

MARKER CODE				



Student Enrolment Number (SEN)									

TONGA FORM SIX CERTIFICATE 2017

AGRICULTURAL STUDIES

QUESTION AND ANSWER BOOKLET

Time allowed: 3 Hours

INSTRUCTIONS:

1. Write your **Student Enrolment Number (SEN)** on the top right-hand corner of this page.
2. Additional sheets of paper can be obtained from your supervisor if necessary. Write your **Student Enrolment Number (SEN)** on each additional sheets. Number the questions clearly and insert them in the appropriate part of your booklet.

SECTION		Pages	Total Skill Level	Time
A	Agricultural Ecosystem and Environment	2-3	8	18
B	Soils	4-6	8	18
C	Farm Power and Agricultural Machinery	7-9	8	21
D	Crop Production and Crop Protection	10-12	17	46
E	Animal Production and Health	13-16	17	46
F	Agricultural Management and Marketing	17-19	12	31
		19	70	180

3. Check that this booklet contains pages **2-19** in the correct order and that none of the pages is blank.

**YOU MUST HAND IN THIS BOOKLET TO THE SUPERVISOR BEFORE YOU
LEAVE THE EXAMINATION ROOM.**

SECTION A: Agricultural Ecosystem and Environment.

1. **Define** Agricultural Ecosystem.

Skill level 1	
1	
0	
NR	

Use **Figure 1** below to answer the questions that follow.

Figure 1: Spraying Yam



2. **Identify** ways agricultural chemicals **pollute** the environment.

Skill level 1	
1	
0	
NR	

3. **Define** Sustainable Agriculture.

Skill level 1	
1	
0	
NR	

4. **List** factors **influencing** the development of **farming system** in Tonga.

Skill level 2	
2	
1	
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NR	

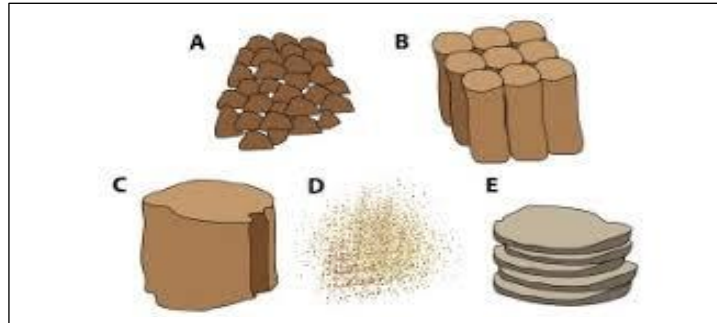
5. **Explain** appropriate **handling of pesticides**.

Skill level 3	
3	
2	
1	
0	
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SECTION B:**Soils**

Use **Figure 2** below and answer the question that follow.

Figure 2: Different types of Soil Structure.



1. **Define** Soil Structure.

Skill level 1	
1	
0	
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Figure 3 below shows a Textural Triangle with percentage of sand, silt and clay in different types of soil.

Figure 3: Textural Triangle

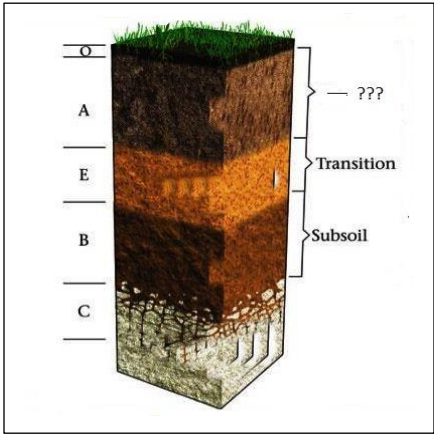


2. **Identify** soil types with 30% sand, 40% silt and 30% clay.

Skill level 1	
1	
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Use **Figure 4** below to answer the question that follow.

Figure 4: Soil Profile



3. **Label** Horizon **A** in Soil Profile above.

Skill level 1	
1	
0	
NR	

Use **Figure 5** below to assist you in answering the question that follow.

Figure 5: Organic Mulch



4. **Describe** how **Mulch** maintains **soil fertility**.

Skill level 2	
2	
1	
0	
NR	

Use **Figure 6** below to assist you in answering the question that follow.

Figure 6: Mixed Cropping.



