



DEPARTMENT OF  
EDUCATION

LOWER SECONDARY  
SCHOOL CERTIFICATE  
EXAMINATIONS  
(LSSCE)

**AGRICULTURE**

Thursday  
15th October 2015

Time allowed:  
3 hours

12:30 pm – 3:30 pm

Ag

**INSTRUCTIONS TO CANDIDATES:**

*(To be read out by the external invigilator before the start of the examination)*

There are **46** questions in this paper worth **50** marks. Attempt **ALL** questions even if you are not so sure of some of the answers.

The Examination is divided into three parts:

**PART A: Multiple-Choice (Questions 1 to 25)**

**PART B: Short-Answer (Questions 26 to 45)**

**PART C: Extended Response (Question 46)**

The Answer Sheet is part of the Examination Booklet. Take out the middle pages and remove the Answer Sheet by tearing along the perforation. You may use the blank sheet for rough work.

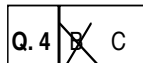
For each question in **PART A** choose the correct answer and write the letter A, B, C or D in the space provided on the **ANSWER SHEET**.

For each question in **PART B and PART C** work out the answer and write the answer in the space provided on the **ANSWER SHEET**.

If you find a question very difficult, do not spend too much time thinking about it. Leave the question out and go on with the rest of the paper. If you have time in the end, return to the difficult questions and think about them more carefully.

Write your answers in BLUE or BLACK ink (pen or biro).

If you decide to change an answer, make your correction as shown below so that it is clear to the markers what your final answer is. Do **NOT** use **correction fluid** on your answer sheet.



Hand in **BOTH** the Answer Sheet and the papers used for rough work at the end of the examination.

**Extra time will NOT be allowed to complete the examination under any circumstances.**

**The penalty for cheating or assisting others to cheat in national examinations is non-certification.**

**DO NOT TURN OVER THIS PAGE AND DO NOT WRITE UNTIL YOU ARE TOLD TO START.**



**QUESTION 5**

Malaria can also be found in other animals, apart from human beings.

What causes malaria?

- A. Bacteria                      B. Protozoan                      C. Nematodes                      D. Fungus

**QUESTION 6**

Which of the following is **NOT** a physical property of soil? Soil \_\_\_\_\_.

- A. pH                                  B. profile                                  C. structure                                  D. texture

**QUESTION 7**

The greatest risk for farmers involved in agro-industries that export their products is the changing international \_\_\_\_\_.

- A. weather patterns.                                  B. agriculture technology.  
C. leaders of countries.                                  D. prices for these products.

**QUESTION 8**

*Reduced soil fertility* is one effect of agricultural activities that normally occurs in local gardens.

Which of the following is true about this effect?

*Reduced soil fertility* will occur

- A. if crop rotation is not regularly used.  
B. when livestock are stocked within local gardens.  
C. by planting more cover crops.  
D. by increasing the number of legume plants.

**QUESTION 9**

What is the term used to describe all kinds of plants and plant life in a particular area/region at a particular time?

- A. Plants                                  B. Flora                                  C. Fauna                                  D. Algae

**QUESTION 10**

What is the scientific name of the wind pipe that animals use for breathing?

- A. Oesophagus                      B. Gizzard                      C. Trachea                      D. Lungs

**QUESTION 11**

The use of stakes is one agricultural technique that is used to support plants.

Which of the following plants **DOES NOT** always need staking?

- A. Yams                                  B. Sugar cane                                  C. Banana                                  D. Tomatoes

**QUESTION 12**

From the statements below choose the one that best states a PNG Food Security Policy.

- A. Reducing number of family members available to work in gardens.
- B. Enhancing or improving the development of traditional staple crops.
- C. Insufficient amounts of protein and vitamins in diets.
- D. The loss of agriculture knowledge and skills due to serious illness and death.

**For Questions 13 refer to the list below.**

- |                      |                 |                |                |
|----------------------|-----------------|----------------|----------------|
| (i) Nitrogen         | (iv) Phosphorus | (vii) Calcium  | (x) Cow manure |
| (ii) Manganese       | (v) Potassium   | (viii) Compost |                |
| (iii) Chicken manure | (vi) Horse Dung | (ix) Iron      |                |

**QUESTION 13**

Which list contains all the micro-nutrients?

- |                                |                           |
|--------------------------------|---------------------------|
| A. (i), (iv), (v) only         | B. (i), (iv), (v) and (x) |
| C. (iii), (vi), (viii) and (x) | D. (ii), (vii), (ix) only |

**QUESTION 14**

A vector is a/an

- |                                    |                                    |
|------------------------------------|------------------------------------|
| A. organism that carries disease.  | B. insect that pollinates flowers. |
| C. nutrient taken in by organisms. | D. disease that affects organisms. |

**QUESTION 15**

Plants grow with the body of the plants supported and the roots immersed in a water solution supplied with the exact nutrients required for growth.

