



L-Università  
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2025 MAIN SESSION**

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SUBJECT:	<b>Agribusiness</b>
PAPER NUMBER:	Controlled – Unit 1
DATE:	15 <sup>th</sup> May 2023
TIME:	10:00 a.m. to 11:35 a.m.

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**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR  
AFTER THE EXAMINATION.**

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

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

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

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

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

**Scenario**

- Melix is an agribusiness enterprise is looking for interns.
- The interns need to be proficient in these topics:
  - the science of crops plants till harvest;
  - crop requirements throughout their growing stages;
  - marketing of agribusiness produce.

**Question 1**

**K-2 (4 marks)**

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

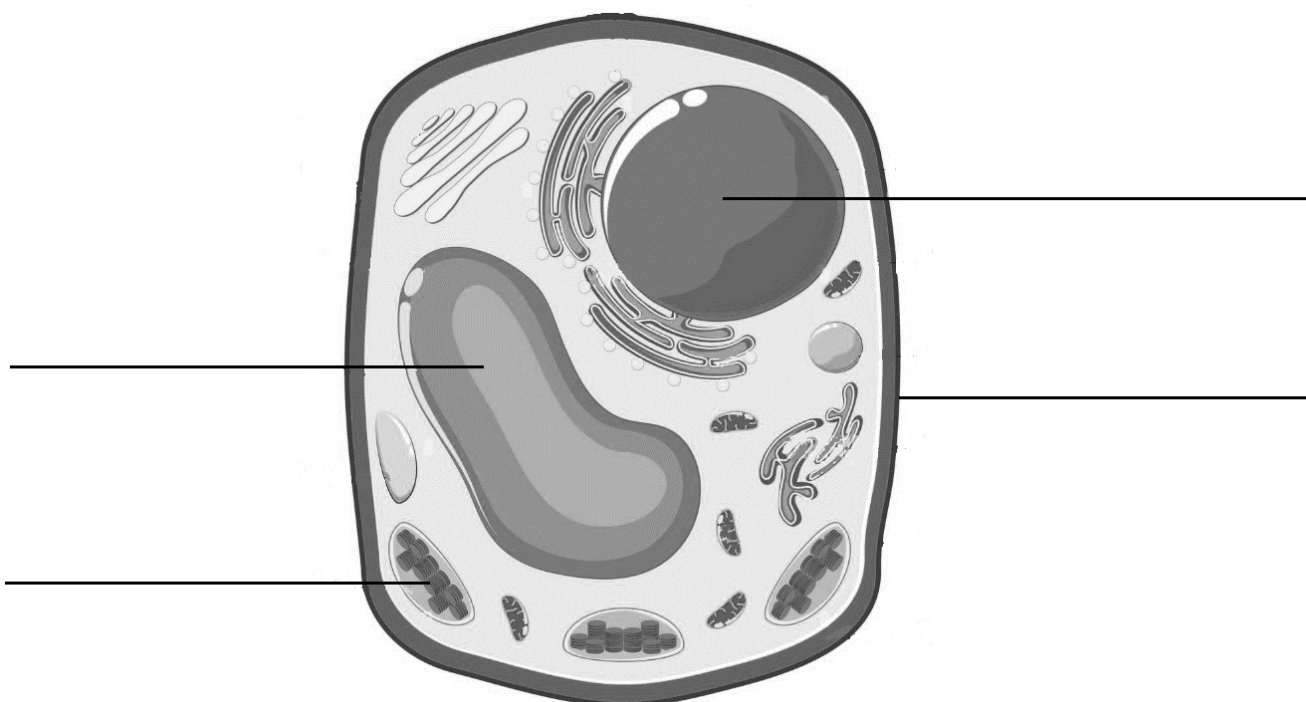


Figure 1: A typical plant cell  
(Source: <https://alamy.com>)

(1)

b. Identify the xylem and phloem in the monocot and dicot stems in Figures 2 and 3.