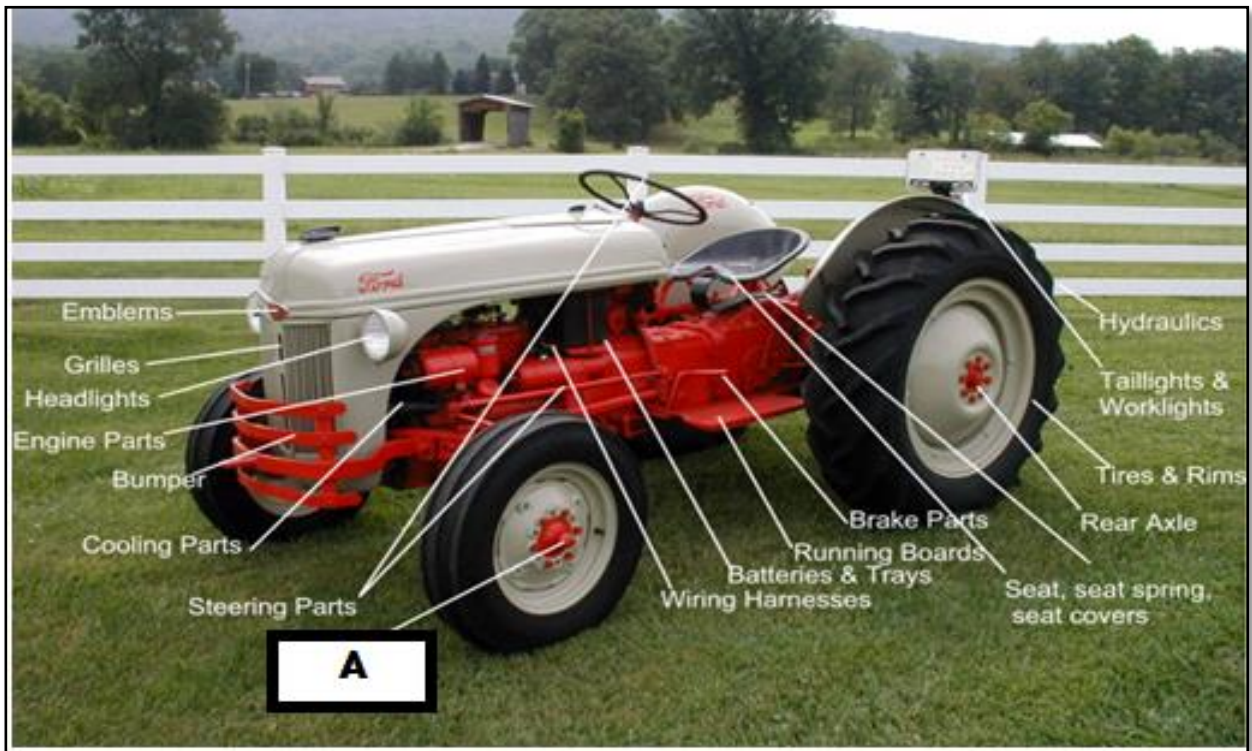
5. **Explain** the importance of **Mixed Cropping** to soil conservation.

Skill level 3	
3	
2	
1	
0	
NR	

SECTION C: Farm Power and Agricultural Machinery

Study **Figure 7** and answer the questions that follow.

Figure 7: Tractor Parts



1. **Label** tractor part **A** above.

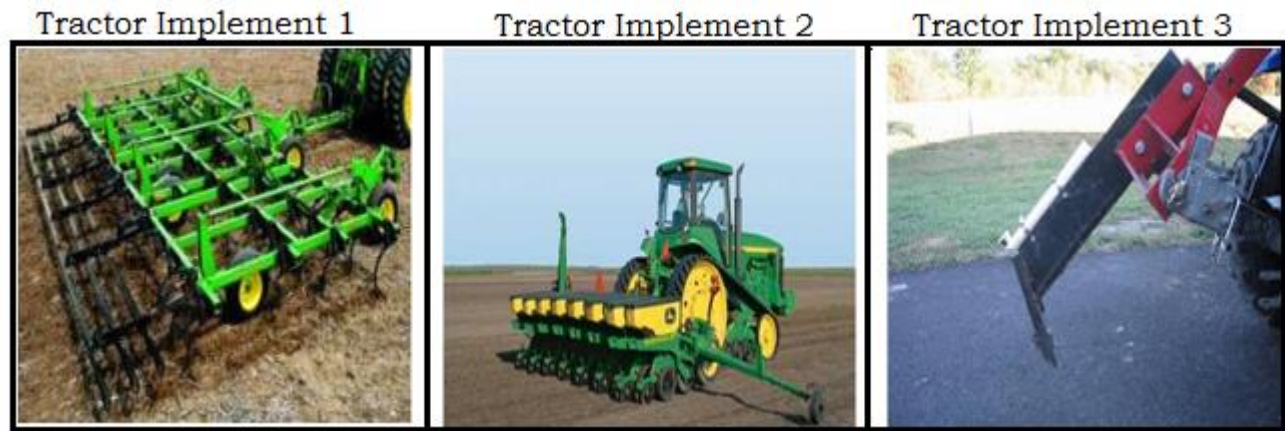
Skill level 1	
1	
0	
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2. **Identify** parts of a tractor that should be **checked daily**.

