggest reasons for the results obtained with the different solutions.

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**(13 marks)**

(Total = 25 marks)

**GO BACK AND CHECK**

KK.

SCAN TO VISIT THE WEBSITE

|                                                                      |              |                |  |
|----------------------------------------------------------------------|--------------|----------------|--|
| REGISTRATION CENTER NUMBER                                           |              | CENTER NAME    |  |
| CANDIDATE'S FULL NAME                                                |              |                |  |
| CANDIDATE IDENTIFICATION NUMBER                                      | SUBJECT CODE | PAPER NUMBER   |  |
|                                                                      | 0710         | 3 Group Three  |  |
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| SUBJECT TITLE                                                        | SUBJECT CODE | PAPER NUMBER 3 |  |
| BIOLOGY                                                              | 0710         | Group Three    |  |
| EXAMINATION DATE: JUNE 2023                                          |              |                |  |

PRACTICAL EXAMINATION  
THIRD GROUP

THREE HOURS

Enter the information required in the boxes above.  
Answer ALL FOUR questions. Spaces are provided in this booklet for each section of the questions – for either drawing or writing. The allocation of marks for each section of a question is shown as well as the total marks for each question at the end. Great importance is attached to careful observation and handling of specimens and in the accuracy of labelling your diagrams.  
You are reminded of the importance of using a hand lens or microscope where appropriate

| Q No. | Score |
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| 1     |       |
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| 4     |       |
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|                              |       | SCORE |    |
| Marked by: .....             | SBA   | 10    |    |
| Signature: ..... Date: ..... | Score |       |    |
|                              |       | EXAM  | 90 |
| Checked by: .....            | Score |       |    |
| Signature: ..... Date: ..... | Total | 100   |    |
|                              |       |       |    |

0710/3/G3

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Turn Over



SCAN TO VISIT THE WEBSITE

I. (a) For each of the eight specimens (A to H) provided, state:

- (i) the major group (Phylum) to which it belongs;
- (ii) the sub-group (Class) to which it belongs;
- (iii) the scientific or common name.

Use the columns in the table below to enter your answers.

| Specimen | (i) | (ii) | (iii)       |
|----------|-----|------|-------------|
| A        |     |      | Mushroom    |
| B        |     |      | Liverwort   |
| C        |     |      | Leeks       |
| D        |     |      | Sea anemone |
| E        |     |      | Crayfish    |
| F        |     |      | CLam        |
| G        |     |      | Tadpole     |
| H        |     |      | Toad        |

(8 marks)

(b) Using a dichotomous key, separate the specimens A to G.

(6 marks)

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23/0710/3/G3

Go on to the next page



SCAN TO VISIT THE WEBSITE

(c) State the habitat and ecological importance of each of specimens A, B, and D .

**Specimen A**

Habitat: .....

Ecological importance: .....

.....

.....

(2 marks)

**Specimen B**

Habitat: .....

Ecological importance: .....

.....

.....

(2 marks)

**Specimen D**

Habitat: .....

Ecological importance: .....

.....

.....

(2 marks)

(Total = 20 marks)

2. (a) In the space provided below, make a large fully labelled drawing of specimen D.

(6 marks)

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(b) State **THREE** ways in which specimen B is adapted to life in it's environment.

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(3 marks)

(c) Give **FOUR** similarities between specimen G and H that enable them to be classified under same class or subgroup.

i. Similarities:

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.....

(ii) Give **FOUR** differences between specimen G and specimen H in terms of habitat, locomotion, gaseous exchange and. Nutrition.

(4 marks)

| Feature          | Specimen G | Specimen H |
|------------------|------------|------------|
| Habitat          |            |            |
| Locomotion       |            |            |
| Gaseous exchange |            |            |
| Nutrition        |            |            |

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(4 marks)

23/0710/3/G3

Go on to



SCAN TO VISIT THE WEBSITE

(iii) Which biological term is used to describe the transformation of specimen G to H?

(1 mark)

(iv) Specimen G and H occupy different habitats. State the advantages apart from feeding, of them occupying different habitats.

(2 marks)

(Total = 20 marks)



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23/0710/3/G3

Turn Over



SCAN TO VISIT THE WEBSITE

3. (a) Pin the fish provided on its back on a dissecting board or dish. Cut into the muscle wall and into the perivisceral cavity. Display the digestive, excretory and the respiratory. In the space provided below, make a fully labelled drawing of your dissection.