Dicot Stem:

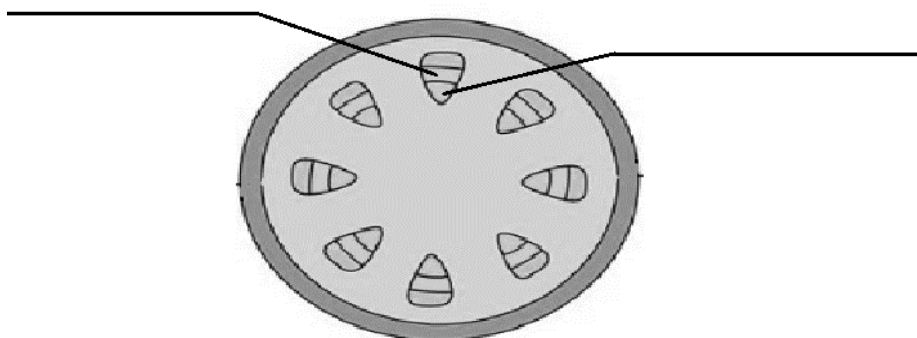


Figure 2: Cross-section for a typical dicot stem  
(Source: <https://www.thesciencehive.co.uk/xylem-and-phloem-a-level>)

(0.5)

Monocot Stem:

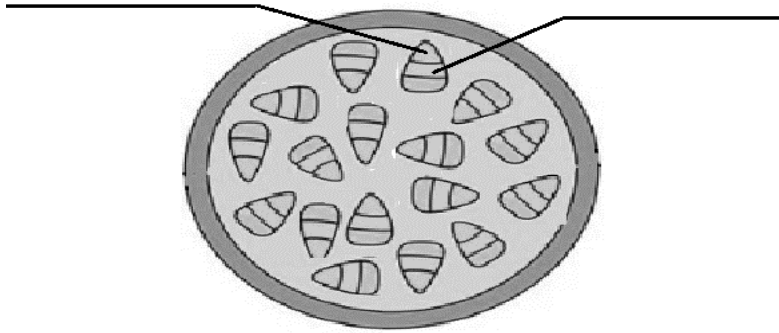


Figure 3: Cross-section for a typical monocot stem  
(Source : [https:// www.thesciencehive.co.uk/xylem-and-phloem-a-level](https://www.thesciencehive.co.uk/xylem-and-phloem-a-level))

(0.5)

c. Describe the function of:

i. Cell Wall: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

ii. Mitochondria: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

iii. The xylem as a transport system: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)





iv. The phloem as a transport system: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

**Question 2**

**C-1 (6 marks)**

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

Table 1: Typical leaves of monocotyledons and dicotyledons

	Leaf	Monocotyledon	Dicotyledon
(a)		<input type="checkbox"/>	<input type="checkbox"/>
(b)		<input type="checkbox"/>	<input type="checkbox"/>
(c)		<input type="checkbox"/>	<input type="checkbox"/>
(d)		<input type="checkbox"/>	<input type="checkbox"/>

(Source : <https://nph.onlinelibrary.wiley.com/doi/full/10.1111/nph.15371>)

(2)

b. Refer to Figure 4 to explain whether the following cross-section images belong to a monocotyledon or a dicotyledon. Your answer should include direct reference to vascular bundles.