Skill level 1	
1	
0	
NR	

Study **Figure 8** below and answer the question that follow.

Figure 8: Tractor drawn equipment



3. **Name** the equipment shown in tractor **implement 3**.

Skill level 1	
1	
0	
NR	

Study **Figure 9** below and answer question that follow.

Figure 9: Tractor Air Cleaner



4. **Describe** the service performed by a **Tractor Air Cleaner**.

Skill level 2	
2	
1	
0	
NR	

Skill level 3	
3	
2	
1	
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NR	

SECTION D: Crop Production and Crop Protection

Study **Figure 10** below and answer the questions that follow.

Figure 10: Seed Germination



1. **Define** Seed Germination.

Skill level 1	
1	
0	
NR	

2. **List** factors needed for **Seed Germination**.

Skill level 2	
2	
1	
0	
NR	

3. **Compare Monocot** and **Dicot Seeds**.

Skill level 3	
3	
2	
1	
0	
NR	

4. **Evaluate** the advantages of **Sexual Reproduction** in plants.

Skill level 4	
4	
3	
2	
1	
0	
NR	

5. **Nitrogen** is a Macro element. **Define** Macro element.

Skill level 1	
1	
0	
NR	

6. **Describe** the importance of **Nitrogen fertilizer** in the soil.

Skill level 2	
2	
1	
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NR	

7. **Explain** how to apply **Nitrogen fertilizer** to watermelon that is **deficient** in Nitrogen.

Skill level 3	
3	
2	
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0	
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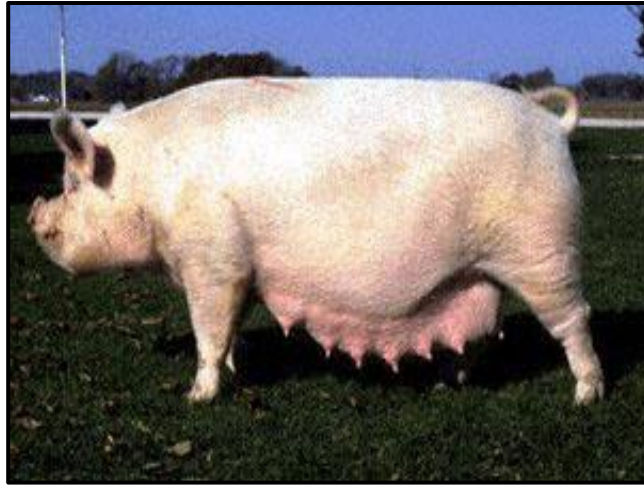
8. **Define** Ethylene Hormone.

Skill level 1	
1	
0	
NR	

SECTION E: Animal Production and Health

Study **Figure 11** below and answer the questions that follow.

Figure 11: Sow A



1. What is the **name** given to the breed of pig above?

Skill level 1	
1	
0	
NR	

2. **Describe** the characteristic of **Sow A**.

Skill level 2	
2	
1	
0	
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Study **Figure 12** below and answer the question that follow.