(13 marks)

Do not write in these boxes

|                    |  |
|--------------------|--|
| Dissection Quality |  |
| Drawing Accuracy   |  |



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- (b) Annotate **two** structures each concerned with:
- (i) Digestion.
  - (ii) Respiration.
  - (iii) Reproduction.

(12 marks)

(Total =25 marks)

Leave your dissection properly displayed for assessment at the end of the examination.

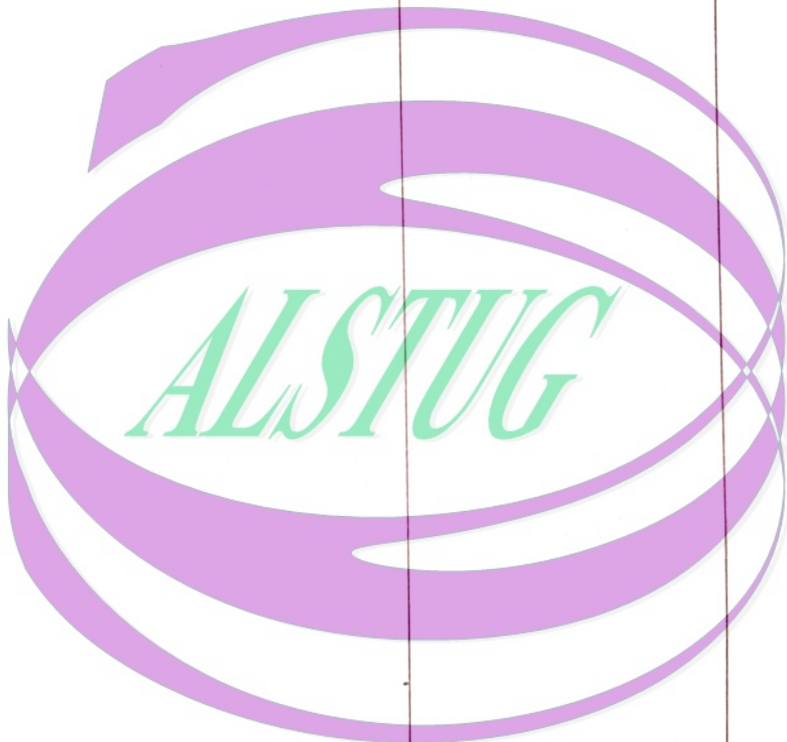
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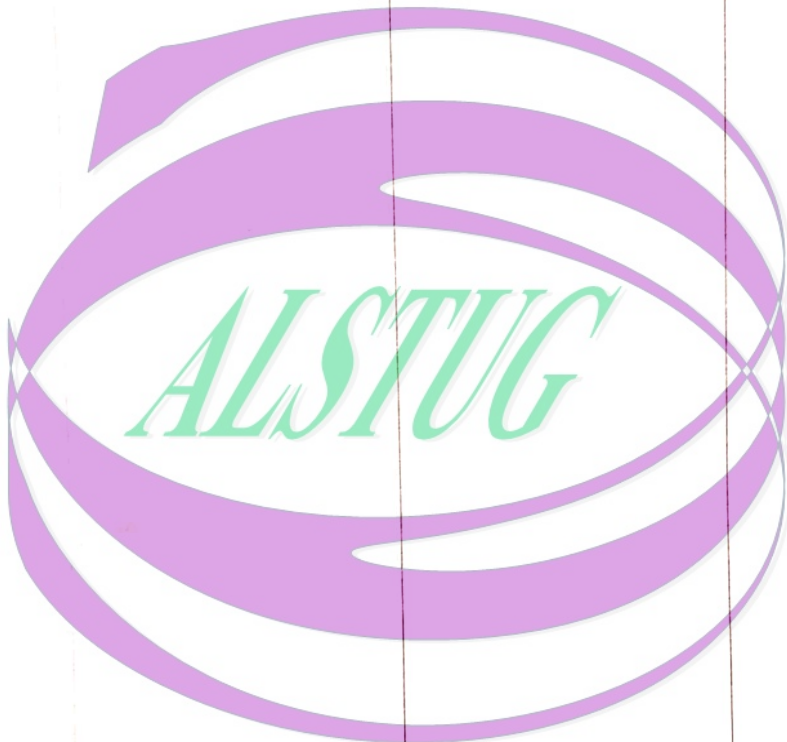


SCAN TO VISIT THE WEBSITE

4. You are provided with Solution A. Test the solution for the presence of carbohydrates, proteins and fats. Describe your procedure, observations and inferences.

| Procedure                                                                                                                                                | Observation | Inferences |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|
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| Procedure                                                                                                                                                | Observation | Inferences |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|
|  <p>Meet us at <a href="http://www.alstug.com">www.alstug.com</a></p> |             |            |

(25 marks)  
(Total = 25 marks)

23/0710/3/G3

GO BACK AND C



WORK.

