



L-Università  
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2023 MAIN SESSION**

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SUBJECT:	<b>Agribusiness</b>
PAPER NUMBER:	Controlled – Unit 2
DATE:	18 <sup>th</sup> May 2022
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**

- 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.

<b>Fish</b>	•	<b>Habitat</b>
 Tilapia	•	• Cold fresh water
 Clown fish	•	• Tropical stone-scape fresh water
 Goldfish	•	• Marine Mediterranean
 Sea bream	•	• Marine tropical

(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.

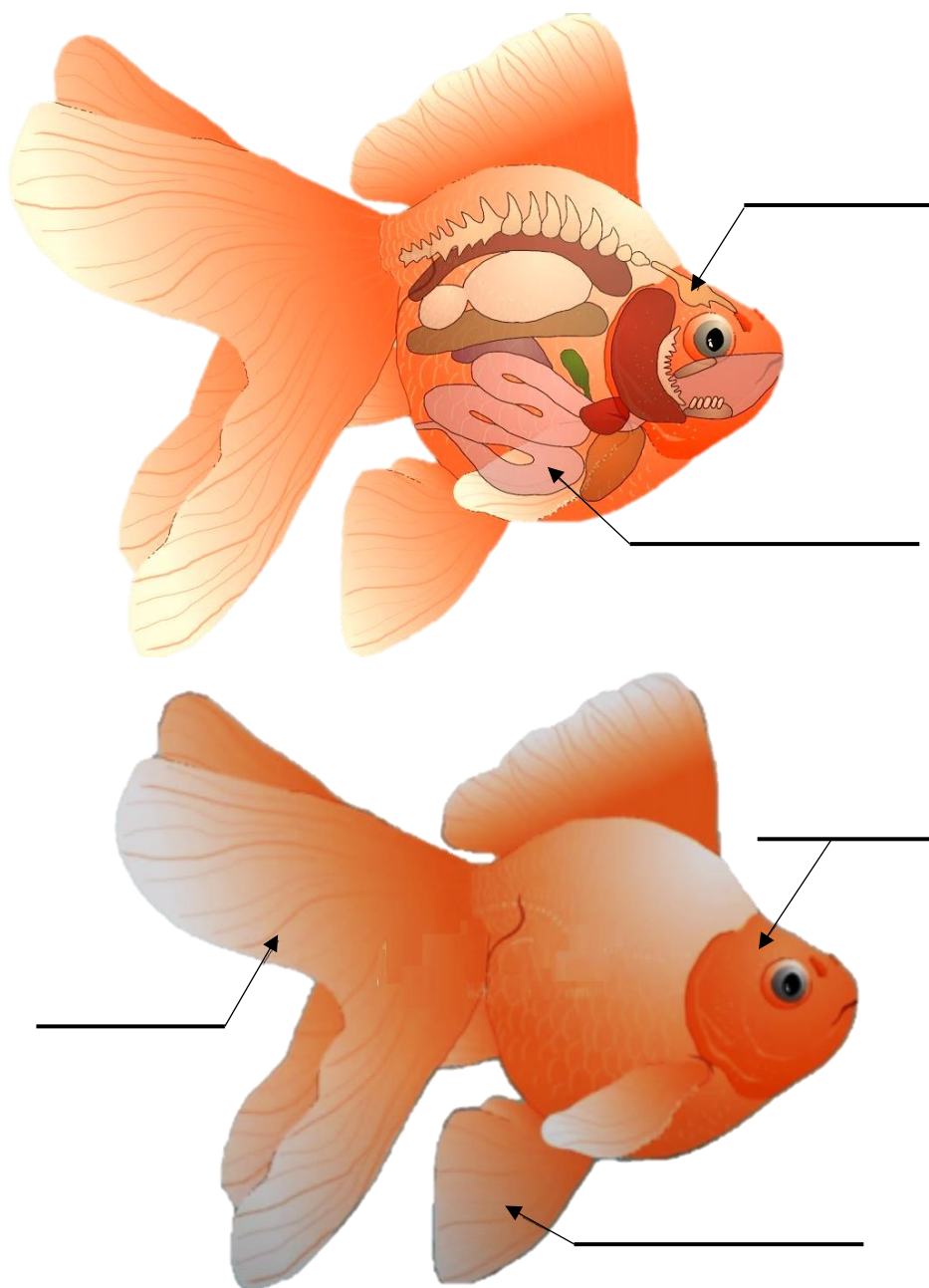


Figure 2: Features of a goldfish

(Source: <http://solidgoldaquatics.com>)

(1)

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b. Explain **TWO** benefits of water change of a fish tank.

Benefit 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Benefit 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

c. Discuss the importance of using rocks and plants as aquarium décor in relation to fish health.

\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_ (2)

***Please turn the page.***

**Question 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 internal transport of water and soil nutrients.

Rooting system: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

Xylem vessels: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

c. Outline the **FIVE** steps for the process of transpiration.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)



**Question 5**

**C-3 (6 marks)**

a. The conditions in a greenhouse can be modified to optimise the growth and yield of a plant. Explain how the following parameters can be modified in a protected cultivation.

i. Light (increase and decrease): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

ii. Humidity (high and low): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

b. Compare **TWO** characteristics of mister irrigation and drip irrigation systems.

Comparison of characteristic 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Comparison of characteristic 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

c. Some factors can be used to control plant processes. Discuss how temperature can be used to control germination and growth rate in horticulture.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







ii. Rapid reduction in temperature: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

c. Describe suitable packaging for the following **TWO** products, in order to avoid spoilage and decay:

Fresh herbs	Lettuce
-------------	---------

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)

**Question 8**

**K-9 (4 marks)**

a. Mention **TWO** types of germination.

Type 1: \_\_\_\_\_ (0.5)

Type 2: \_\_\_\_\_ (0.5)

b. Outline why the following **FOUR** conditions are required for optimum propagation of plants.

i. Temperature: \_\_\_\_\_  
\_\_\_\_\_ (0.25)

ii. Suitable growing medium: \_\_\_\_\_  
\_\_\_\_\_ (0.25)

iii. Water availability: \_\_\_\_\_  
\_\_\_\_\_ (0.25)

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