



MARKER CODE			

STUDENT ENROLMENT NUMBER									



**Sāmoa School Certificate**  
**AGRICULTURAL SCIENCE**  
**2015**  
**QUESTION and ANSWER BOOKLET**

Time allowed: 3 Hours and 10 Minutes

**INSTRUCTIONS:**

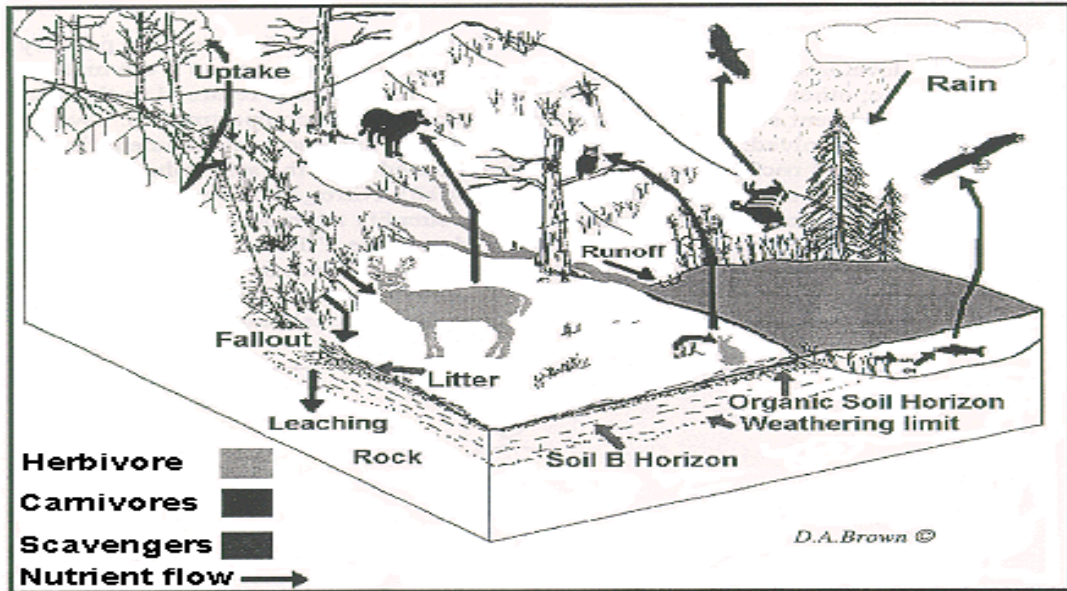
1. You have 10 minutes to read **before** you start writing.
2. Write your **Student Education Number (SEN)** in the space provided on the top right hand corner of this page.
3. Answer **ALL QUESTIONS**. Write your answers in the spaces provided in this booklet.
4. If you need more space for answers, ask the Supervisor for extra paper. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.

STRANDS	Page Number	Time (Minutes)	Weighting
<b>STRAND 1:</b> Agriculture in Samoa	2	14	8
<b>STRAND 2:</b> Soils	4	18	10
<b>STRAND 3:</b> Farm Management, Economics and Marketing	6	36	20
<b>STRAND 4:</b> Crop Production	9	44	24
<b>STRAND 5:</b> Animal Production	14	54	30
<b>STRAND 6:</b> Tools	20	14	8
<b>TOTAL</b>		<b>180</b>	<b>100</b>

Check that this booklet contains pages 2-22 in the correct order and that none of these pages is blank.

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

Study the diagram of the ecosystem below and answer Number 1, 2 and 3



1. Define the term *ecosystem*.

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Skill Level 1	
1	
0	
NR	

2. What type of ecosystem is shown in the diagram? Put a tick next to the correct answer.

MANAGED

UNMANAGED

Skill Level 1	
1	
0	
NR	

3. Describe the ecosystem in the diagram

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Skill Level 2	
2	
1	
0	
NR	

4. Define *monohybrid crosses*.

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Skill Level 1	
1	
0	
NR	

5. Using your knowledge of genetics, explain how you can improve your livestock production.

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Skill Level 3	
3	
2	
1	
0	
NR	

**Strand 2**

**Soils**

**Weighting 10**

6. Define *Soil Fertility*.

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Skill Level 1	
1	
0	
NR	

7. Explain why there is a need for *soil conservation*.

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Skill Level 3	
3	
2	
1	
0	
NR	

8. Describe how you can determine soil fertility.

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Skill Level 2	
2	
1	
0	
NR	

9. Discuss ONE agricultural practice that helps reduce soil erosion.

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Skill Level 4	
4	
3	
2	
1	
0	
NR	

**Strand 3**

**Farm Management, Economics and Marketing**

**Weighting 20**

10. Define *Gross Margin*

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Skill Level 1	
1	
0	
NR	

11. Define and give an example of Fixed Cost and Variable Cost.

a. Fixed Cost

Definition

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Example:

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Skill Level 1	
1	
0	
NR	

Skill Level 1	
1	
0	
NR	

b. Variable Cost.