SCAN TO VISIT THE WEBSITE

|                                                                      |  |                      |                              |
|----------------------------------------------------------------------|--|----------------------|------------------------------|
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| SUBJECT TITLE<br>BIOLOGY                                             |  | SUBJECT CODE<br>0710 | PAPER NUMBER 3<br>Group Four |
| EXAMINATION DATE: JUNE 2023                                          |  |                      |                              |

PRACTICAL EXAMINATION

FOURTH GROUP

THREE HOURS

Enter the information required in the boxes above.

Answer ALL FOUR questions. Spaces are provided in this booklet for each section of the questions – for either drawing or writing. The allocation of marks for each section of a question is shown as well as the total marks for each question at the end. Great importance is attached to careful observation and handling of specimens and in the accuracy of labelling your diagrams.

You are reminded of the importance of using a hand lens or microscope where appropriate.

| Q No. | Score |
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| 1     |       |
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|                          |                  | SCORE         |     |
| Marked by: .....         | Signature: ..... | SBA<br>Score  | 10  |
| Checked by: .....        | Signature: ..... | EXAM<br>Score | 90  |
|                          |                  | Total         | 100 |

Turn Over

0710/3/G4

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SCAN TO VISIT THE WEBSITE

1. (a) For each of the eight specimens (A to H) provided, state:
- the major group (Phylum) to which it belongs;
  - the sub-group (Class) to which it belongs;
  - the scientific or common name.
- Use the columns in the table below to enter your answers.

| Specimen | (i) | (ii) | (iii)                   |
|----------|-----|------|-------------------------|
| A        |     |      | <i>Spirogyra</i>        |
| B        |     |      | <i>Lycopodium</i>       |
| C        |     |      | <i>Leeks</i>            |
| D        |     |      | <i>Earthworm</i>        |
| E        |     |      | <i>Spider</i>           |
| F        |     |      | <i>Grasshopper</i>      |
| G        |     |      | <i>Groundnut</i>        |
| H        |     |      | <i>Wistar rat/G pig</i> |

- (b) State ONE external visible characteristic feature of the Class to which each of the specimens A, to H belong. (8 marks)

| Specimen | External visible feature |
|----------|--------------------------|
| A        |                          |
| B        |                          |
| C        |                          |
| D        |                          |
| E        |                          |
| F        |                          |
| G        |                          |
| H        |                          |

(8 marks)

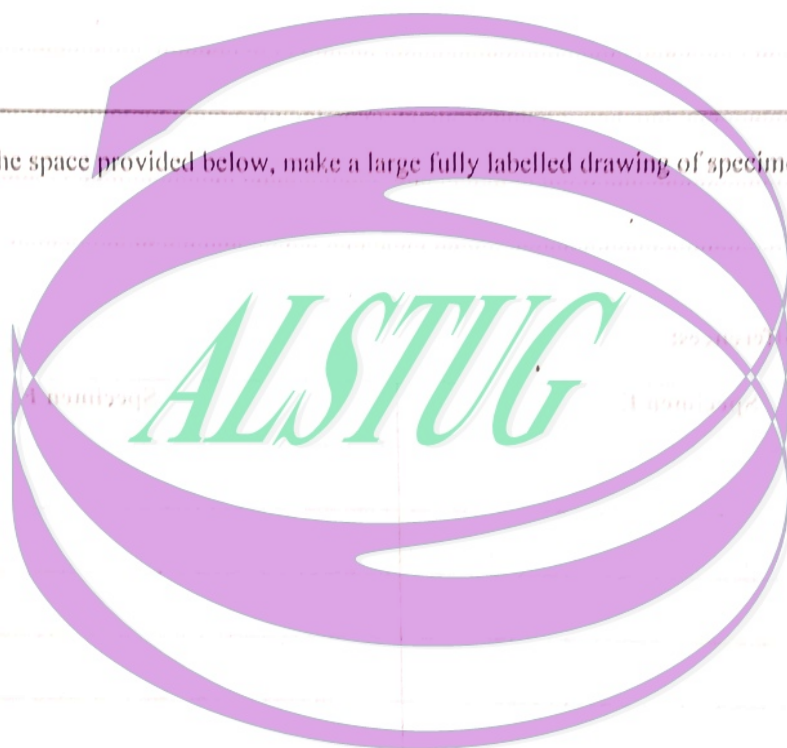


(c) State **FOUR** ways in which specimens C and D related ecologically?