What do we call this method of plant cultivation?

- |           |                |
|-----------|----------------|
| A. Paddy  | B. Hydroponics |
| C. Marine | D. Aquatic     |

**QUESTION 16**

Which soil type has irregular shapes, a lot of air spaces and cannot retain much water?

- |         |         |         |         |
|---------|---------|---------|---------|
| A. Sand | B. Clay | C. Silt | D. Loam |
|---------|---------|---------|---------|

**QUESTION 17**

What is the name given to female cattle that have not given birth to an offspring?

- |          |           |         |            |
|----------|-----------|---------|------------|
| A. Bulls | B. Steers | C. Cows | D. Heifers |
|----------|-----------|---------|------------|

**QUESTION 18**

Which province in PNG was affected by *Salvinia molesta* in 1980s?

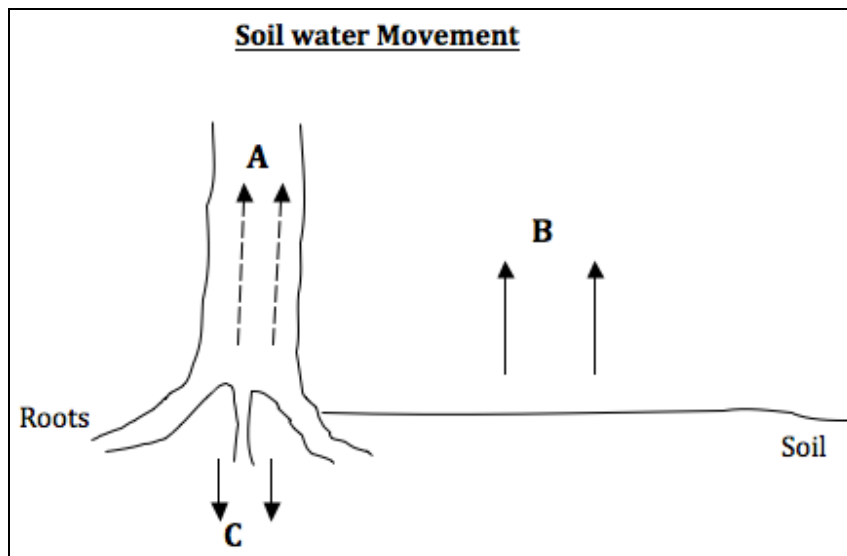
- A. West Sepik      B. East Sepik      C. Western      D. East New Britain

**QUESTION 19**

Which of the processes below helps in the formation of the soil from the parent materials?

- A. Erosion      B. Weathering      C. Decomposition      D. Deposition

For Questions 20 and 21, refer to the diagram below of how water in the soil is lost.

**QUESTION 20**

What process does letter A in the diagram represent?

- A. Translocation      B. Transpiration      C. Evaporation      D. Leaching

**QUESTION 21**

What process does letter C on the diagram represent?

- A. Translocation      B. Transpiration      C. Evaporation      D. Leaching

**QUESTION 22**

Which factors influence photosynthesis?

- A. Light, Heat, Soil, Oxygen  
 B. Temperature, Carbon dioxide, Water, Light  
 C. Soil, Water, Light, Oxygen  
 D. Temperature, Oxygen, Carbon dioxide, Water

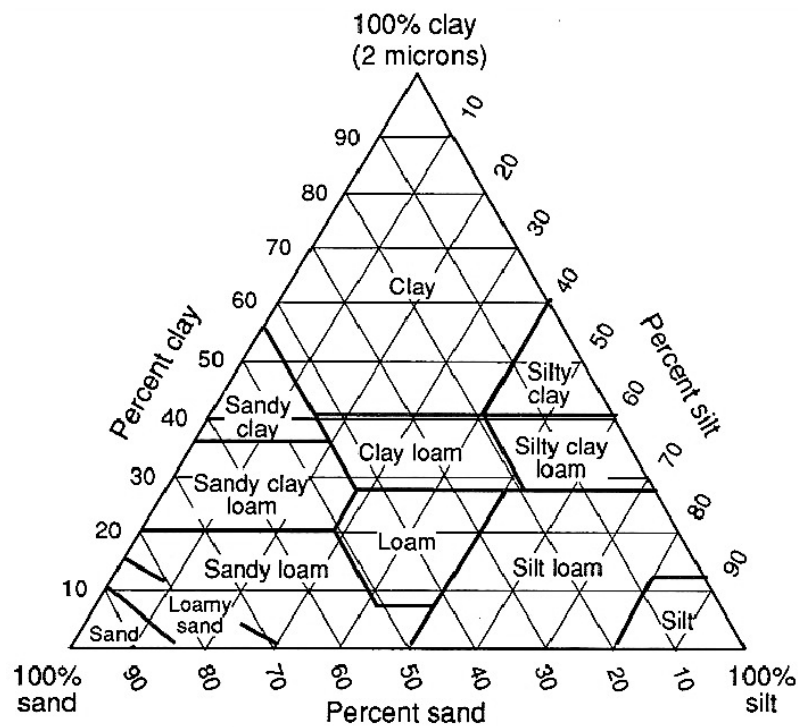
**QUESTION 23**

Which statement is **NOT TRUE** about the mono-cropping system in agriculture?

