

The Open University of Sri Lanka  
 Faculty of Engineering Technology  
 Department of Agricultural and Plantation  
 Engineering



Study Programme	: Bachelor of Industrial studies Honours in Agriculture
Name of the Examination	: Final Examination
<b>Course Code and Title</b>	<b>: AGI3551 Agricultural biology</b>
Academic Year	: 2019/2020
Date	: 30 <sup>th</sup> September 2020
Time	: 09:30 – 12:30 hrs
Duration	: <b>3 hours</b>

**SECTION 2: Answer any four (04) questions.**

1.
  - (a) Explain the biological functions of proteins.
  - (b) Describe the factors effecting enzymatic activities of plants.
  
2.
  - (a) Write the Mendel's first and second laws.
  - (b) In a plant species, long pods (L) are dominant to short pods (l). Round seeds (R) are dominant to irregular seeds (r). The progeny resulting from a cross between a plant bearing long pods, round seeds with that of long pods and irregular seeds is given below.
 

Plants with long pods and round seeds	105
Plants with long pods and irregular seeds	102
Plants with short pods and round seeds	30
Plants with short pods and irregular seeds	31

 Explain the results
  
3.
  - (a) Draw a labelled diagram of the structure of a chloroplast as seen with an electron microscope.
  - (b) Outline the effect of temperature, light intensity and carbon dioxide concentration on the rate of photosynthesis.

- (c) Explain the reactions involving the use of light energy that occur in the thylakoids of the chloroplast.
- 4. (a) Outline the process of glycolysis.  
(b) Explain anaerobic respiration.
- 5. (a) Describe the objectives of plant breeding.  
(b) Briefly explain the 'Pure Line' theory.
- 6. (a) Define the term ecosystem.  
(b) Discuss the role of consumers in an ecosystem.