Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Science and Technology Degree Programme
Department of Science and Technology
300 Level 2nd Semester Examination –Dec.2018/Jan. 2019
SCT 336-2 In vitro Culture Techniques

Uva Wellassa University

Instructions to candidates
Total number of questions: Four (04)
Answer all the questions
Total time allocated: Two (02) hours
Total marks allocated: 100

1.

a. Define the following terms used in plant tissue culture.

i. Explant
ii. Differentiation
iii. Organogenesis
iv. Embryogenesis

(12.5 marks)

b. Suggest a suitable sterilization techniques for the following items stating all the set conditions.

i. Glass petri dishes
ii. 500 ml of Murashige and Skoog (1962) solid basal medium
iii. 100 ml of 1mg/mL Ascorbic acid solution
iv. 100 ml 1mg/mL 2,4-Diclorophenoxyacetic acid solution

(12.5 marks)

2. Write short notes on the importance of the following:

a. Protoplast culture

(12.5 marks)

b. Dihaploids

(12.5 marks)

90

3.

a. What are artificial seeds?

(5 marks)

b. Briefly explain how they are produced.

(10 marks)

c. Give the advantages and disadvantages of artificial seeds.

(10 marks)

4. A major exporter of *in vitro* propagated ornamental aquatic plants in Sri Lanka has observed that 25% of *in vitro* plants in his laboratory have appeared glassy and water soaked (hyperhydric). These plants easily brakes away (brittle) when handle with forceps. He is experiencing heavy financial losses due to this problem. Supposed that he has hired you to solve this problem. As an expert in plant tissue culture, explain how you solve this problem stating reasons for obtaining such plants and suggesting suitable prevention methods.

(25 marks)