SEC35/c1.18m

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA

SECONDARY EDUCATION CERTIFICATE LEVEL

MAY 2016

SUBJECT:	**Agribusiness**
PAPER NUMBER:	Controlled – Unit 1
DATE:	3rd June 2016
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 _____

Scenario:

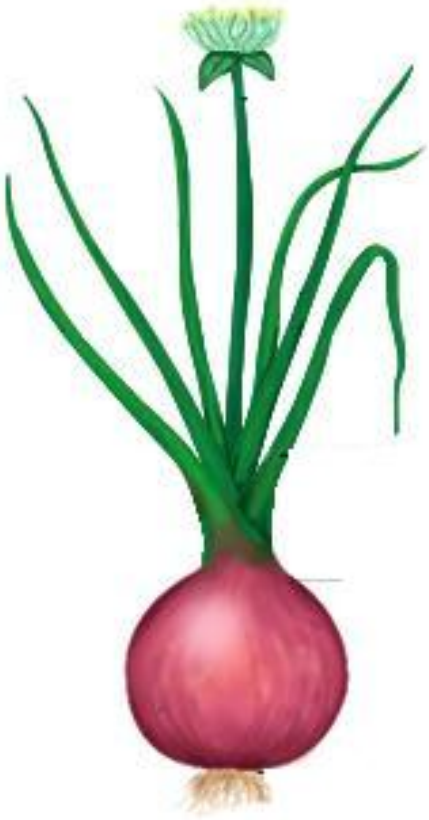
You are employed with a farm advisory service agency. Your employer has asked you to prepare an information package for young farmers setting up their business. Answer the following questions that will serve as a guideline for this package.

Question 1 **K1 (4 marks)**

Label the following structures on the pictures below:

Leaves, Stem, Root, Flower, Fruit

a. Onion (Indicate **four** organs in Picture 1 and **one** organ in Picture 2)



Picture 1

Picture 2

b. Tomato (indicate **all** organs in Picture 3)

Picture 3

c. Broccoli (indicate **three** organs in Picture 4, **one** organ in Picture 5 and **one** organ in Picture 6)

Picture 4

Picture 5

Picture 6

d. Petunia (indicate **four** organs in Picture 7 and **one** organ in Picture 8)

Picture 7

Picture 8

Question 2 **C1 (6 marks)**

Explain the structures of the following plants by taking into consideration the roots, fruits, seeds, flower, stem and leaves.

a. *wheat*

_____

_____

_____

_____

b. *bean*

_____

_____

_____

_____

Question 3 **K2 (4 marks)**

Fill in the blanks by choosing **one** from the below to describe different plant body tissues, transport system and plant cell components.

xylem,	*nucleus,*	*phloem,*	*chloroplast,*	*cell membrane,*
cytoplasm,	*collenchyma,*	*mitochondria,*	*vacuole,*	*cell wall*

a. _____ transports water and nutrients.

b. The _____ is semi-permeable.

c. The _____ is a large sac inside the plant cell that stores water and other substances.

d. The _____ is the organelle that carries out photosynthesis.

e. _____ transports glucose.

f. The _____ contains the genetic material of the cell.

g. _____ cells are elongated and have thick cell walls.

h. Energy in the cell is produced by chemical reactions taking place in the _____.

i. The _____ is the fluid within which all cell organelles are found.

j. The _____ prevents the cell from bursting and makes the cell rigid.

Question 4 **K3 (4 marks)**

The pictures below illustrate the life-cycle of a tomato plant.

a. Label the photos in the space provided near each picture by choosing the correct word from the list below.

Growth, Germination, Pollination, Seedling, Fruiting, Seed dispersal, Seed, Flowering

i.

ii.

iii.

iv.

v.

vi.

vii.

viii.

b. Write the following life-cycle stages in their correct order, starting from the first stage:

Growth, Germination, Pollination, Seedling, Fruiting, Seed dispersal, Seed, Flowering

i. _____

ii. _____

iii. _____

iv. _____

v. _____

vi. _____

vii. _____

viii. _____

Question 5 **K5 (4 marks)**

Fill in the blanks by choosing **one** word from the following list to outline the fruits' and vegetables' nutritional features.

Fats, Vitamins, Mineral, Sugars, Legumes, Vegetables

a. Oranges are a very good source of _____.

b. _____ are a good source of fibre which is needed for good intestinal health.

c. _____ are plants that have seeds rich in proteins.

d. Olive oil and sunflower oil are good sources of _____.

e. The banana is a fruit containing potassium which is an example of a _____.

Question 6 **C3 (6 marks)**

Discuss **two** advantages and **two** disadvantages of manure application in agriculture.

Advantage 1:_____

_____

Advantage 2:_____

_____

Disadvantage 1:_____

_____

Disadvantage 2:_____

_____

Question 7 **K8 (4 marks)**

Soil testing is an essential tool in determining the suitability of a soil for crop growth and production. Several parameters are tested in a soil laboratory.

Define the terms:

a. pH

_____

_____

_____

b. Conductivity

_____

_____

_____

Question 8 **K9 (4 marks)**

Plant growth is affected by various biotic and abiotic soil factors. For each statement below, choose the correct term from the following list:

Earthworms,	*Clayey soil,*	*Cold soil,*	*Pathogens,*
Dry soil,	*Alkaline soil,*	*Mycorrhizae,*	*Soil rich in organic matter*

a. These fungal threads form a symbiotic relationship with plant roots in which they help the plant absorb more water and nutrients.

_____

b. This soil is not suitable for plant growth because plants wilt quickly if cultivated there:

_____

c. These are small animals which are important to aerate and recycle organic matter in the soil:

_____

d. This soil will reduce the amount of oxygen reaching the plant roots:

_____

e. This soil is fertile due to it providing nutrients, air and water retention:

_____

f. These are harmful organisms that can cause diseases in the plant:

_____

g. This soil will prevent some micro-nutrients such as iron from being absorbed by the plant roots:

_____

h. In this type of soil, which is commonly found in the winter months, plants grow slowly:

_____

Question 9 **K10 (4 marks)**

a. For each of the following cases, suggest **one** activity that can be carried out by a farmer to improve soil fertility.

i. A soil that loses a high amount of water by evaporation:

_____

ii. A soil too hard for planting:

_____

iii. A soil whose test result shows that it is too acidic for crop growth:

_____

iv. A soil whose test results shows that it is poor in Nitrogen:

_____

b. What can a farmer do to increase the level of organic matter in the soil?

_____

c. The use of legumes in _____ _____ is important to increase the level of Nitrogen in the soil without the use of fertilisers.

d. What can a farmer do to increase the amount of soil in the field?

_____

e. What can a farmer add to a clayey soil with a very poor water drainage?

_____