Excel in BIOLOGY

in just a day

VOLUME 4

O' Level Biology Seminar

At Buddo Secondary School

On Saturday 08th July 2023

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Chapter 1

O' Level biology Examination Tips

1.1 CHALLENGES IN THEORY EXAMINATION OF BIOLOGY

1. Most students fail to answer multiple-choice questions accurately due to guessing.
2. Some students use abbreviations and others have poor handwriting.
3. Some students fail to give differences/contrasts.
4. Some students fail to describe the graph; biological processes; and experiments
5. Most of students fail to explain the graphs, biological situations/events.
6. Most students fail to carry out the genetical crosses; fail to construct food chain/webs.
7. Some students fail to represent data on graphs correctly.
8. Most students fail to give the correct appropriate graphical scale
9. Some students misinterpret of questions due to lack of practice in answering questions or limited vocabulary or due to lack of practical skills.
10. Most of the students have low biological content either due to poor revision culture, lack of preparation, or Low syllabus coverage.

1.2 CHALLENGES IN PRACTICAL EXAMINATION OF BIOLOGY

1 Lack of observational skills or incorrect observations.
2 Students give correct observations but wrong deductions.
3 Most students fail to construct dichotomous keys correctly.
4 Students fail to classify of specimens (organisms) correctly.
5 Students tend to give wrong spellings of technical words e.g., proboscis spelt as probosis; and insecta as insector.
6 Poor recording of results.
7 Poor drawings.

Chapter 2 Questions

TOPIC 1: DIVERSITY OF LIVING THINGS

1. (a) State the primary function(s) of the following plant organs:
(i) Stems. (02 marks)
(ii) Leaves. (01 marks)
(b) Giving **one** examples in each case, briefly describe how different stems and leaves are modified to perform other functions besides their primary functions stated in (a) above. (12 marks)

2. Cockroaches and butterflies are common insects in nature.
(a) Explain why insects, like cockroaches and butterflies, are the most successful animals on land. (04 marks)
(b) State the economic importance of cockroaches. (03 marks)
(c) Describe the lifecycle of butterflies. (06 marks)
(d) Describe how the lifecycle of cockroaches is different from that of butterflies. (02 marks)

3. You are provided with specimens **R** (Hibiscus flower) and **S** (Sodom apple / *Solanum incanum* flower) which are flowers.
(a) Give **four** reasons why they are flowers. (02 marks)
(b) Giving a reason in each case, state the type of pollination of each specimen. (04 marks)
(c) Give **three** structural differences between specimen **R** and **S**. (03 marks)
(d) Observe specimens **R** and **S**. Describe;
(i) The pistil of specimen **R**. (02 marks)
(ii) The androecium of specimen **S**. (02 marks)
(e) Give two ecological advantages of specimen **R** and **S**. (2 marks)
(f) Remove all the floral parts of specimen R to expose the pistil. Draw and label the exposed pistil. State your magnification. (05 marks)

Chapter 3 Answers

1. a) (i) *Primary function stems*

- They hold the leaves in suitable position for receiving sunlight for photosynthesis.
- They hold the flowers in suitable position so that pollination.
- They hold fruit in suitable position for easy dispersal of seeds/fruits.
- They conduct water and salts from the roots up to leaves.
- They conduct manufactured food from leaves to the roots.

(ii) *Primary function leaves*

- They are used for photosynthesis.
- They are used for gaseous exchange through their stomata.
- They are used for transpiration.

(b)

Leaf Modifications	*Importance*	*Example*
Leaf sheath	Provides extra supports to the weak stem	Maize, guinea grass
Hairs	Reduces transpiration	Maize, guinea grass
Pitchers, tentacles or spiny margin	Capture and digest insects to obtain nitrogen for the plant.	Venus's flytrap and pitcher plant
Tendrils	attaches the plant to supporting objects	Peas and Gloriosa
Buds	Vegetative or asexual reproduction	Bryophyllum leaf
Spines or thorns	Reduce water loss. Protect against herbivores.	Cactus; prickly pear
Thin, dry scaly leaves;	Protects the plant from mechanical injuries.	Onion, corms and garlic