Definition

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Example:

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Skill Level 1	
1	
0	
NR	

Skill Level 1	
1	
0	
NR	

12. Differentiate between Total Revenue, Total variable Cost and Total cost.

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Skill Level 3	
3	
2	
1	
0	
NR	

13. Name a type of record.

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Skill Level 1	
1	
0	
NR	

14. Describe the purpose of the record you named in 4.

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Skill Level 2	
2	
1	
0	
NR	

15. Differentiate between *optimum point* and *maximum point* on a graph.

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Skill Level 3	
3	
2	
1	
0	
NR	

16. Describe a media promotional program for a local product.

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Skill Level 2	
2	
1	
0	
NR	

17. Sketch and label the marketing channel of a processed agricultural product for export.

Skill Level 4	
4	
3	
2	
1	
0	
NR	



**Strand 4**

**Crop Production**

**Weighting 24**

18. Define *agroforestry*

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Skill Level 1	
1	
0	
NR	

19. Identify ONE feature of a natural forest.

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Skill Level 1	
1	
0	
NR	

20. Compare a natural forest and a managed forest.

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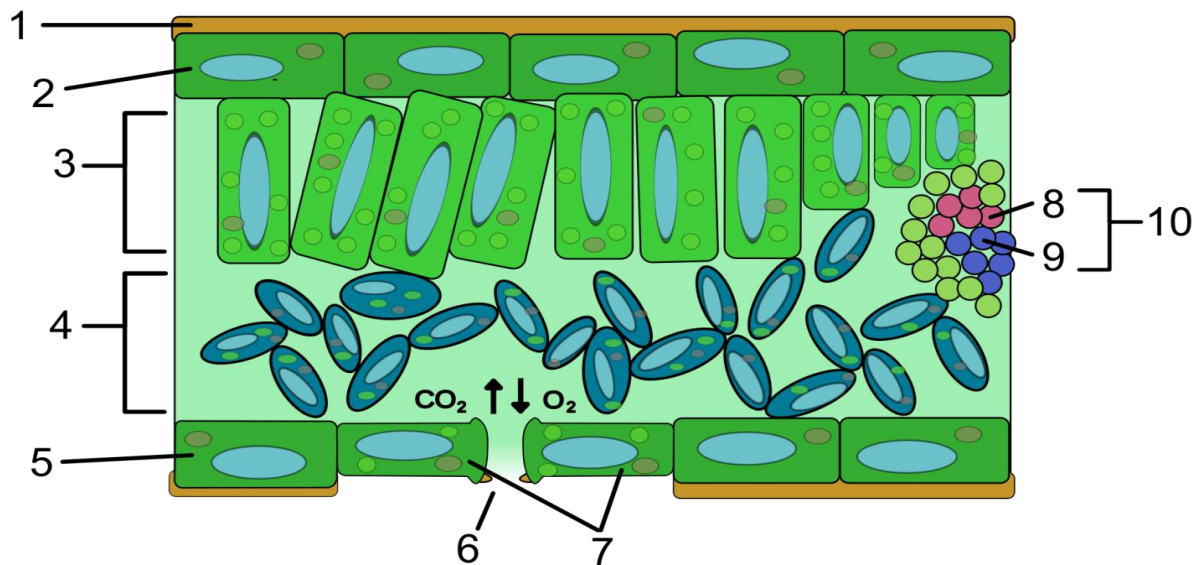
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Skill Level 3	
3	
2	
1	
0	
NR	

