



Sāmoa Secondary Leaving Certificate

AGRICULTURAL SCIENCE 2016

QUESTION and ANSWER BOOKLET

Time Allowed: 3 Hours & 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, 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
1. AGRICULTURE	2	18	10
2. SOILS	5	45	24
3. FARM MANAGEMENT, ECONOMICS AND MARKETING	9	22	12
4. CROP PRODUCTION	12	40	23
5. ANIMAL PRODUCTION	16	43	24
6. TOOLS, EQUIPMENTS AND FACILITIES	21	12	7
TOTAL		180	100

CHECK! This booklet contains pages 2-21 in the right order.

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

Use the resource below to answer Number 1- 3.



1. Use the diagram to define the characteristics of an ecosystem.

Skill Level 1

2. Describe the characteristics of an ecosystem in relation to ONE of the four components given in the diagram – Supporting, Provisioning, Regulating or Cultural.

Skill Level 2

3. Explain the impacts of local agricultural practices on the natural ecosystem.

Skill Level 3

Use the information below on Genetically Modified Foods to answer Number 4 and 5.

Genetically modified foods or GM foods, also genetically engineered foods, are foods produced from organisms that have had changes introduced into their DNA using the methods of genetic engineering. Genetic engineering techniques allow for the introduction of new traits as well as greater control over traits than previous methods such as selective breeding and mutation breeding.



4. Define the term *Genetically Modified Organisms (GMO)*.

Skill Level 1

5. Explain genetically modified organisms.

Skill Level 3

STRAND 2

Soils

Weighting 24

6. Define *physical properties* of soil.

Skill Level 1

7. Define *chemical properties* of soil.

Skill Level 1

8. Define *biological properties* of soil.

Skill Level 1

9. Name a property of *volcanic soil*.

Skill Level 1

10. Name a property of *coral soil*.

Skill Level 1

11. Define the term *deforestation*.

Skill Level 1

12. Describe TWO properties of volcanic soil.

Skill Level 2

13. Describe different techniques of reducing soil erosion.

Skill Level 2

14. Explain how specified soil properties are affected by burning.

Skill Level 3

STRAND 3 Farm Management, Economics & Marketing

Weighting 12

18. Name a marketing role of the Ministry of Agriculture and Fisheries.

Skill Level 1

19. List TWO export market opportunities for breadfruit (*ulu*).

Skill Level 2

20. Explain the influence of market opportunities on management decisions.

Skill Level 3

Use the diagram below to answer Number 21-24.



21. Define the term *post-harvesting*.

Skill Level 1

22. Explain the post-harvest handling steps to meet quarantine requirements.

Skill Level 3

23. Name a type of human resource shown in the diagram.

Skill Level 1

24. Name a type of physical resource used in the diagram.

Skill Level 1

Define the following terms:

25. *asexual reproduction*

Skill Level 1

26. *marcotting*

Skill Level 1

27. *budding*

Skill Level 1

28. *metamorphosis*

Skill Level 1

29. *quota*

Skill Level 1

30. *tariff*

Skill Level 1

31. *weeds.*

Skill Level 1

32. Give TWO examples of sexual reproduction.

Skill Level 2

33. Name the main groups of pests.

Skill Level 1

34. Name the main groups of disease causing agents.

Skill Level 1

35. Describe some pest and disease control measures.

Skill Level 2

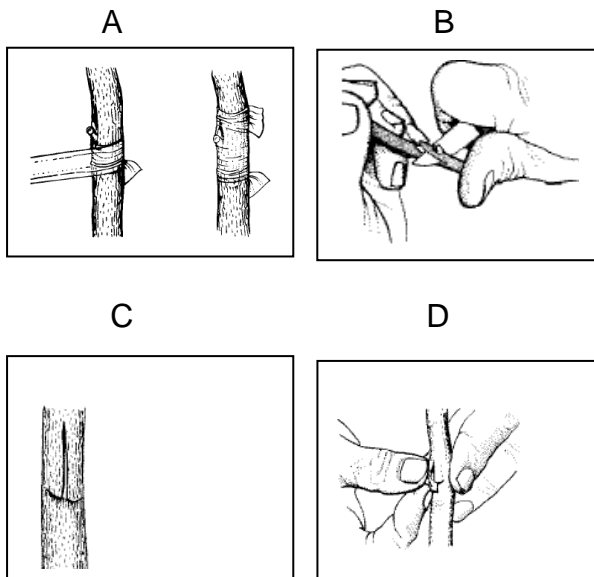
36. Explain how asexual reproduction is used to increase plant numbers.

Skill Level 3

37. Explain the role of bio-security in protecting natural environment.

Skill Level 3

38. Study the diagram on budding and explain the correct steps in order.



Skill Level 4

STRAND 5

Animal Production

Weighting 24



Use the Diagram to answer Number 39 & 40

39. Name the system used for raising poultry.

Skill Level 1

40. Name the strain or breed of chicken.

Skill Level 1

41. Identify factors that influence the growth and development of poultry in Samoa.

Skill Level 1

42. Define *coccidiosis disease* in poultry

Skill Level 1



Use the diagram to answer Number 43 & 44

43. Name the pig breed

Skill Level 1

44. Identify an internal parasite that can affect the pig.

Skill Level 1

45. Describe how breeds (genetic) influence the growth and development of pigs in Samoa.

Skill Level 2

46. Discuss the role of reproduction strategies in increasing productivity in pigs.

Skill Level 4



47. Name the cattle breed in the diagram above.

Skill Level 1

48. Describe the symptoms, causes and control measures for tuberculosis (TB) disease in cattle.

Skill Level 2

49. Formulate a feeding strategy for local cattle.

Skill Level 2

50. Explain the economic reasons for controlling cattle pests, diseases and disorders in relation to product quality

Skill Level 3

51. Evaluate the local cattle feed in Samoa in terms of types, quality, availability and quantity. Give specific examples.

Skill Level 4

STRAND 6

Tools, Equipments and Facilities

Weighting 7

Use the diagram to answer Number 52-55.



52. Name the equipment.

Skill Level 1

53. Label the nozzle with an X.

Skill Level 1

