



0046

The Open University of Sri Lanka
Faculty of Engineering Technology



Department of Agricultural and Plantation Engineering

Study Programme : Bachelor of Industrial Studies Honours (Agriculture)
Name of the Examination : Final Examination
Course Code and Title : AGI3551 Agricultural Biology
Academic Year : 2024/2025
Date : 14th February 2026
Time : 13:30 -16:30 hr
Duration : 03 Hours

Index No. :

Examination Type: Closed Book Test

General Instructions

1. Read all instructions carefully before answering the questions.
2. Answers should be in clear handwriting.
3. Do not use red colour pen.
4. This question paper consists of two (02) sections.

Section 1

- Consists of 15 questions in six (06) pages.
- Answer all questions.
- All questions carry equal marks.
- Write answers only in the space provided.
- Please do not remove the question paper from the examination hall.
- You may spend one (01) hour to answer this section.

Section 11

- Contain six (06) questions.
- Answer any four (04) questions.
- You may spend two (02) hours to answer this section.
- All questions carry equal marks.
- Answer for each question should commence from a new page.

SECTION I: Answer all questions. Use the space given under each question.

1. List five (05) functions of proteins.

i

ii

iii

iv

v

2. Briefly explain the effect of temperature on enzyme activities inside the organisms

3. Mark the correct statements as "✓" and incorrect as "X" regarding the nomenclature of organisms.

i. The scientific name of any organism must be written in the Latin script (English alphabet), underlined when written by hand and italicized when printed.

☐

ii. The scientific name of any organism must be written in English, underlined when written by hand and italicized when printed.

☐

iii. The first letter of the generic name must be capital and that of the

☐

species name should be simple.

- iv. The first letter of the species must be capital and that of the generic name should be simple. ☐

- v. In animals the family names are formed by adding -idae and in plants by adding -aceae to the name of the type of genus. ☐

4. Cells or groups of cells are modified to carry out various functions in plants. List five (05) functions of cells or group of cells.

i

ii

iii

iv

v

5. "Xylem and phloem are the conducting tissues of a plant" Write the function/s of xylem and phloem vessels.

Xylem Vessels

Phloem Vessels

6. Describe how the structure of the chloroplast is adapted to its function in photosynthesis.

7. a.) Name the end product of the glycolysis

b.) Name the first product formed in Krebs's cycle.

8. Differentiate photosynthesis and respiration

Photosynthesis	Respiration
i	
ii	
iii	
iv	
v	

9. Briefly explain the role of growth substances in fruit growth.

This image shows a blank sheet of white paper with horizontal dashed lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no other markings or text on the page.

10. What is Mendel's first law?

11. Write the F1 Progeny genotype and phenotype of the cross below.

G – Yellow color seeds

g – Green color seeds

R - Round shape seeds

r - Wrinkled surface of seeds

Parents	Yellow, Round seeds GGRR	×	Green, Wrinkled seeds ggrr
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Genotype

Phenotype

12. What is meant by 'Epistasis' in genetic studies.

13. What is meant by gene linkage?

14. Briefly explain the reasons for mutations in genetic materials.

15. List four (04) types of evolutions possible to happen within a population

i

ii

iii

iv

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SECTION 2: Answer any four (04) questions.

1. Differentiate between the following,
 1. Prokaryotic and Eucaryotic cells
 2. Plant and Animal cells
2. Explain the structure of the primary stem and the primary root before the secondary growth.
3. Evaluate the efficiency of photosynthesis under different environmental conditions.
4. Compare and contrast aerobic and anaerobic respiration in plants.
5. Write an essay on factors affecting fruit quality.
6. Discuss the concept of Incomplete Dominance as an exception to Mendel's Law of Dominance. Use a specific biological example to illustrate how the phenotypic and genotypic ratios differ from a standard monohybrid cross and explain the molecular basis for this phenomenon.