

MARKER CODE				



STUDENT ENROLMENT NUMBER									

TONGA SCHOOL CERTIFICATE

2016

AGRICULTURE

QUESTION AND ANSWER BOOKLET

Time Allowed: 2 ½ Hours

INSTRUCTIONS

1. Answer **ALL** questions.
2. This paper consists of **SIX QUESTIONS**.

QUESTION	Topics	Total Skill Level	Time (min)
ONE	AGRO FORESTRY	10	21
TWO	SOIL	15	32
THREE	AGRICULTURAL TOOLS	5	12
FOUR	CROP PRODUCTION & PROTECTION	15	32
FIVE	ANIMAL PRODUCTION AND HEALTH	15	32
SIX	AGRICULTURAL INDUSTRY	10	21
	TOTAL	70	150

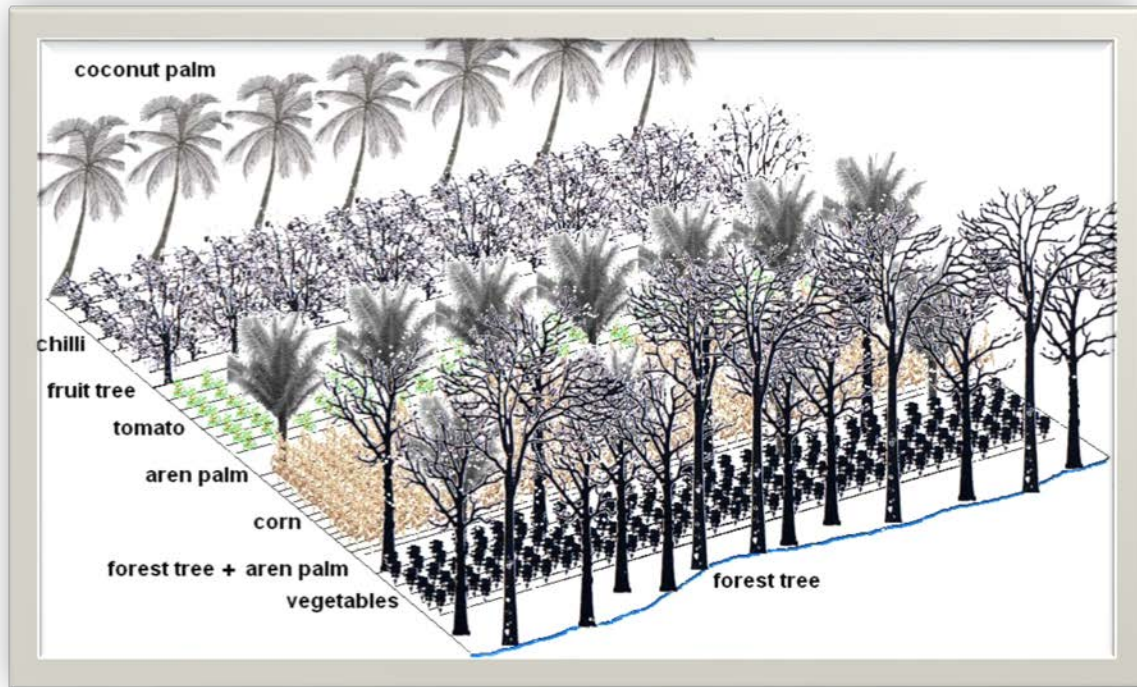
3. Write your **Student Enrolment Number** on the right hand corner and also on the last page.
4. Answer **ALL** questions in the space provide in this booklet
5. Use **BLUE** or **BLACK** ball point pen. **DO NOT** write in pencil.
6. If you need more space for any answer, ask the supervisor for extra paper.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

SECTION A : SHORT AND LONG ANSWER

QUESTION ONE: AGRO-FORESTRY

- a. Study the diagram of **Agro-forestry system** below then answer the questions that follow.



