

Uva Wellassa University, Sri Lanka
Faculty of Science and Technology
Science and Technology Degree Programme
2nd Semester Examination –September/October 2013
SCT 313:2 Cell and Tissue Culture



Total number of questions four (04)

Answer all the questions

Total time allocated: Two (02) hours

Total marks allocated: 100

1.

- a. What is phytosanitation?

(05 marks)

- b. You are provided with a potato plant of an elite cultivar. However, this plant is infected with a systemic virus disease. Explain a tissue culture based protocol to develop virus free potato plants using this virus infected plant.

(20 marks)

2. Give scientific explanation for using following substances in a plant tissue culture medium.

- a. Sucrose
- b. Activated charcoal
- c. Ascorbic acid
- d. Phytigel

(25 marks)

3. Write short notes on the following

- a. Embryo culture and embryo rescue
- b. Anther culture

(25 marks)

4.

a. Name the two major types of callus cultures and briefly describe them.

(04 marks)

b. Briefly describe how to prepare and maintain a callus culture.

(05 marks)

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

(12 marks)

d. Give two applications of callus cultures.

(04 marks)