



**L-Università  
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2023 MAIN SESSION**

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SUBJECT:	<b>Agribusiness</b>
PAPER NUMBER:	Controlled – Unit 1
DATE:	14 <sup>th</sup> May 2021
TIME:	10:00 a.m. to 11:35 a.m.

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**Name of candidate** \_\_\_\_\_

**I.D. number** \_\_\_\_\_

**School** \_\_\_\_\_

**Class** \_\_\_\_\_

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

Scenario:

- Agriculture is one of the oldest practices that has evolved through the centuries.
- However, during the last century, the world’s population increased and food demands increased too. The discovery of fertilizers and pesticides helped to increase crop yields.
- A group of classmates will be looking at the origins of food using various agricultural practices, by showing their knowledge on the basic principles of plant science and crop cultivation.

**Question 1**

**K-2 (4 marks)**

a. Label the different plant cell components in Figure 1 below.

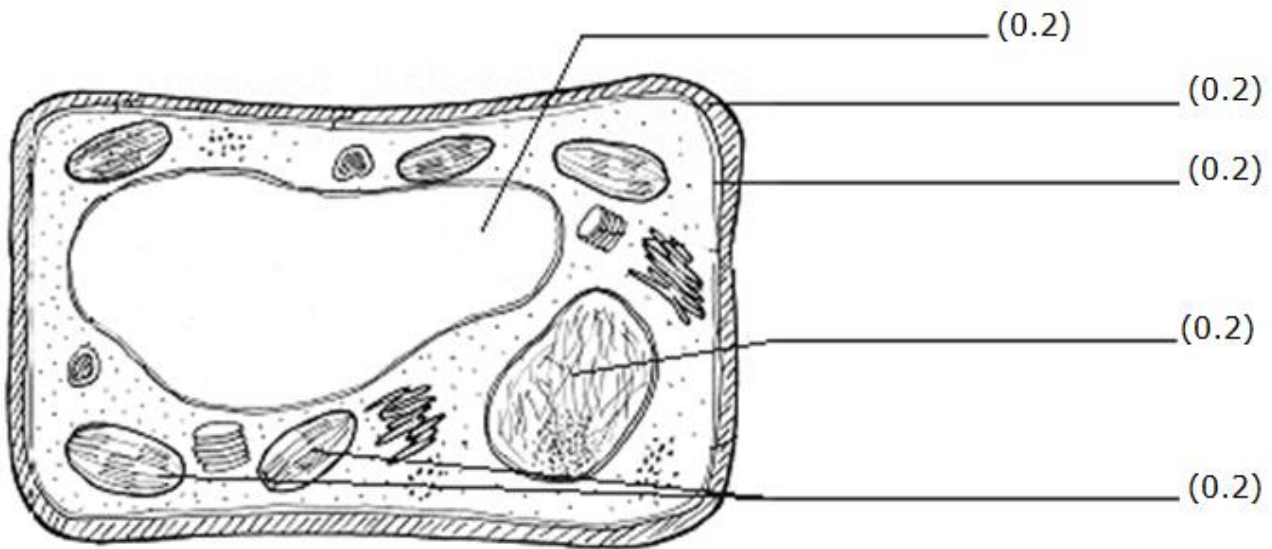


Figure 1: A typical plant cell  
 (Source: <https://garden.org/onlinecourse/PartI6.htm>)

b. Identify the transport systems in both monocots and dicots in Figure 2.