1. Define Agro-forestry.

Skill level 1	
1	
0	
NR	

2. Identify the component of agro-forestry.

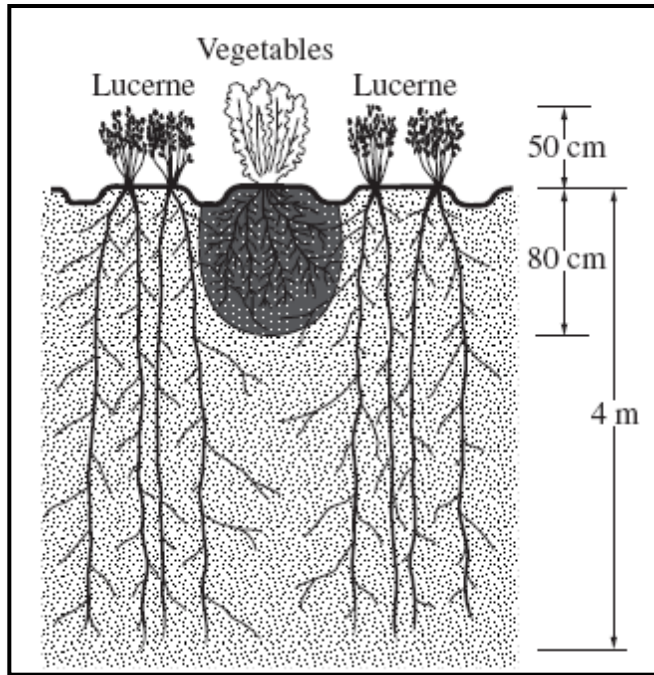
Skill level 1	
1	
0	
NR	

3. Describe the importance of agro-forestry under soil conservation.

Skill level 2	
2	
1	
0	
NR	

- c. Study the diagram of alley cropping system and answer the following questions.

The diagram shows how vegetables and lucerne (a shrub legume plant) can be grown in alternate rows.



- ☐ Vegetables are irrigated regularly
- ☐ Lucerne has very deep roots but few roots growing sideways
- ☐ Various vegetable types are rotated over time in this vegetable system.

1. Describe the proper care and management of trees under alley cropping system.

Skill level 2	
2	
1	
0	
NR	

2. Identify of what does useful species of lucerne belong.

Skill level 1	
1	
0	
NR	

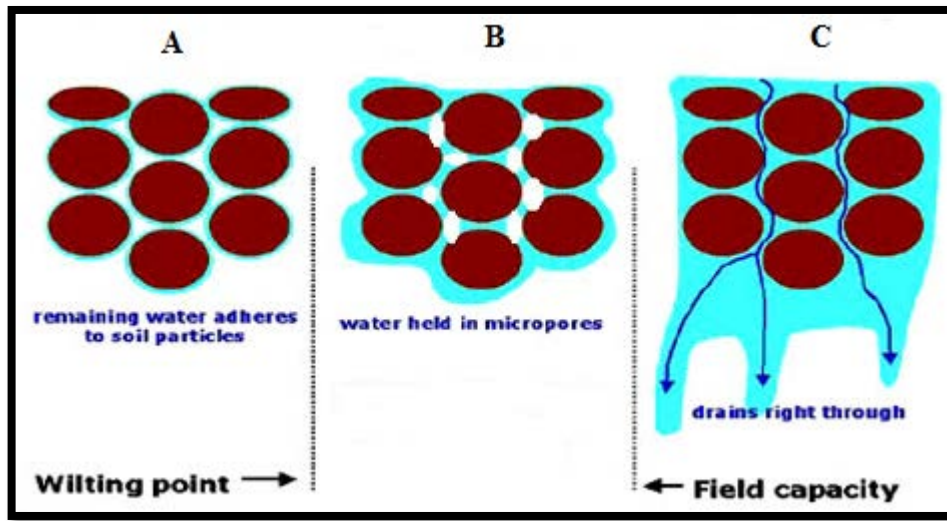
3. Explain why agro-forestry plants are best grown on **slope** and **terraces**.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION TWO

SOIL

- a. Study the diagram below carefully then answer the questions that follow.