In a mono-cropping system, there will be a/an

- A. decrease of a particular pest or disease.
- B. increase in a particular disease.
- C. decrease in a particular nutrient.
- D. decrease in nutrients and increase in pests.

**For Questions 24 and 25 use the soil texture triangle.**



**QUESTION 24**

A soil type has 30% clay and 40% silt.

What will be its sand percentage?

- A. 15
- B. 20
- C. 30
- D. 40

**QUESTION 25**

What is the soil type that has 20% clay, 70% silt and 10% sand?

- A. Clay
- B. Silt
- C. Silt loam
- D. Sandy clay

**PART B: SHORT ANSWERS****(QUESTIONS 26 to 45)****20 MARKS**

For each question, write the correct answer in the space provided on the ANSWER SHEET.

**QUESTION 26**

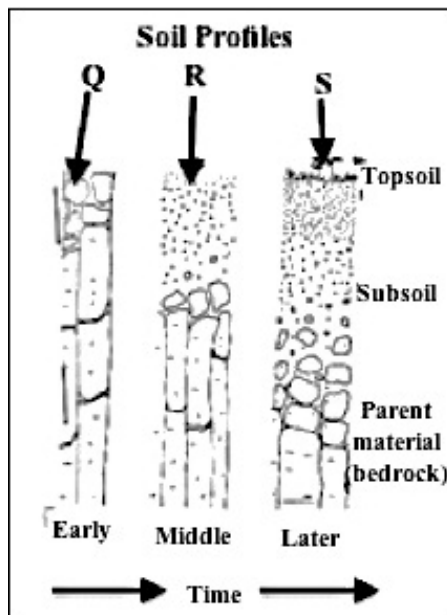
The practice where different crops are grown one after the other to maintain soil fertility and prevent a buildup of any particular plants and diseases is called crop \_\_\_\_\_.

**QUESTION 27**

The most likely disadvantage of mono cropping is that the levels of macronutrients will \_\_\_\_\_.

**QUESTION 28**

Below is a diagram of soil profiles showing soil formation from parent material.



Most living organisms are found in the soil profile labeled by the letter \_\_\_\_\_.

**QUESTION 29**

The study of the interaction between mankind, plants, earth and animals is called \_\_\_\_\_.

**QUESTION 30**

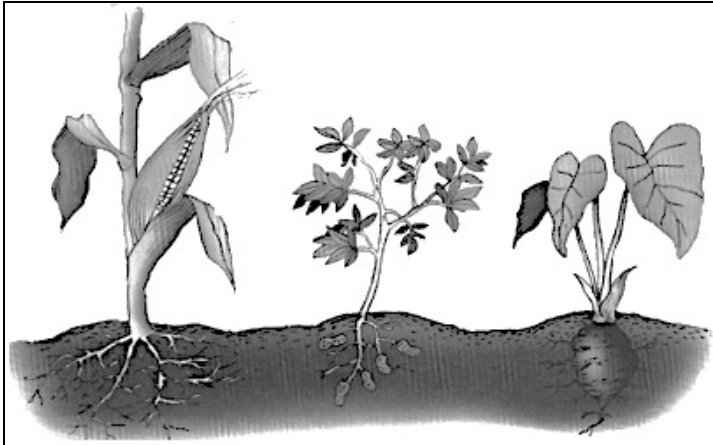
Name the macronutrient which is a gas and is needed in great amounts by plants for building their protein.

**QUESTION 31**

What macronutrient is symbol **K** representing?

**QUESTION 32**

Refer to the picture below.



The plant in the middle of the picture is in the same plant family as bean.

What is the name of this plant family? \_\_\_\_\_.

**QUESTION 33**

There are three types of liming materials listed below.

- I. Limestone
- II. Slaked lime
- III. Quicklime

Which one of the three lime types I, II or III has the chemical formula  $\text{CaCO}_3$ ? \_\_\_\_\_.

**QUESTION 34**

What is the scientific name for corn? (One word only)

**QUESTION 35**

Write the name of the legume plant that has the scientific name *Arachis hypogaea*.