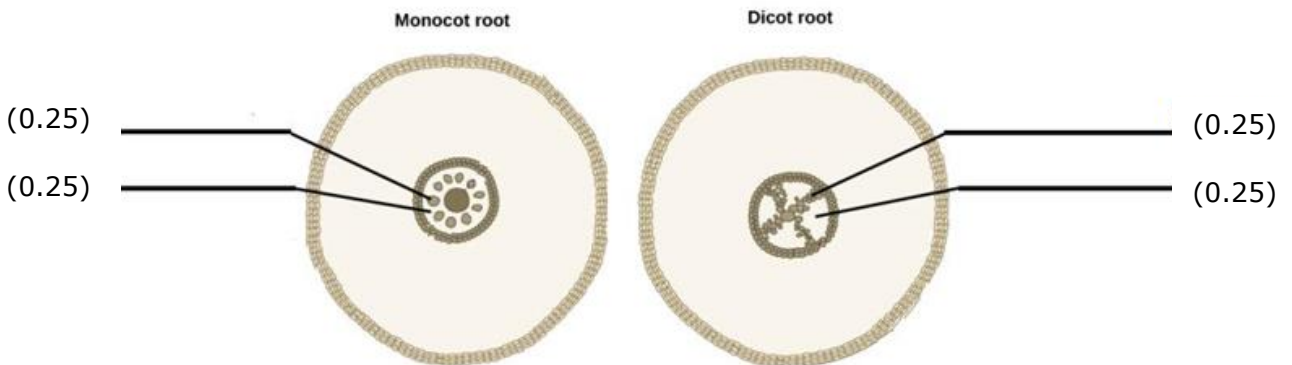


Figure 2: Cross-sections for typical dicot and monocot roots  
 (Source: <https://courses.lumenlearning.com/ivytech-bio1-1/chapter/roots/>)




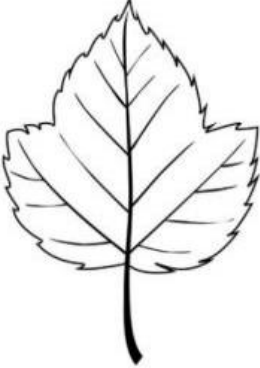


**Question 2**

**C-1 (6 marks)**

a. Classify the following leaves as monocotyledons or dicotyledons in Table 1 by ticking  the correct check-box for each.

Table 1: Typical leaves of monocotyledons and dicotyledons

Leaf	Monocotyledons	Dicotyledons
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

(0.5)

(0.5)

(0.5)

(0.5)

(Sources: vectorstock.com, sweetgum.nybg.org, istockphoto.com)

b. Explain whether the following microscopic structures in Figure 3 below are monocotyledons or dicotyledons. As part of each explanation give **ONE** reason.

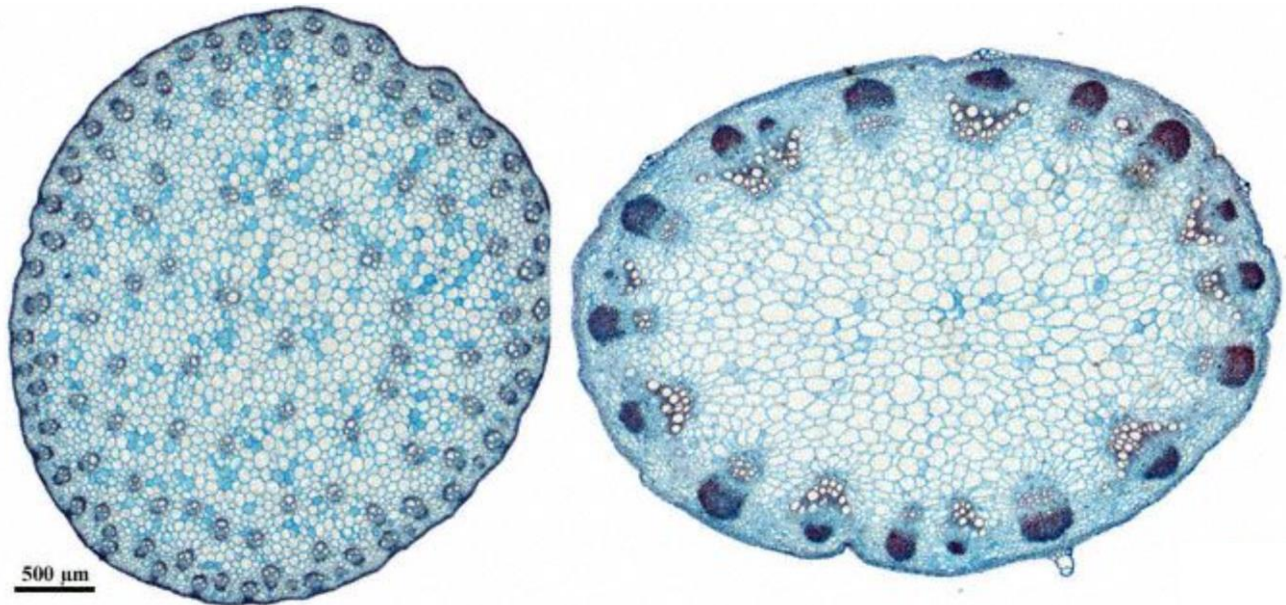


Figure 3: Microscopic structures from different monocotyledons and dicotyledons  
(Sources: [i.pinimg.com](http://i.pinimg.com), [www.amazon.com](http://www.amazon.com))