Study the diagram and answer Question 21

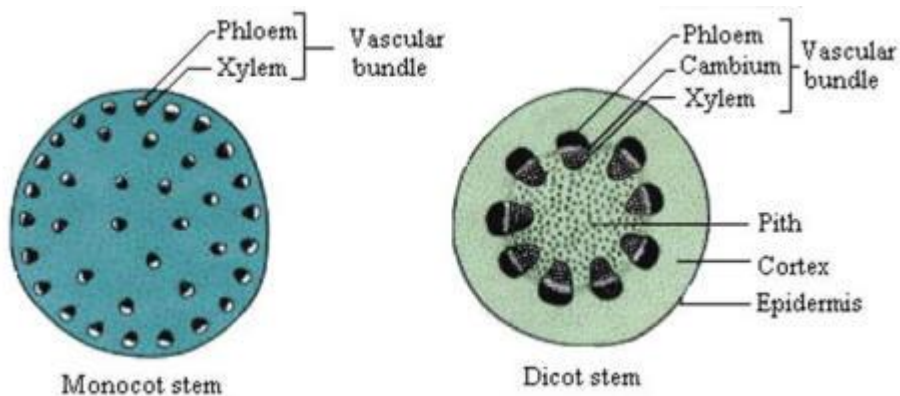


21. The number 7 in the diagram represents the

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Skill Level 1	
1	
0	
NR	

Study the diagram and answer Question 22



22. Identify a significant difference between the two stems

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\_\_\_\_\_

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Skill Level 1	
1	
0	
NR	

23. What type of roots do monocots have?

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Skill Level 1	
1	
0	
NR	

24. Explain the main function of leaves.

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Skill Level 3	
3	
2	
1	
0	
NR	

25. Define the following terms

Intercropping

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Skill Level 1	
1	
0	
NR	

Pruning

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Skill Level 1	
1	
0	
NR	

26. Discuss the FOUR key steps you will follow when growing Chinese cabbage for home consumption.

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Skill Level 4	
4	
3	
2	
1	
0	
NR	

27. Define the term *nutrient*.

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Skill Level 1	
1	
0	
NR	

28. Describe what *macronutrients* are.

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Skill Level 2	
2	
1	
0	
NR	

29. Give ONE example of a micronutrient.

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Skill Level 1	
1	
0	
NR	

30. Explain the importance of micronutrients to plants.

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Skill Level 3	
3	
2	
1	
0	
NR	

**Strand 5**

**Animal Production**

**Weighting 30**

31. Name a type of livestock production in Samoa.

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Skill Level 1	
1	
0	
NR	

32. Describe ONE added value product produced from cattle.

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Skill Level 2	
2	
1	
0	
NR	

33. Describe how dairy production can be improved in Samoa.

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Skill Level 2	
2	
1	
0	
NR	

34. Define *breeds*

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Skill Level 1	
1	
0	
NR	

Use the diagram to answer Number 35 and 36



35. Name the pig and cattle breeds in the diagram

Pig

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Skill Level 1	
1	
0	
NR	

Cattle

\_\_\_\_\_

Skill Level 1	
1	
0	
NR	

36. Describe a use of the cattle breed in the above diagram.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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Skill Level 2	
2	
1	
0	
NR	

Use the diagram to answer Number 37-39.



37. Name the management practice shown in the diagram.

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Skill Level 1	
1	
0	
NR	

38. Describe what is taking place in the diagram.

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Skill Level 2	
2	
1	
0	
NR	



39. Name the management system in which this practice normally takes place. Explain why it is used.

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Skill Level 3	
3	
2	
1	
0	
NR	

40. Define *Artificial Insemination*

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Skill Level 1	
1	
0	
NR	

41. Explain ONE advantage of artificial insemination

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Skill Level 3	
3	
2	
1	
0	
NR	

42. Define *parasites*

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Skill Level 1	
1	
0	
NR	

43. Discuss the effects of parasite control on a cattle farm.

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Skill Level 4	
4	
3	
2	
1	
0	
NR	

44. Name a locally available pasture grass for cattle in Samoa.

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Skill Level 1	
1	
0	
NR	

45. Recommend a feed combination for cattle in Samoa

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Skill Level 4	
4	
3	
2	
1	
0	
NR	

Use the diagram below to answer Number 46 and 47



46. Name the equipment in the picture above.

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Skill Level 1	
1	
0	
NR	

47. Mark the control lever with an "X" on the diagram.

Skill Level 1	
1	
0	
NR	

48. Define *calibration*

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Skill Level 1	
1	
0	
NR	

49. List two functions of this equipment.

(i) \_\_\_\_\_  
\_\_\_\_\_

(ii) \_\_\_\_\_  
\_\_\_\_\_

Skill Level 2	
2	
1	
0	
NR	

50. Explain how this equipment is maintained.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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Skill Level 3	
3	
2	
1	
0	
NR	

Student Education Number									

## AGRICULTURAL SCIENCE 2015

(For Markers only)

STRANDS	Weighting	Marker	Check Marker	Final Weighting
<b>STRAND 1:</b> Agriculture in Samoa	8			
<b>STRAND 2:</b> Soils	10			
<b>STRAND 3:</b> Farm Management, Economics and Marketing	20			
<b>STRAND 4:</b> Crop Production	24			
<b>STRAND 5:</b> Animal Production	30			
<b>STRAND 6:</b> Tools	8			
<b>TOTAL</b>	<b>100</b>			