Class



MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

SECONDARY EDUCATION CERTIFICATE LEVEL 2023 MAIN SESSION

PAPER NUMBER: DATE:	Agribusiness Controlled – Unit 2 18 th May 2022	
TIME:	10:00 a.m. to 11:35 a.m.	
THIS PAPER SHO	ULD BE RETURNED TO THE INVIGIONATION.	LATOR
Name of candidate		
I.D. number		
School		

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

Scenario

- Peter works at a pet shop that supplies customers with a variety of agricultural, pet care and aquarium materials.
- He specialises in aquarium setups and fish breeding.
- He is also in charge of the horticulture section.
- Peter is very popular with customers as he provides advice on the use of plant protection products and ways to grow crops from seeds and seedlings.

Question 1 K-1 (4 marks)

a. Match the **FOUR** fish species in Figure 1 to their respective habitat, by drawing a line between them.

Fish Habitat Cold fresh water Tilapia Tropical stone-scape fresh water Clown fish Marine Mediterranean Goldfish Marine tropical Sea bream (1)

Figure 1: Fish and their habitats (Sources: https://www.alimentarium.org; https://www.turbosquid.com; https://www.petmd.com; https://www.spador.it)

b. Label the internal and external morphology of a goldfish indicated by the arrows in Figure 2.

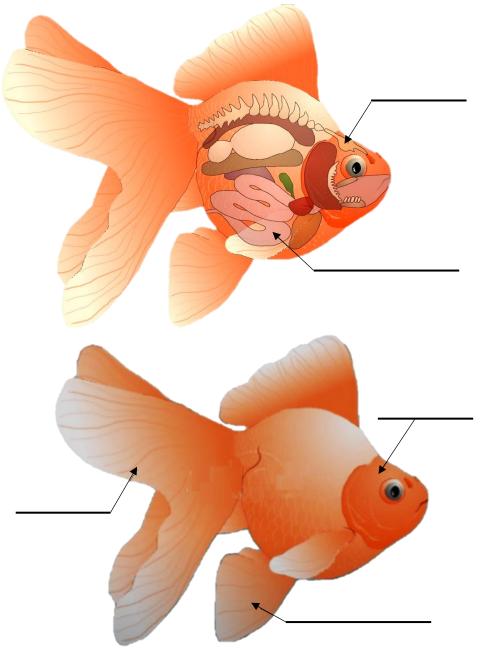


Figure 2: Features of a goldfish

(Source: http://solidgoldaquatics.com) (1)

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c.	Outline the	following	FOUR	fish	habitats	in	terms	of	salinit	y and	tem	peratur	·e
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Cold fresh water	Marine Mediterranean	Tropical fresh water	Marine tropical
			
uestion 2			C-2 (6 marks)
	mmend a minimum volume a pair of angelfish. Justify th		
i. Fish size:			
ii. Aggression:			
			(1)

b.	Explain TWO benefits of water change of a fish tank.					
	Benefit 1:					
	(1)					
	Benefit 2:					
	(1)					
С.	Discuss the importance of using rocks and plants as aquarium décor in relation to fish health.					
	(2)					

Please turn the page.

Q	uestion 3	K-5 (4 marks)
a.	List TWO processes by which water travels through soil.	
	Process 1:	(0.5)
	Process 2:	(0.5)
b.	. Describe the following TWO plant structures in relation to the intake and water and soil nutrients.	d internal transport of
	Rooting system:	
	Xylem vessels:	
c.	Outline the FIVE steps for the process of transpiration.	
		(2)

Q	Question 4 K-		
а.	. Define "photosynthesis".		
b.	. Several factors affect the rate of photosynthesis. Describe how the follow affect the rate of photosynthesis:	ring TWO factors	
	i. Carbon dioxide concentration:		
		(0.5)	
	ii. Water availability:		
		(0.5)	
c.	Describe how a plant responds to gravity and light direction to maximise pho	otosynthesis.	
		(2)	

Please turn the page.

Question 5 C-3 (6 marks)

a.	The conditions in a greenhouse can be modified to optimise the growth and yield of Explain how the following parameters can be modified in a protected cultivation.	f a plant.
	i. Light (increase and decrease):	
	ii. Humidity (high and low):	(1)
b.	. Compare TWO characteristics of mister irrigation and drip irrigation systems.	
	Comparison of characteristic 1:	
	Comparison of characteristic 2:	
		(1)
c.	Some factors can be used to control plant processes. Discuss how temperature can be control germination and growth rate in horticulture.	e used to

	(2)
Qı	uestion 6 C-4 (6 marks)
a.	Different types of plant protection products are used. Distinguish between synthetic chemicals and biological products.
	(2)
b.	Plant protection products are generally applied with caution. Discuss TWO good practices when applying plant protection measures.
	Measure 1:
	(1)
	Measure 2:
	(1)

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estion 7	K-8 (4 marl
List FOUR factors that contribute towards natural pro-	oduct spoilage and decay.
Factor 1:	(0.:
Factor 2:	(0.:
Factor 3:	(0.:
Factor 4:	(0.:
	·
Outline the following TWO practices that slow down and decay:	the process of natural product spoils

ii. Rapid reduction in tem	perature:		
			(0.5)
. Describe suitable packag decay:	ng for the following TV	VO products, in order to av	oid spoilage and
	Fresh herbs	Lettuce	
			(2)
			(2)
Question 8			K-9 (4 marks)
. Mention TWO types of ge	rmination.		
Tyne 1:			(0.5)
Type 2			(0.5)
o. Outline why the following	FOUR conditions are re	equired for optimum propaga	ation of plants.
i Temperature			
			(0.25)
iii. Water availability:			
			(0.25)

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					(0.2
Describe 1	the following FOUR p	ropagation techniqu	es.		
	Grafting	Layering	Bulb	Leaf	
	Graning	Layering	Duib	LCui	