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(1)

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(1)

c. Differentiate between the external structure of the rooting system and the external structure of the flower structure of monocotyledons (e.g. garlic) and dicotyledons (e.g. carrot):

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(2)

**Question 3**

**K-3 (4 marks)**

The pumpkin is a popular crop with Maltese farmers. After harvesting, pumpkins are typically displayed on farmhouse rooftops.

- a. Name the life cycle stages of a pumpkin.
- b. Organise the stages of the life cycle of a pumpkin by numbering the pictures below in Figure 4 according to how one stage follows the other. The first stage (1) has been provided for you.
- c. Outline the stages of the life cycle of a pumpkin following the sequence of events organised in the Question 3b.

		a. Stage Name	b. Order	c. Outline of Stage
E.g.		germination	1	The seed germinates in optimum conditions and develops in to a plant.
i.		_____ (0.25)	_____ (0.25)	_____ _____ _____ _____ (0.5)
ii.		_____ (0.25)	_____ (0.25)	_____ _____ _____ _____ (0.5)



iii.		_____ (0.25)	_____ (0.25)	_____ _____ _____ _____ (0.5)
iv.		_____ (0.25)	_____ (0.25)	_____ _____ _____ _____ (0.5)

Figure 4: Life cycle of the pumpkin  
 (Source: [www.montessorimom.com/life-cycle-pumpkin/](http://www.montessorimom.com/life-cycle-pumpkin/), [/beeaware.org.au](http://beeaware.org.au))

**Question 4**

**K-4 (4 marks)**

Working in agribusiness can pose Health and Safety issues to Human Health.

a. Match different types of risks with hazards in a crop production enterprise, by drawing a line between them.

	<b>Hazard</b>
i.	dust
ii.	lifting heavy objects
iii.	direct sunlight
iv.	fuel
v.	pesticides and fertilisers

<b>Risk</b>
heat stroke
poisoning
respiratory problems
back injury
burns

(1)

b. List the **FOUR** main pieces of information needed when calling for help in case of emergency.

- i. \_\_\_\_\_ (0.25)
- ii. \_\_\_\_\_ (0.25)
- iii. \_\_\_\_\_ (0.25)
- iv. \_\_\_\_\_ (0.25)

***This question continues on next page.***

c. State **TWO** reasons why it is important to adhere to Health and Safety measures in a crop production enterprise.

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(2)

**Question 5**

**K-6 (4 marks)**

When working in agribusiness, it is very important to become familiar with certain common terms used.

a. Define the term 'market' in relation to agribusiness.

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(1)

b. Define the terms 'demand' and 'supply' in relation to agribusiness.

Demand: \_\_\_\_\_

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(0.5)

Supply: \_\_\_\_\_

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(0.5)

c. Describe the role of the agribusiness entrepreneur and manufacturers in agribusiness.

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c. Relate the following deficiency symptoms to **ONE** typical missing nutrient causing them:

- i. Deformed new leaves: \_\_\_\_\_ (0.25)
- ii. Interveinal chlorosis of older leaves: \_\_\_\_\_ (0.25)
- iii. Interveinal chlorosis on new leaves: \_\_\_\_\_ (0.25)
- iv. Total leaf chlorosis of older leaves: \_\_\_\_\_ (0.25)
- iv. Leaf purpling: \_\_\_\_\_ (0.25)
- vi. Leaf margin necrosis: \_\_\_\_\_ (0.25)
- vii. Necrosis of shoot tips: \_\_\_\_\_ (0.25)
- viii. Total chlorosis on new leaves: \_\_\_\_\_ (0.25)

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