

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

SECONDARY EDUCATION CERTIFICATE LEVEL 2024 MAIN SESSION

Agribusiness
Controlled - Unit 1
18 th May 2022
10:00 a.m. to 11:35 a.m.

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

An agribusiness enterprise is engaging interns. To start an internship, one should be able to answer some questions about these topics:

- the biology of crops from sowing/planting to harvest;
- the requirements of crops throughout their growing period;
- the marketing of crops.

Question 1 K-2 (4 marks)

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

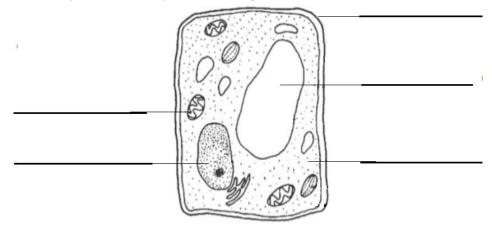


Figure 1: A typical plant cell (1) (Source: https://quizlet.com)

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

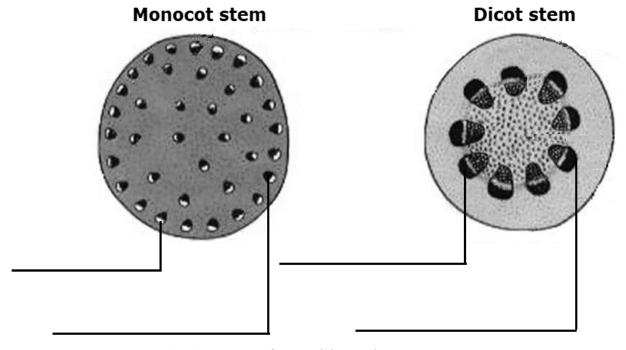


Figure 2: Cross-sections for typical dicot and monocot stems (Source: https://slideplayer.com/slide/6340123/)

(1)

i. any TWO plant cell components;	
- <u></u>	
	,
ii. The xylem and the phloem transport systems.	
ii. The xylem and the phloem transport systems.	
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Question 2 C-1 (6 marks)

a. Classify the following leaves as monocotyledons or dicotyledons in Table 1 by ticking $\ensuremath{\square}$ the correct check-box for each.

Table 1: Typical leaves of monocotyledons and dicotyledons

Leaf	Monocotyledons	Dicotyledons	
			(0.5)
			(0.5)
			(0.5)
			(0.5)

(Source: https://thepharmacognosy.com)

b. Using Figure 3 explain which of the cross-section images belong to a monocotyledon and a dicotyledon. Your answer should include direct reference to vascular bundles.

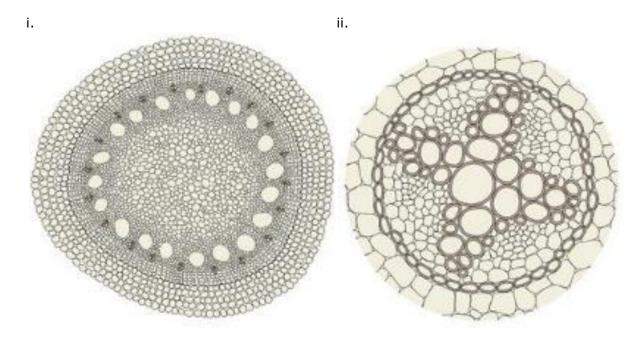


Figure 3: Microscopic structures from different monocotyledons and dicotyledons (Source: www.alamy.com)

(2	 	 	

c. Differentiate between:

1.	(e.g. bean):	structure	of the leaf	system	of monocoty	rledons (e	.g. corn)	and	dicotyle	dons
										(1)

This question continues on next page.

		, (-		dicotyledons (e.g. bean):
				(1)
Question 3				K-3 (4 marks)
The tomato is a popular March and June or else				gs in the open field between ber.
a. Name the life cycle s	tages of a tom	ato.		
		_		(0.2)
		_		(0.2)
		_		(0.2)
		_		(0.2)
		_		(0.2)
b. Organise the stages of the first		-	numbering the	pictures in Figure 4 below.
	(0.2)		(0.2)	(0.2)
24				

(0.2) ____ (0.2)

Figure 4: Stages of the life cycle of a tomato
(Sources: https://www.dreamstime.com)

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.

	Hazard
i.	electricity
ii.	pesticides and fertilisers
iii.	sharp objects
iv.	direct sunlight
٧.	dust

Risk
cuts
respiratory problems
electric shock
eye irritation
heat stroke
/1

(1)

This question continues on next page.

b.	List FOUR pieces of information needed when calling for help in case of an emer	rgency.
	i	(0.25)
	ii	(0.25)
	iii	
	iv	
_	State TWO reasons for maintaining a safe work environment in a crop production	
c.	State 1440 reasons for maintaining a safe work environment in a crop production	ni enterprise.
		(2)
Oı	uestion 5 K·	-6 (4 marks)
_	gribusiness is related to farming and farm-related commercial activities. In busing the market, demand and supply are commonly used.	ness activities
a.	Define the term 'market' in relation to agribusiness.	
		(1)
b.	Define the terms 'demand' and 'supply' in relation to agribusiness.	
	Demand:	
		(0.5)
	Supply:	
		(0.5)

c. Describe the role of the following actors in agribusiness. $% \left(1\right) =\left(1\right) \left(1\right$

producer	consumer
	(2)

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Question 6				K-7 (4 marks)			
a.	. Define the following terms:						
	i. plant micronutrients						
					(0.5)		
	ii. plant macronutrients						
					(0.5)		
b.	Select ONE appropriate macronutrient from the list below for the following crop requirements. Each macronutrient can be used more than once.						
	sulfur phosphorus	nitrogen	magnesium	potassium	calcium		
	i. Fruit turgidity:				(0.25)		
	ii. Healthy rooting:				(0.25)		
	iii. Leaf growth:				(0.25)		
	iv. Healthy fruiting:				(0.25)		
c.	Relate the following deficiency symptoms to ONE typical missing nutrient causing them:						
	i. Necrotic spots on new leaves	s:			(0.25)		
	ii. Leaf margin necrosis:				(0.25)		
	iii. Leaf purpling:				(0.25)		
	iv. Interveinal chlorosis of older	leaves:			(0.25)		
	v. Total chlorosis on new leave	s:			(0.25)		

Question 7

а.	List TWO tools required to take soil samples.	
		(0.5)
	Tool 1:	
	Tool 2:	(0.5)
b.	List FOUR of the most commonly measured parameters in soil and water analysis.	
	Parameter 1:	(0.25)
	Parameter 2:	(0.25)
	Parameter 3:	(0.25)
	Parameter 4:	(0.25)
c.	Outline FOUR reasons why it is important to measure soil and water parameters.	
		(2)

K-9 (4 marks)

Question 8 K-1		K-10 (4 marks)				
Tŀ	This question is about soils and soil fertility.					
a.	Define soil fertility.					
		(1)				
b.	Outline the following Maltese soil types:					
	Leptosols:					
		(0.5)				
	Arenosols:					
		(0.5)				
C.	Relate the texture of any ONE Maltese soil type of your choice from Quenutrient availability.	estion 8b, to water and				
		(2)				

uestion 9	C-5 (6 marks)
	(2)
	,
	(2)
	Distinguish between biotic and abiotic soil factors. Explain how the following FOUR activities can improve soil fertility. mulching: tilling: daddition of manure: Describe how earthworms and organic matter affect plant growth.

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