Figure 12: Tongan Native Sow

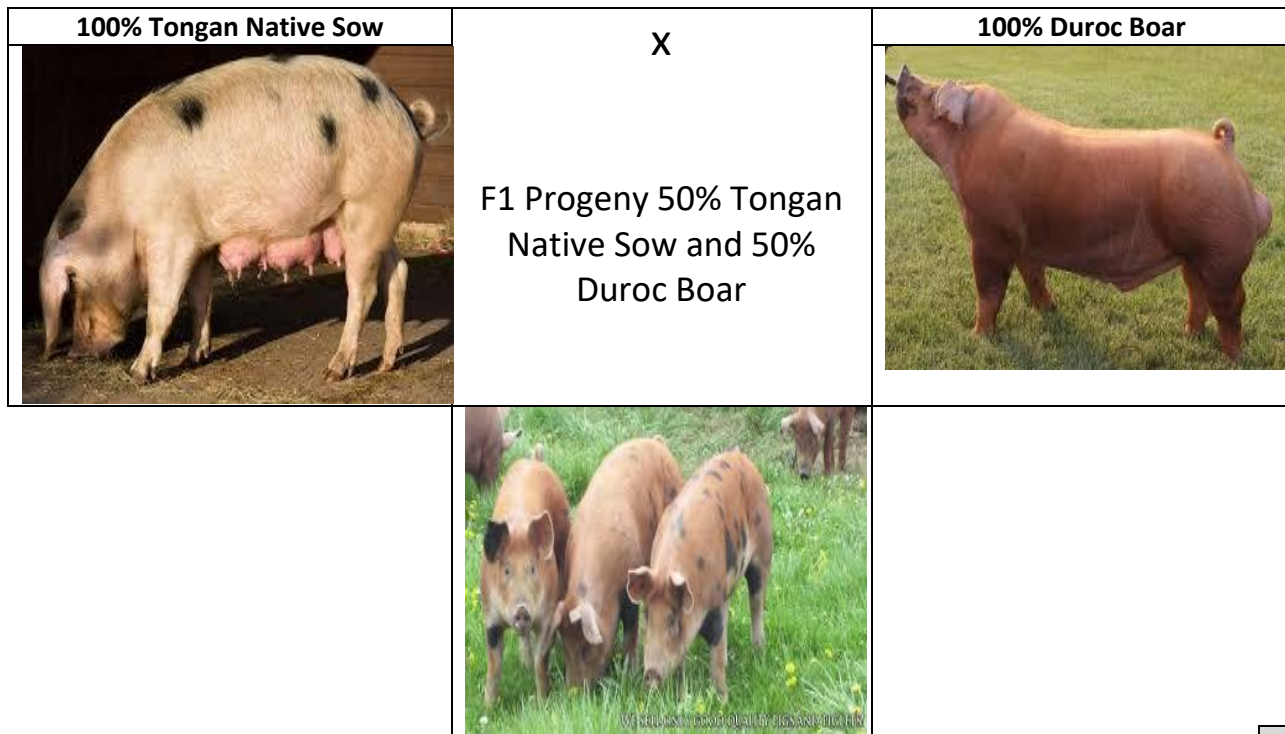


3. **Compare** the **production** of **Sow A** and the **Tongan Native Sow**.

Skill level 3	
3	
2	
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Study **Figure 13** below and answer the questions that follow.

Figure 13: Breeding Pig



4. What is the **name** given to the **breeding system** above?

Skill level 1	
1	
0	
NR	

5. Identify the Gestation period of pig.

Skill level 1	
1	
0	
NR	

6. **Describe** the advantages of **breeding Tongan Native Sow** and **Duroc Boar**.

Skill level 2	
	2
	1
	0
	NR

Study **Figure 14** below and answer the questions that follow.

Figure 14: Mastitis Cow



7. **Explain** the **clinical signs** of Mastitis.

Skill level 3	
3	
2	
1	
0	
NR	

8. **Analyse** the **control** of Mastitis as shown in the Cow above.

