



L-Università
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2024 SUPPLEMENTARY SESSION**

SUBJECT: **Agribusiness**
 PAPER NUMBER: Synoptic – Unit 1
 DATE: 4th November 2024
 TIME: 2:30 p.m. to 4:35 p.m.

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

For examiners' use only:

Question	1	2	3	4	5	6	7	8	Total
Score									
Maximum	6	12	8	8	8	8	8	12	70

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

Scenario

- Tina is on a work placement at the Ministry for Agriculture laboratories.
- She is required to write a report on what she learnt after the job placement on the topics of health and safety, plant and soil science and crop requirements.

Question 1

K-4 (6 marks)

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

Hazard
lifting heavy objects
direct sunlight
dust
electricity

Risk
heat stroke
electric shock
back injury
respiratory problems

(2)

b. List the **TWO** missing information needed when calling for help in an emergency.

i. Emergency number

ii. _____ (1)

iii. Number of people involved

iv. _____ (1)

c. State **TWO** reasons for maintaining Health and Safety measures in a crop production enterprise.

_____ (2)

6

Question 2

C-2 (12 marks)

a. Outline **TWO** preventive measures required for maintaining a safe work environment in a crop production enterprise.

Preventive measure 1: _____

_____ (2)

Preventive measure 2: _____

_____ (2)

Question 3

K-1 (8 marks)

a. Identify the main organs of the plant shown in Figure 2.

(2)



Figure 2: A plant
(Source: <https://lizzieharper.co.uk/>)

b. Label the different organs of the plant in Figure 3. Use the words in the following box. (2)

Apical bud	Fruit	Flower bud	Flower
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Figure 3: A plant 2
(Source: <https://rawpixel.com/>)

This question continues on the next page.

c. Label the **FOUR** different specialised versions of different crop/ornamental plants' organs in Figure 4.

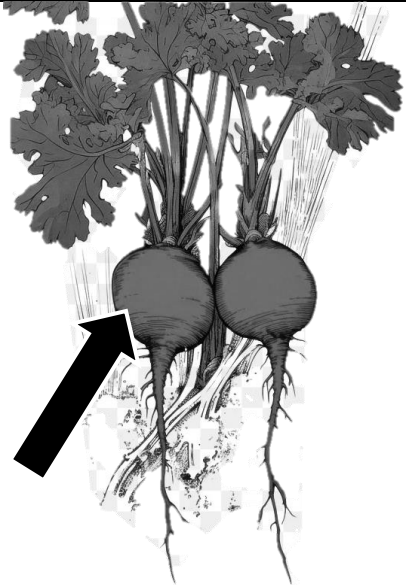
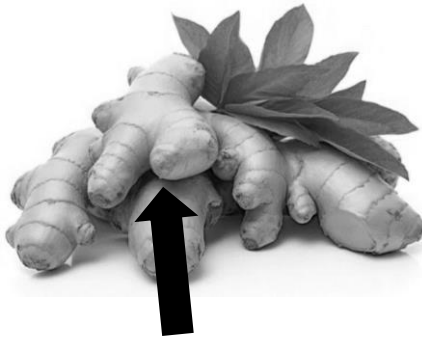
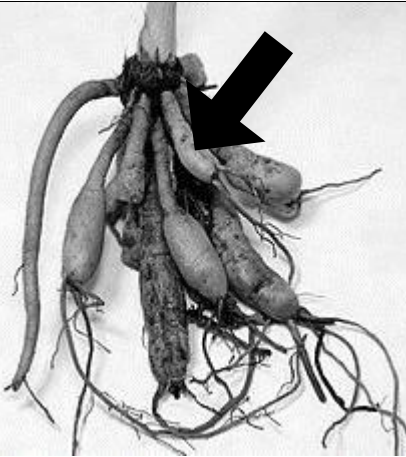

	
<p>Source: https://rawpixel.com/</p>	<p>Source: https://rawpixel.com/</p>
<p>_____ (1)</p>	<p>_____ (1)</p>
	
<p>Source: https://wikipedia.com/</p>	<p>Source: https://bonsaiempire.com/</p>
<p>_____ (1)</p>	<p>_____ (1)</p>

Figure 4: Versions of different crop/ornamental plants' organs.

Question 4

K-8 (8 marks)

a. List **TWO** types of manure commonly used in the Maltese islands.

Manure type 1: _____ (1)

Manure type 2: _____ (1)

b. Outline **TWO** advantages and **TWO** disadvantages of manure use in vegetable production.

Advantage 1: _____
_____ (0.5)

Advantage 2: _____
_____ (0.5)

Disadvantage 1: _____
_____ (0.5)

Disadvantage 2: _____
_____ (0.5)

c. Describe **ONE** storage and **ONE** application requirement of manure according to the Nitrates Action Program.

_____ (4)

8

Please turn the page.

Question 5

K-7 (8 marks)

a. Plants require both macronutrients and micronutrients. Define the terms:

i. Macronutrients:

_____ (1)

ii. Micronutrients:

_____ (1)

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

i. Healthy rooting: (Nitrogen, Phosphorus, Potassium) (0.5)

ii. Leaf growth: (Phosphorus, Potassium, Nitrogen) (0.5)

iii. Healthy flowering and fruiting: (Potassium, Sulphur, Nitrogen) (0.5)

iv. Fruit turgidity: (Nitrogen, Calcium, Phosphorus) (0.5)

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

i. Interveinal chlorosis on new leaves: _____ (1)

ii. Leaf purpling: _____ (1)

iii. Total leaf chlorosis of older leaves: _____ (1)

iv. Deformed or stunted new leaves: _____ (1)


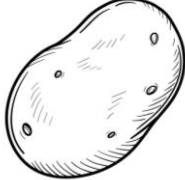


8

Question 6

K-5 (8 marks)

a. Identify the crop types of the images in Table 1 below.

Table 1: Crop types

 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Pear</div> i. _____ (0.5)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Potato</div> ii. _____ (0.5)
 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Wheat</div> iii. _____ (0.5)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Spinach</div> iv. _____ (0.5)

(Source: <http://www.vectorstock.com>)

b. Outline the following crop production types:

i. Greenhouse soil-based (geoponic) production:

_____ (1)

ii. Hydroponic crop production:

_____ (1)

This question continues on next page.

i. Which of the two irrigation water samples is less saline? Why?

(2)

ii. Which of the two soil samples is more alkaline? Why?

(2)

c. The soil lab officer is recommending that wheat is grown in Field 1 and potatoes are better suited for Field 2 in Question 8b. Justify this statement basing your answer on the soil and water parameters of Table 2.

Wheat to be grown in Field 1 rather than Field 2:

(2)

Potatoes to be grown in Field 2 rather than Field 1:

(2)