1. Identify the type of soil water labelled **A**.

Skill level 1	
1	
0	
NR	

2. Describe the nature of soil water labelled **B**.

Skill level 2	
2	
1	
0	
NR	

- c. Study the diagram that shows overstocking below and then answer the questions that follow.



1. Define the term over stocking.

Skill level 1	
1	
0	
NR	

2. Describe the disadvantages of overstocking.

Skill level 2	
2	
1	
0	
NR	

3. Explain the effect of overstocking on soil fertility.

Skill level 3	
3	
2	
1	
0	
NR	

- e. Study the diagram that shows weathering as result of **cooling** and **heating** and answer the question below.



1. Describe the process of weathering as result of **cooling** and **heating**.

Skill level 2	
2	
1	
0	
NR	

2. Identify another origin of plant nutrients **EXCEPT** weathering.

Skill level 1	
1	
0	
NR	

- d. Study the picture of the formation of soil organic matter and answer the question that follow.



1. How many sources of organic matter shown on the diagram.

Skill level 1	
1	
0	
NR	

2. Identify **ONE** (1) farming practice that reduce soil organic matter.

Skill level 1	
1	
0	
NR	

3. Identify **ONE** (1) farming practice that improves soil organic matter.

Skill level 1	
1	
0	
NR	

QUESTION THREE**AGRICULTURAL TOOLS**

Study the picture of agricultural tools and equipment for chemical spraying below and answer the following questions.



1. Classify the chemical spraying tools and equipment labelled above.

Name of tools

letter labelled

Mist blower

Knapsack

Boom blower

2. Describe the use of tool **labelled A**.

Skill level 3	
3	
2	
1	
0	
NR	

Skill level 2	
2	
1	
0	
NR	

QUESTION FOUR CROP PRODUCTION & PROTECTION

1. Create a simple production plan for **Early Yam Season** by filling in the table below with an accurate arrangement of operations to clearly identify.
 - a. Pre-sprouting
 - b. Land preparation
 - c. Planting
 - d. Staking

MONTH	Management practice (in the order that they occur)			
	1.	2.	3.	4.
JANUARY				
FEBRUARY				
MARCH				
APRIL				
MAY				
JUNE				
JULY				
AUGUST				
SEPTEMBER				
OCTOBER				
NOVEMBER				
DECEMBER				

Skill level 4	
4	
3	
2	
1	
0	
NR	

2. Describe the selection and preparation of planting materials of early yam.

Skill level 2	
2	
1	
0	
NR	

3. Identify the appropriate time for harvesting early yam.

Skill level 1	
1	
0	
NR	

4. Describe the most appropriate weeding control method after the sprouting vine has crept about one meter on the ground.

