Index Number: \_\_\_\_\_ SEC35/s2.23s



### MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

#### SECONDARY EDUCATION CERTIFICATE LEVEL 2023 SUPPLEMENTARY SESSION

SUBJECT: Agribusiness

PAPER NUMBER: Synoptic - Unit 2

DATE: 2<sup>nd</sup> November 2023

TIME: 11:30 a.m. to 1:35 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	8	8	12	8	12	8	8	70

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

#### **Scenario**

- Mary is gathering information to make a leaflet for the Agricultural Directorate.
- She will be needing information on aquaculture, plant physiology and propagation as well as methods to preserve fresh products' shelf life.

Que	estion 1 K-2 (6 ma	arks)	
a. L	List <b>TWO</b> nutrients required for fish to grow.		
N	Nutrient 1:	(1)	
ľ	Nutrient 2:	_ (1)	
b. [	Describe the following feeds used in fish husbandry.		
i	. Dry feed:		
_			
ii	i. Live feed:		
-		(1)	
c. (	Outline the role of the <b>TWO</b> nutrients you listed in Question 1a for healthy fish growth.		
F	Role of nutrient 1:		
-			
F -	Role of nutrient 2:		(
Que	estion 2 K-3 (8 ma	arks)	
a. L	List <b>TWO</b> common fish health problems, apart from fish pop eye and lateral line disease.		
F	Fish health problem 1:		

Fish health problem 2: \_\_\_\_\_\_(2)

Outline <b>ONE</b> symptom of each common fish health problem you listed in Question 2a.
Symptom of fish health problem 1:
(1)
Symptom of fish health problem 2:
(1)
Identify the correct treatment procedure to control each of the <b>TWO</b> fish health problems you listed in Question 2a.
(4)
uestion 3 K-6 (8 marks)
Define photosynthesis.
(2)
Describe how the following <b>TWO</b> factors affect the rate of photosynthesis.
i. Factor 1 – Temperature:
(1)
ii. Factor 2 – Carbon dioxide concentration:

This question continues on next page.

c.	Describe how a plant reacts to the direction of light and gravity to maximise photosynthesi	s.
		_
		(4)
Qı	uestion 4 C-3 (12 mark	ks)
a.	The most common type of protected cultivation is within a greenhouse. Explain how following <b>TWO</b> parameters can be modified in a protected cultivation.	the
	i. Light (increase and decrease):	
		(2)
	ii. Heat (increase and decrease):	
L		(2)
D.	Compare <b>TWO</b> characteristics of mister/fogger irrigation and drip irrigation systems.  Comparison of characteristic 1:	
		(2)
	Comparison of characteristic 2:	

c.	. Discuss how light can be used to control:	
	Flowering:	
		(2)
	Germination:	
		(2)
_		
_		(8 marks)
_	Question 5  . List <b>TWO</b> factors that contribute towards natural product spoilage and decay.	(8 marks)
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_	. List <b>TWO</b> factors that contribute towards natural product spoilage and decay.	(1)
a.	. List <b>TWO</b> factors that contribute towards natural product spoilage and decay.  Factor 1:	(1)
a.	. List <b>TWO</b> factors that contribute towards natural product spoilage and decay.  Factor 1:  Factor 2:  Outline how the following <b>TWO</b> practices can slow down the process of natural produ	(1) (1) ct spoilage
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a.	. List <b>TWO</b> factors that contribute towards natural product spoilage and decay.  Factor 1:  Factor 2:  Outline how the following <b>TWO</b> practices can slow down the process of natural produ and decay:  i. rapid reduction in temperature:	(1)(1) ct spoilage
a.	List <b>TWO</b> factors that contribute towards natural product spoilage and decay.  Factor 1:	(1)(1) ct spoilage
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	Herbs	Carrots	
	Herbs	Carrots	
			(
estion 6		C-5 (1	2 mark
Outline the importa	nce of keeping suitable leve	els of hygiene in post-harvesting proce	
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Outline the importa	nce of keeping suitable leve		
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Explain why the fol market.	lowing post-harvest practio	els of hygiene in post-harvesting proce	esses.

c. Consider the presentation of the following strawberries that were purchased.



Figure 1. Packaged product. (Source: https://shorturl.at/oBCIR)

Evaluate the presentation of these strawberries in terms of:

The grading of the product:		
	(2)	
The packaging of the product:		
		— 12
	(2)	12

Please turn the page.

Question 7	K-9 (8 marks)
a. Mention the different types of germination.	
Germination type 1:	(1)
Germination type 2:	(1)
b. Outline the following conditions that are required f	or optimum propagation of plants.
i. Sheltering:	
ii. Free from pathogens/pests:	(1)
	(1)
c. Describe <b>TWO</b> different techniques used to propag	ate plants.
	(4)
Question 8	K-10 (8 marks)
a. List <b>TWO</b> growing media used for plant propagatio	n and growth.
Growing medium 1:	(1)
Growing medium 2:	(1)

#### DO NOT WRITE ABOVE THIS LINE

b. State a suitable growing medium for:		
Open field production:	(1)	
Production of seedlings:	(1)	
c. Outline the characteristics of <b>ONE</b> of the growing media listed in Question 8a.		
Growing Medium chosen:		
Water drainage:		
	(1)	
Pathogen/pest free:		
	(1)	
Nutrient-holding capacity:		
	(1)	
Aeration:		5
	(1)	

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