**QUESTION 36**

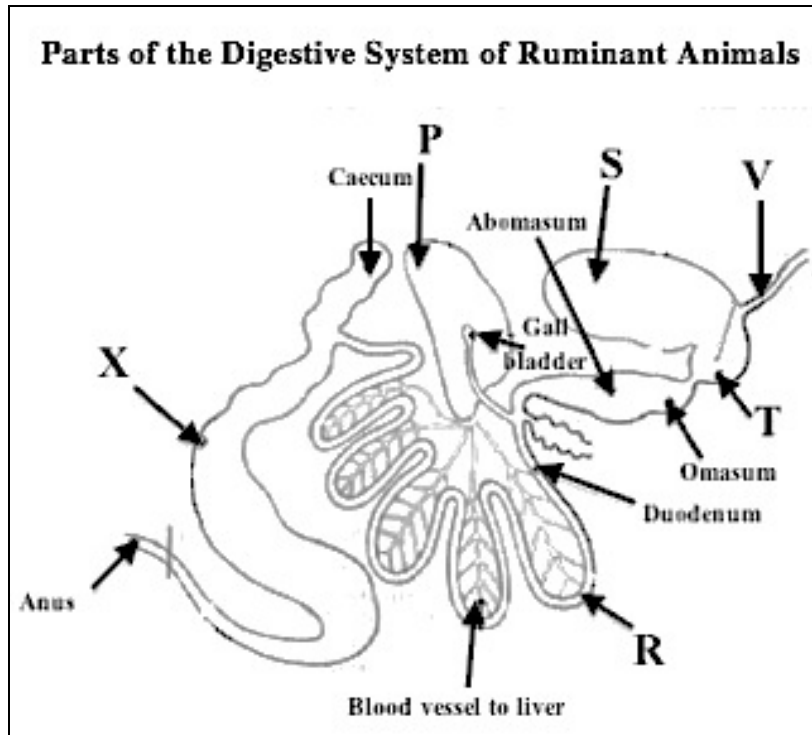
What is the name of the farming system where step-like structures are used to help prevent soil erosion?

**QUESTION 37**

What is the term given to any substance, which the plant can use as their food to grow and reproduce?



For Questions 38, 39 and 40, refer to the diagram below that shows the structure of the digestive system of a ruminant.



**QUESTION 38**

Which letter represents the Rumen part?

**QUESTION 39**

Name the part of the digestive system where most of the digestion and absorption of food occurs.

**QUESTION 40**

Name the part represented by letter X.

**QUESTION 41**

The practice where farmyard manure and compost is applied in the growing of crops is referred to as \_\_\_\_\_ farming.

**QUESTION 42**

Name the group of microorganisms that are responsible for fixing nitrogen into soil. (Only one word)

**QUESTION 43**

In order for crops to be grown in soil, the soil has to be neutral.

What is the pH value of soil that is neutral?

**For Questions 44 and 45, refer to the information below.**

Deep holing is an agricultural technique done to few tuber plants where holes as deep as 2m are dug and mounds are created above those holes so that tubers can grow to an extraordinary length when planted. Below is a list of five (5) tuber crops;

Carrot, kaukau, potato, taro, yam

**QUESTION 44**

From the list above, which tuber plant makes use of deep holing as well as staking?

**QUESTION 45**

From the list above, which tuber plant makes use of deep holing only without the need for stakes.

**PART C: EXTENDED RESPONSE****5 MARKS****QUESTION 46**

Below are some words that describe the growth and development of animals.

Ovules	Eves	Reticulum	Yolk	Rectum
--------	------	-----------	------	--------

For each of the definitions given below, write the correct word from the list above in the space provided on the answer sheet.

- i. The second stomach of a ruminant.
- ii. An organ that consists of small undeveloped female eggs for reproduction.
- iii. The part of an egg that contains the food nutrients, which are used by the developing chicken inside the egg.
- iv. The part of the large intestine that stores the faeces and wastes before passing out through the anus.
- v. The name given to female sheep.

**END OF EXAMINATION**

**AGRICULTURE - ANSWER SHEET**



MARKER 1

YEAR		PROV.		SCHOOL			CAND No.		
1	5								
NAME									
SCHOOL									

**PART A:** (Questions 1 to 25)

Write the letter of your answer next to each question below.

1	
2	
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**PART B** (Questions 26 to 45)

Write your answer next to each question below.

26	
27	
28	
29	
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31	
32	
33	
34	
35	

36	
37	
38	
39	
40	

**PART C** (Questions 46 to 50)

Write your answer next to each question below.

41	
42	
43	
44	
45	

46	i.	
	ii.	
	iii.	
	iv.	
	v.	



MARKER 2

**DO NOT WRITE ON THIS PAGE**

**YOU MAY DO YOUR ROUGH WORK ON THIS PAGE**

**CAREFULLY TEAR ALONG THIS PERFORATION**

**YOU MAY DO YOUR ROUGH WORK ON THIS PAGE**