

Ba Sangam College
Year 11
Agriculture
Worksheet 1

Answer the following question. **Note:** Answer with blue or black ink, no use of pencil.

Multiple Choice:

1. Identify the field experiment design given below:

T=treatment		C= Control					
T1	C1	T2	T3	C2	T4	T5	C3

- A. Replicated Control Design
B. Demonstration Strip Design
C. Replicated Measurement t-test Design
D. Split Plot Design
2. In relation to field trial, type of mulching material can be classified as
- A. Treatment
B. Control
C. Variable
D. Replication
3. Soils found under tropical rainforests with a relatively high content of iron and aluminium oxides.
- A. Latosol
B. Podzol
C. Tundra soil
- D. Alluvial soil
4. A soil structure found in A- horizon in a soil profile
- A. structure less.
B. prismatic.
C. blocky.
D. platy

5. A treatment [T] is
 - A. Number of times the experiment is repeated
 - B. The amount of the variable tested by the trial
 - C. Agriculture field trials
 - D. A plan of schedule of work
6. Field trials are carefully designed and conducted to ensure that results are
 - A. Valid and reliable
 - B. Unbiased
 - C. Doubtful
 - D. Conclusive
7. Which type of design is appropriate when collecting quantitative data, such as yield
 - A. Split plot design
 - B. Factorial design
 - C. Replicated control design
 - D. Randomized complete block design

Fill in the Blanks:

- a) _____ is the mixture of minerals, organic matter, gases, liquids and the countless organisms that together support life on earth.
- b) _____ soils are found under tropical rainforests with relatively high content of iron and aluminium oxides.
- c) _____ is any activity that modifies the visible features of an area of land, including living elements such as flora and fauna.
- d) _____ a cereal grain that contains the germ, endosperm and bran.
- e) _____ the botanical name of African rice which is grown and eaten in Fiji.

Short Answers:

1. The following are the height of 10 recently germinated rice plants in mm
5,7,7,6,8,7,5,3,10,9 . Calculate the:
The sample mean
The median
The mode
The range
The variance
2. Identify agricultural enterprises conducted on the school farm in the preceding three [3] years.
3. Recognize and discuss challenges faced by the agricultural enterprises
4. Design and conduct field trials to determine possible solutions

5. Evaluate the findings of the field trials and recommend solutions, which are environmentally friendly, to be implemented.
6. List 2 factors which influence soil structure.
7. Why is soil consistence important?
8. List any two methods used to determine the texture of a soil
9. Discuss two advantages and two disadvantages of asexual propagation.
10. Discuss one way in which micro propagation can prevent a plant from extinction.
11. State three physical properties of soil.

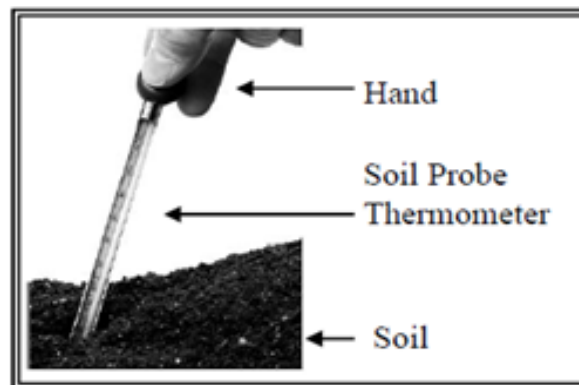
The soil colour of an area is described as **10R 5/8**.

Name the **colour system** which was used to determine this colour.

State **one negative** effect that using heavy implements has on soil.

The diagram on the right illustrates a farmer using a Soil Probe Thermometer to take the temperature of a soil.

State **one** reason why the farmer keeps this thermometer **shaded** from direct sunlight until **after** recording the temperature reading of the soil.



Source: Adapted from <http://www.leevalley.com>

The diagram below illustrates a fortified food product.



Source: Adapted from <http://www.moziru.com>

Explain **one** reason why some food items are fortified during the value adding process.

Discuss **one** way in which biosecurity officers based at Fiji’s international ports **safeguard** Fiji’s flora and fauna.

State **one** way in which a school could deal with the challenge of a lack of land for agriculture gardens.

The diagram below represents the field trial layout design used by students to determine the type of mulch material suitable for use on a French bean crop.

T= Treatment				C = Control			
T1	C1	T2	T3	C2	T4	T5	C3

Source: *Agricultural Science for Year 11*, Ministry of Education, 2015

Explain **one** reason why the field trial has a **control**.

Name the **process** which occurs when raw food is left to soak in brine or vinegar.

Explain **one** effect that cooking has on **raw** agricultural products.

State **one** reason why Fiji’s **endemic** flora and fauna must be maintained.

Essay

Soil depth is the vertical distance into the soil from the surface to a barrier layer, that stops the downward growth of plant roots.

With reference to the statement above, discuss **three**

- importance of the depth of soil on a farm
- factors which influence the depth of soil

- ways of increasing the depth of soil on a farm