Skill level 2	
2	
1	
0	
NR	

5. Identify **ONE** (1) factor that affects the rate of photosynthesis of early yam

Skill level 1	
1	
0	
NR	

6. Describe the importance of day length to early yam season.

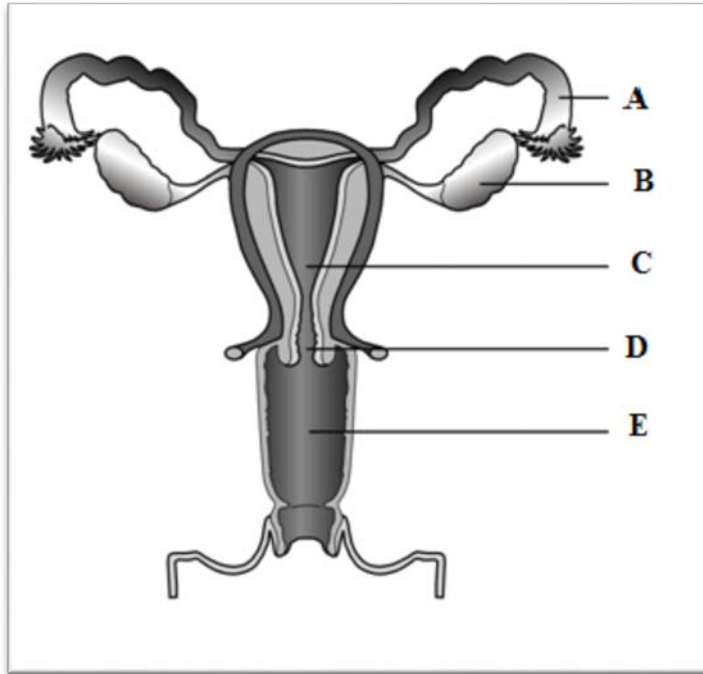
Skill level 2	
2	
1	
0	
NR	

7. Explain the cultural control method of anthracnose.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION FIVE ANIMAL PRODUCTION & HEALTH

- a. Study this diagram of the reproductive organ of a sow and answer the questions that follow.



1. Identify the reproductive organ **labelled A**.

Skill level 1	
1	
0	
NR	

2. Describe the role of female hormone called progesterone.

Skill level 2	
2	
1	
0	
NR	

3. Identify the gestation period of pig.

Skill level 1	
1	
0	
NR	

- c. Colostrum is very important in the diet of young piglets Use the picture below to answer the questions which follow.



1. What is the meaning of the term **colostrum**.

Skill level 1	
1	
0	
NR	

2. Describe the nutrition requirements for the growth stage of young piglets.

Skill level 2	
2	
1	
0	
NR	

3. Explain the function of vitamins for young piglet.

Skill level 3	
3	
2	
1	
0	
NR	

4. Study the diagram below carefully, and then answer the questions which follow.

BREED A**BREED B**

1. Name the breed of chicken in :

- i. **Breed A** : _____
 ii. **Breed B** : _____

Skill level 1	
1	
0	
NR	

2. Which **ONE** (1) of the two chicken breeds above is a **broiler** breed?

Skill level 1	
1	
0	
NR	

3. Explain the selection criteria considered prior to breeding for **Breed A**.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION SIX: AGRICULTURAL INDUSTRY

Below is a table which records the 'Kahokaho' yam quantity demanded and the quantity supplied at Talamahu Market for the month of June 2016. Given prices are per basket of yam.

- a. Study the table carefully, then answer the questions which follow.

DATE	PRICE	DEMAND	SUPPLY
June 1	\$40	26	10
June 8	\$45	22	14
June 15	\$50	18	18
June 22	\$55	14	22
June 29	\$60	10	26

1. Define the term market force.

Skill level 1	
1	
0	
NR	

2. Describe the market force that affects the supply of yam. Give an example from the table.

Skill level 2	
2	
1	
0	
NR	

3. Identify the quality standard of kahokaho required by the market.

Skill level 1	
1	
0	
NR	

- c. Study the type of record shown on the diagram and answer the following question

Table 1. Balance Sheet and Income Statement Highlights			
Financial Measures 12/31/2007			
Balance Sheet		Income Statement	
Current assets	8,500	Gross revenue	60,000
Current liabilities	4,200	Operating expenses	16,250
Total assets	70,000	Labor (paid)	12,500
Total liabilities	42,000	Interest expense	3,750
		Depreciation expense	2,000
		Net farm income	25,500

1. Define the term record keeping.

Skill level 1	
1	
0	
NR	

2. Identify the type of record shown above.

Skill level 1	
1	
0	
NR	

3. Describe the importance of keeping records.

Skill level 2	
2	
1	
0	
NR	

4. Describe the characteristic of a good farm record.

Skill level 2	
2	
1	
0	
NR	