



**L-Università
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2022 MAIN SESSION**

SUBJECT:	Agribusiness
PAPER NUMBER:	Controlled – Unit 2
DATE:	14 th May 2021
TIME:	10:00 a.m. to 11:35 a.m.

Name of candidate _____

I.D. number _____

School _____

Class _____

Answer **ALL** questions in the space provided.

Scenario

- Sam works at a company which supplies agricultural products.
- As a specialist in the area, Sam is in charge of the agricultural stock.
- Sam is asked to give advice on the setting up of crop husbandry systems by young entrepreneurs.

Question 1

K-5 (4 marks)

a. List **TWO** processes by which water travels through soil.

Process 1: _____ (0.5)

Process 2: _____ (0.5)

b. Describe the following plant structures that are involved in the intake and internal transport of water and soil nutrients.

Rooting system: _____

_____ (0.5)

Xylem: _____

_____ (0.5)

c. Outline the process, through **FIVE** steps, by which water travels from soil to the atmosphere via transpiration.

_____ (2)

Please turn the page.

Question 2**K-6 (4 marks)**

a. Define Photosynthesis

(1)

b. Describe how the following factors affect the rate of photosynthesis.

i. Water availability: _____

_____ (0.25)

ii. Light intensity: _____

_____ (0.25)

iii. Carbon dioxide concentration: _____

_____ (0.25)

iv. Temperature: _____

_____ (0.25)

c. Describe how a plant reacts to light direction and gravity to maximise photosynthesis.

(2)

Question 3

C-3 (6 marks)

a. Explain how the following parameters can be modified in a greenhouse (protected cultivation):

i. Light (increase and decrease): _____

_____ (1)

ii. Temperature (heating and cooling): _____

_____ (1)

b. Compare **TWO** characteristics of drip irrigation and sprinkler irrigation systems.

Comparison of characteristics 1: _____

_____ (1)

Comparison of characteristics 2: _____

_____ (1)

c. Discuss how light can be used to germination and growth rate in horticulture.

_____ (2)

Question 4**K-8 (4 marks)**a. List **FOUR** factors that contribute towards natural product spoilage and decay:

i. _____ (0.25)

ii. _____ (0.25)

iii. _____ (0.25)

iv. _____ (0.25)

b. Outline the following **TWO** practices that slow down the process of natural product spoilage and decay:

i. reduction in time from harvest to storage/packaging: _____

_____ (0.5)

ii. Suitable storage: _____

_____ (0.5)

c. Describe suitable packaging for the following products, in order to avoid spoilage and decay:

Carrots	Soft fruits
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_____ (2)

Please turn the page.

Question 5

K-9 (4 marks)

a. Mention the **TWO** types of germination:

Type 1: _____ (0.5)

Type 2: _____ (0.5)

b. Outline how the following **FOUR** conditions need consideration for optimum propagation of plants.

strong wind currents: _____

_____ (0.25)

water: _____

_____ (0.25)

temperature/humidity: _____

_____ (0.25)

pathogens/pests: _____

_____ (0.25)

c. Describe the following **FOUR** propagation techniques.

stem cutting	bulb	rhizome cutting	stem tuber cutting
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