- (i) .....
- .....
- (ii) .....
- .....
- (iii) .....
- .....
- (iv) .....
- .....

(4 marks)  
(Total = 20 marks)

2. (a) (i) In the space provided below, make a large fully labelled drawing of specimen D.



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(6 marks)

(ii) On your drawing, annotate **ONE** structure each for Reproduction and Movement. (4 marks)

23/0710/3/G4



Turn Over

SCAN TO VISIT THE WEBSITE

(b) How is specimen B adapted to moist environmental conditions?

.....

.....

.....

.....

(2 marks)

(c) Give FOUR structural similarities and FOUR structure differences between specimen E and F which enable them to be classified under same phylum (major group) and different classes (subgroups).

i. Similarities:

.....

.....

.....

.....

.....

.....

(4 marks)

(ii) Structural differences:

| Specimen E | Specimen F |
|------------|------------|
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |
|            |            |

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(4 marks)

(Total = 20 marks)



SCAN TO VISIT THE WEBSITE

3. (a) Pin the mammal provided on its back on a dissecting board or dish. Cut into the muscle wall and into the perivisceral cavity to display the digestive system. In the space provided below, make a large labelled drawing of your dissection.

(13 marks)

Do not write in these boxes

|                       |  |
|-----------------------|--|
| Dissection<br>Quality |  |
| Drawing<br>Accuracy   |  |



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- (b) Annotate SIX structures concerned with digestion.

(12 marks)

(Total = 25 marks)

Leave your dissection properly displayed for assessment after the examination.

23/0710/3/G4

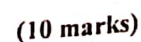


Turn Over

SCAN TO VISIT THE WEBSITE

- Record your procedure, observations and inferences in the table below.

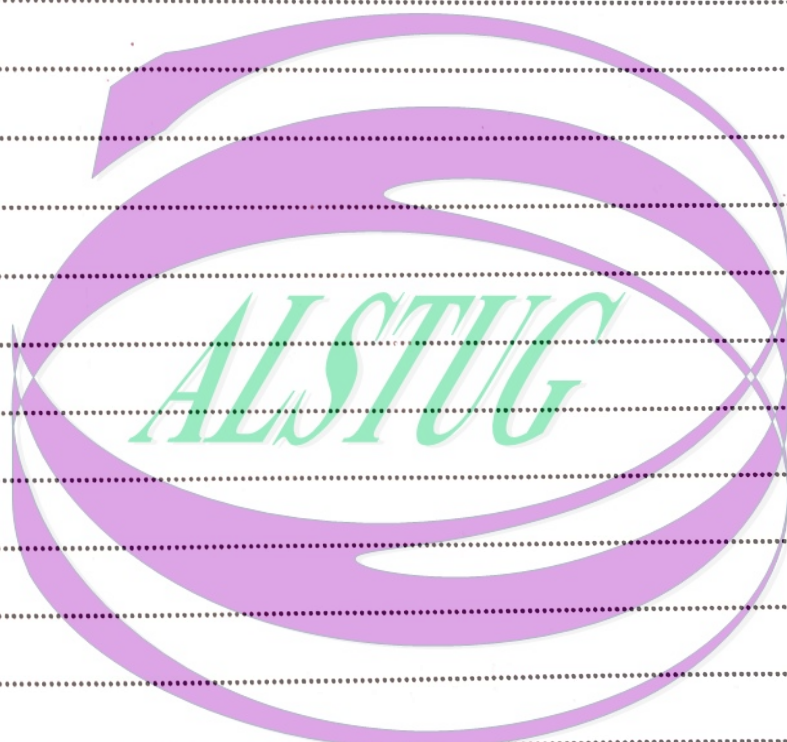
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Go on to the next page



- (b) Make a 50% dilution of solution P. With the reagents provided, also test this solution to show the quantity of the enzyme dehydrogenase.  
State your procedure and inferences taking special note on any precautions you used, to reach these results.



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(10 marks)



Turn Over

SCAN TO VISIT THE WEBSITE

(c) Device and carry out an experiment to show that an enzyme is involved in these tests. Explain your procedure, observations and inferences in the table below.

| Procedure                                                                           | Observations | Inferences |
|-------------------------------------------------------------------------------------|--------------|------------|
|  |              |            |
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(5 marks)  
(Total = 25 marks)

GO BACK AND VISIT OUR WORK.  
SCAN TO VISIT THE WEBSITE