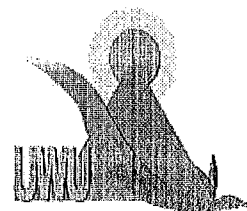
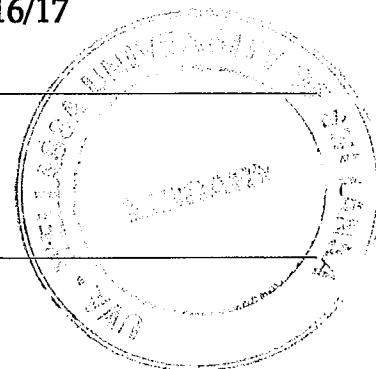


Uva Wellassa University, Sri Lanka
Faculty of Science and Technology
Department of Science and Technology
Science and Technology Degree Programme
3 Level 2nd Semester Examination – Dec./Jan. 2016/17
SCT 313-2 Cell and Tissue Culture



Total number of questions four (04) essay questions
Answer all the questions
Duration: Two (02) hours
Mark allocation: 100



1.
 - a. What is phytosanitation?
(05 mark)
 - b. You are provided with a commercial variety of potato plants which are infected with a systemic virus.
 - i. Explain a tissue culture based protocol to develop virus free potato plants using this virus infected plant.
(15 mark)
 - ii. How do you confirm that the plants you developed are free from the original virus?
(05 mark)

2. Give scientific explanations for the use of following substances in a plant tissue culture medium.
 - a. Ascorbic acid
 - b. Coconut water
 - c. Sucrose
 - d. Activated charcoal

(25 mark)

3.

a. Name the two (02) major types of callus cultures and briefly describe them.
(04 mark)

b. Briefly describe how to prepare and maintain a callus culture.
(05 mark)

c. Draw the typical growth curve of a callus culture until six weeks from culture initiation. Label the five (05) phases of growth. Indicate with an arrow, on the curve you draw, the ideal time to change the culture medium.
(12 mark)

d. Give two (02) applications of callus cultures.
(04 mark)

4. Write short notes on the following

a. Protoplast culture

b. Endosperm culture

(25 mark)