

UNIVERSITY OF RUHUNA

FACULTY OF AGRICULTURE

Fourth Examination in BSc Agricultural Resource Management & Technology (Part I)

Agribusiness Management (Part I)

November 2020

CS 4107 PLANT TISSUE CULTURE (Elective)

THEORY

Answer **THREE** Questions Only

Time: 1 ½ hours

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1. (i) Define the following terms **(5 marks each-5×4=20)**
- a. Totipotency
 - b. Callus
 - c. Embryogenesis
 - d. Differentiation
- (ii) What are the three main objectives of plant tissue culture **(30 marks)**
- (iii) Briefly explain the measures can be taken to maintain the cleanliness in the tissue culture laboratory **(50 marks)**
2. Explain the following:
- a. Role of Auxins and Cytokinins in micropropagation **(60 marks)**
 - b. The factors affecting on *in-vitro* rooting of plantlets **(40 marks)**
3. Briefly explain the following:
- a. Process of the production of Artificial seeds **(50 marks)**
 - b. Cryopreservation for germplasm conservation **(50 marks)**
4. Giving appropriate examples explain the application of plant tissue culture in the development of horticulture sector in Sri Lanka **(100 marks)**
5. By analyzing all required facilities to perform plant tissue culture, suggest a low cost tissue culture option to introduce medium scale growers in Sri Lanka **(100 marks)**