Skill level 4	
4	
3	
2	
1	
0	
NR	

SECTION F: Agricultural Management and Marketing

1. Define Market.

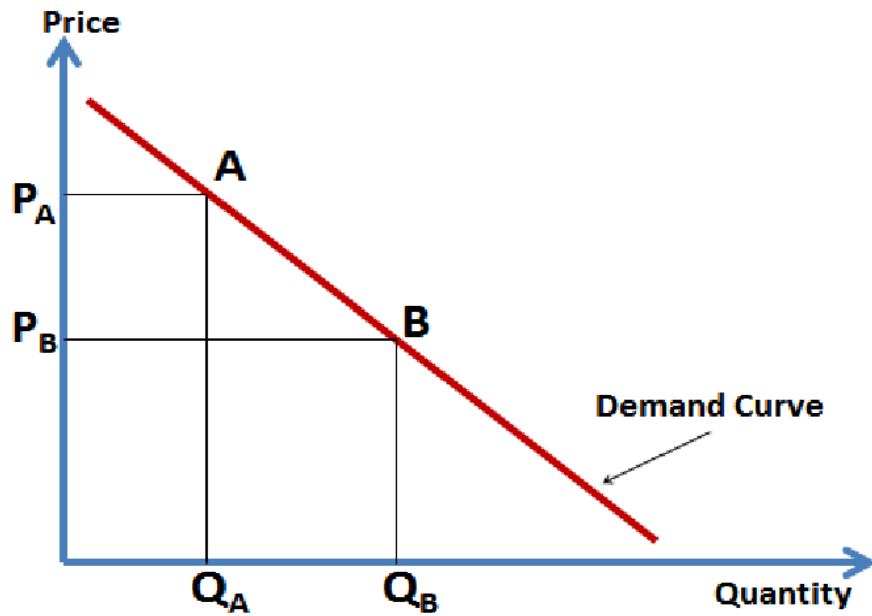
Skill level 1	
1	
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NR	

2. **Describe** the importance of **Promotion** in Marketing.

Skill level 2	
2	
1	
0	
NR	

Study **Figure 15** below and answer the questions that follow.

Figure 15: Demand Curve



3. **Explain** the **impact of shift** in the demand curve as it moves the market equilibrium from **Point A** to **Point B**.

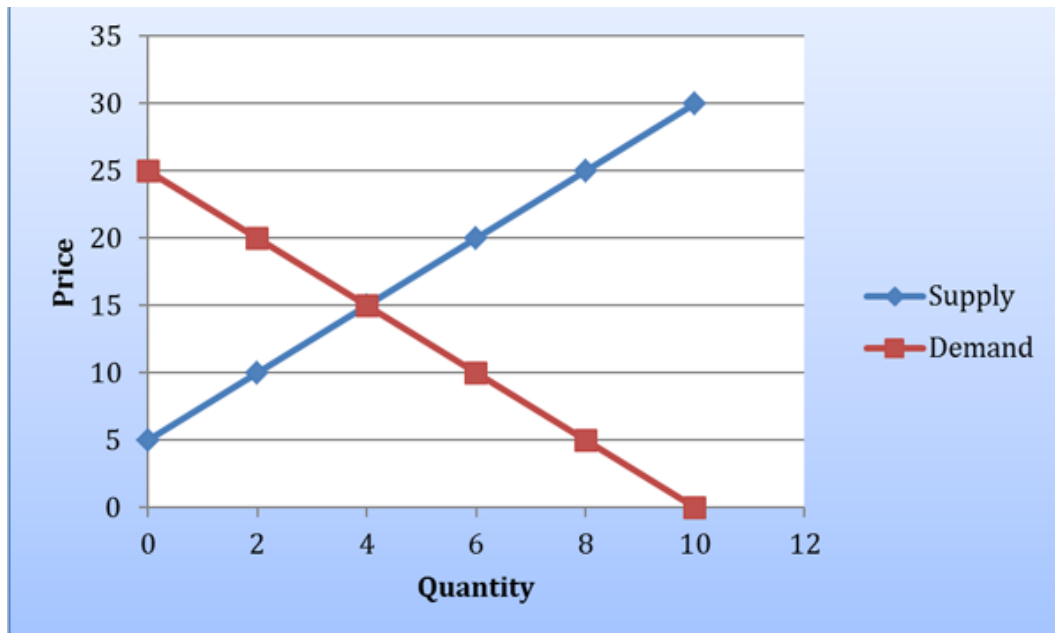
Skill level 3	
3	
2	
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NR	

4. **Define** market **equilibrium** price.

Skill level 1	
1	
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NR	

Study **Figure 16** below and answer the questions that follow.

Figure 16: Supply and Demand Curve



5. In December 2016, the price of Watermelon dropped and the quantity of watermelon sold rose. **Analyse** the relationship of **supply** and **demand** for watermelon in December 2016.

Skill level 4	
4	
3	
2	
1	
0	
NR	

6. **Define** Quarantine.

Skill level 1	
1	
0	
NR	