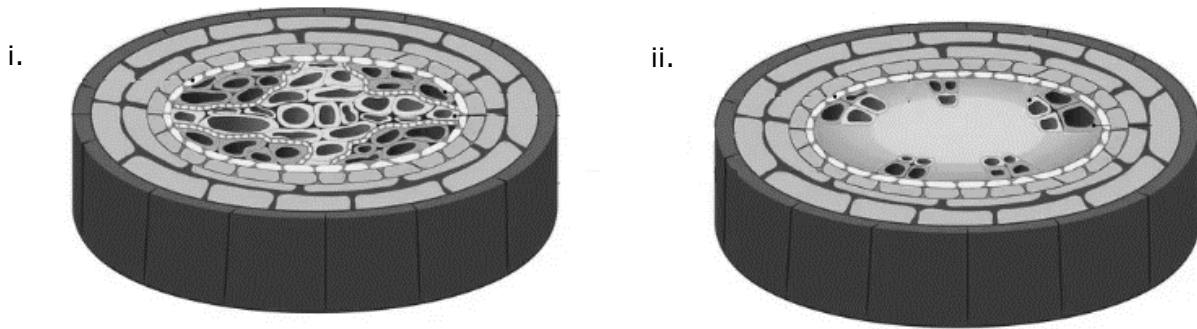


Figure 4: Microscopic structures from different monocotyledons and dicotyledons  
(Source: [www.vectorstock.com](http://www.vectorstock.com))

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(2)

c. Differentiate between:

i. The external structure of the leaf system of wheat and zucchini:

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(1)

ii. The internal seed structure of wheat and zucchini:

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(1)

**Question 3**

**K-3 (4 marks)**

a. Name the life cycle stages of a pea plant.

Life stage 1: \_\_\_\_\_ (0.2)

Life stage 2: \_\_\_\_\_ (0.2)




Life stage 3: \_\_\_\_\_ (0.2)

Life stage 4: \_\_\_\_\_ (0.2)

Life stage 5: \_\_\_\_\_ (0.2)

b. Organise the stages of the life cycle of a pea plant by assigning a number next to the pictures in Table 2 below. (1 represents the first stage and 5 represents the last.)

Table 2: Pea life stages

Image of life stage	Order in life stage (1-5)
 <p>(Source: <a href="https://www.thespruce.com">https://www.thespruce.com</a>)</p>	<p>_____</p> <p>(0.2)</p>
 <p>(Source: <a href="https://www.bobvila.com">https://www.bobvila.com</a>)</p>	<p>_____</p> <p>(0.2)</p>
 <p>(Source: <a href="https://www.gobotany.nativeplanttrust.org/">https://www.gobotany.nativeplanttrust.org/</a>)</p>	<p>_____</p> <p>(0.2)</p>



**Question 4**

**K-4 (4 marks)**

Personnel working within an agribusiness enterprise should be aware of potential hazards and possible risks.

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

<b>Hazard</b>	
i.	Fuel
ii.	Heavy objects
iii.	Electricity
iv.	Direct sunlight
v.	Not wearing the appropriate PPEs

<b>Risk</b>
Burns
Heat stroke
Back injury
Eye irritation
Electric Shock

(1)

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

Information 1: \_\_\_\_\_ (0.25)

Information 2: \_\_\_\_\_ (0.25)

Information 3: \_\_\_\_\_ (0.25)

Information 4: \_\_\_\_\_ (0.25)

c. State **TWO** reasons for maintaining a safe work environment in a crop production enterprise.

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(2)





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(2)

**Question 6**

**K-7 (4 marks)**

a. Define the following terms:

i. plant macronutrients

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(0.5)

ii. plant micronutrients

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(0.5)

b. Select by underlining **ONE** appropriate nutrient in brackets for each of the following crop requirements.

i. Healthy flowering and fruiting: (Nitrogen / Sulfur / Potassium) (0.25)

ii. Leaf growth: (Nitrogen / Calcium / Phosphorus) (0.25)

iii. Healthy rooting: (Sulfur / Phosphorus / Calcium) (0.25)

iv. Fruit turgidity: (Nitrogen / Calcium / Phosphorus) (0.25)

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

i. Necrosis on shoot tips: \_\_\_\_\_ (0.4)

ii. Deformed/stunted new leaves: \_\_\_\_\_ (0.4)

iii. Leaf margin necrosis: \_\_\_\_\_ (0.4)

iv. Interveneal chlorosis of new leaves: \_\_\_\_\_ (0.4)

v. Total chlorosis on new leaves: \_\_\_\_\_ (0.4)







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(2)

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