SEC35/c2.19m

L-Università ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

SECONDARY EDUCATION CERTIFICATE LEVEL
2018 MAIN SESSION

SUBJECT:	**Agribusiness**
PAPER NUMBER:	Controlled – Unit 2
DATE:	29th May 2018
TIME:	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:

Your school is promoting food security and nutrition in Malta and Gozo. Your school wants to encourage people to make use of products which are farmed in Malta and Gozo. However, before starting this project, your school wants to make sure that it has a group of students that know very well the principles related to agriculture and fisheries.

Question 1 **K1 (4 marks)**

Fill in the following table by briefly outlining the morphological differences between the cichlid and the tuna. The first one has been done for you as an example:

	Morphology	**Cichlid**	**Tuna**
Interior	Heart	*Smaller heart since it is not as fast as the tuna and does not require as much oxygen distribution to the whole body.*	*Bigger heart to pump more blood since the tuna is a fast swimmer.*
	Gills		
	Skeleton		
Exterior	Fins		
	Lateral lines		

(Total: 4 marks)

Question 2 **K2 (4 marks)**

Choose **EIGHT** nutrients from the following. For each nutrient chosen, briefly state **ONE** role in fish.

Vitamin B	Iron	Vitamin A	Carbohydrates	Potassium
Fat	Vitamin C	Calcium	Proteins	Fibre

Nutrient 1: _____

_____

_____ (0.5)

Nutrient 2: _____

_____

_____ (0.5)

Nutrient 3: _____

_____

_____ (0.5)

Nutrient 4: _____

_____

_____ (0.5)

Nutrient 5: _____

_____

_____ (0.5)

Nutrient 6: _____

_____

_____ (0.5)

Nutrient 7: _____

_____

_____ (0.5)

Nutrient 8: _____

_____

_____ (0.5)

(Total: 4 marks)

Question 3 **K4 (4 marks)**

Describe **ONE** correct treatment procedure to control the following fish diseases:

a. Lateral line disease:

_____

_____

_____ (1)

b. Fish lice:

_____

_____

_____ (1)

c. White spot (ich):

_____

_____

_____ (1)

d. Fin rot:

_____

_____

_____ (1)

(Total: 4 marks)

Please turn the page.

Question 4 **C3 (6 marks)**

Answer the following questions related to the control of flowering in horticulture using light and /or temperature:

a. What is vernalisation and how does it affect flowering in certain plants?

_____

_____

_____

_____ (2)

b. Why are artificial lighting and blackouts used in certain flowering plants?

_____

_____

_____

_____ (2)

c. Why is heating and cooling important in the control of flowering in plants?

_____

_____

_____

_____ (2)

(Total: 6 marks)

Question 5 **K6 (4 marks)**

Choose and describe **FOUR** plant physiological processes from the following list:

Respiration	Osmosis	Geotropism	Photosynthesis
Phototropism	Translocation	Germination	Transpiration

a. Physiological process 1: _____

_____

_____

_____(1)

b. Physiological process 2: _____

_____

_____

_____(1)

c. Physiological process 3: _____

_____

_____

_____(1)

d. Physiological process 4: _____

_____

_____

_____(1)

Please turn the page.

Question 6 **K8 (4 marks)**

Describe **ONE** symptom for each of the following plant diseases and nutritional deficiencies.

a. Potato late blight

_____

_____

_____(1)

b. Onion rust

_____

_____

_____(1)

c. Potato nitrogen deficiency

_____

_____

_____(1)

d. Onion phosphorus deficiency

_____

_____

_____(1)

(Total: 4 marks)

Question 7 **C4 (6 marks)**

The following sentences are related to the control of pests, diseases and nutritional deficiencies in plants. Read carefully and choose **ONE** answer by underlining the correct answer.

a. How can a farmer quickly correct nitrogen deficiency in potatoes?

i. Apply a fertiliser high in nitrogen like ammonium sulfate with irrigation.

ii. Apply manure near the potato plants.

iii. Practice crop rotation. (1)

b. A farmer wants to grow zucchini in summer in his field but he knows that pesticides alone will not control the insects that transmit virus diseases. What is the best solution?

i. Practice intercropping.

ii. Use a variety of zucchini resistant to virus diseases.

iii. Sterilise the soil before planting. (1)

c. For the control of insect pests such as aphids, farmers may use predatory insects such as the ladybird to control these pests by releasing them on the infested plants. This practice is called:

i. Cultural control.

ii. Chemical control.

iii. Biological control. (1)

d. Choose the best technique to control pests and diseases in the soil without the use of pesticides.

i. Solarisation.

ii. Field burning.

iii. Tillage. (1)

e. One of the following statements on traps is not correct. Choose the **incorrect** statement.

i. Traps can be used to monitor the population of a pest in a field.

ii. Traps can be used to control diseases such as fungi and bacteria.

iii. To be effective traps need to have an attractant such as a lure or pheromone. (1)

This question continues on the next page.

f. One of the following statements on crop rotation is not correct. Choose the **incorrect** statement.

i. Crop rotation is done by planting the same crop species over and over again.

ii. Crop rotation maintains soil fertility.

iii. Crop rotation reduces the build-up of pests and diseases in the field. (1)

(Total: 6 marks)

Question 8 **C5 (6 marks)**

Explain how the following factors can influence the harvesting time of vegetables. Use **ONE** example to explain each factor better.

a. Weather conditions

_____

_____

_____

_____ (2)

b. Fertility

_____

_____

_____

_____ (2)

c. Species and cultivar

_____

_____

_____

_____ (2)

(Total: 6 marks)

Question 9 **K10 (4 marks)**

Consider the following growing objectives and select the correct growing medium. Choose **ONE** correct answer. Underline the correct answer.

a. Select a growing medium that has the best water drainage.

i. Compost

ii. Perlite

iii. Peat (1)

b. Select a growing medium which is **not** pathogen/pest free.

i. Soil from a field

ii. Perlite in a sealed package

iii. Vermiculite in a sealed package (1)

c. Select a growing medium which improves aeration most.

i. Soil

ii. Compost

iii. Perlite (1)

d. Select a growing medium which contains a good amount of plant nutrients in it.

i. Rock wool

ii. Compost

iii. Expanded clay (1)

(Total: 4 marks)

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