



GOVERNMENT OF SAMOA

STUDENT EDUCATION NUMBER

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Samoa Secondary Leaving Certificate

AGRICULTURAL SCIENCE

2023

QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours & 10 minutes

INSTRUCTIONS

1. You have 10 minutes to read **before** you start the exam.
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 to the appropriate places in this booklet.

| STRANDS | | Page | Time (min) | Weighting |
|----------|--|---------|------------|-----------|
| STRAND 1 | AGRICULTURE | 2 - 3 | 18 | 10 |
| STRAND 2 | SOILS | 4 - 9 | 45 | 24 |
| STRAND 3 | FARM MANAGEMENT, ECONOMICS AND MARKETING | 10 - 12 | 22 | 12 |
| STRAND 4 | CROP PRODUCTION | 13 - 19 | 40 | 23 |
| STRAND 5 | ANIMAL PRODUCTION | 20 - 25 | 43 | 24 |
| STRAND 6 | TOOLS, EQUIPMENT AND FACILITIES | 26 - 27 | 12 | 7 |
| TOTAL | | | 180 | 100 |

Check that this booklet contains pages 2 - 28 in the correct order and that none of these pages are blank.

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

Use the Figure 1 below to answer Questions 1 to 4.

Figure 1: An Ecosystem



Source: Getty images

For Questions 1 and 2, choose and write the LETTER of the correct answer in the box provided.

1. What type of ecosystem is shown in Figure 1?

- A. Corn farm.
- B. Managed.
- C. Sustainable.
- D. Inter-cropping.

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2. Corn is grown as a:

- A. Inter-crop.
- B. Mixed crop.
- C. Mono-crop.
- D. Mixed farm.

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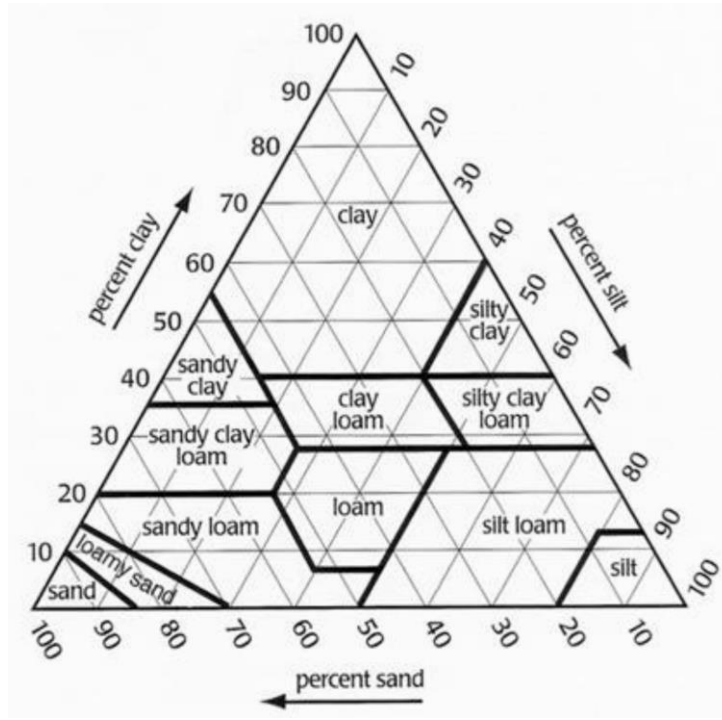
3. Describe the main cause of the problem shown in Figure 1.

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For Questions 6 to 8, choose and write the LETTER of the correct answer in the box provided.

Study Figure 2 given below and answer Question 6.

Figure 2: Soil Textural Triangle



Source: Google search

6. What is the soil type of a soil sample that contains 10% Clay, 50% Silt and 40% of sand?
Use the soil textural triangle in Figure 2 to determine the soil type.

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

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Study Figure 3 given below and answer Question 7.

Figure 3: Determining of soil texture



Source: Google search

7. The method of determining soil texture in the diagram is known as:

- A. feel method.
- B. test tube testing.
- C. pipette sampling.
- D. hydrometer reading.

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Study Figure 4 given below and answer Question 8.

Figure 4: A Damaged Soil Structure



Source: Google search

8. The damaged soil structure in the diagram can be improved by:

- A. tilling.
- B. fallowing.
- C. leaching.
- D. burning.

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Study Figure 5 given below and answer Question 9.

Figure 5: Burning of crop residue



Source: Google search

9. Explain how biological soil properties are affected by the burning of crop residue.

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Study Figure 6 given below and answer Questions 10 to 12.

Figure 6: Harrowing of soil



Source: Getty images

10. Describe how harrowing improves the physical properties of soil.

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11. Explain how **ONE** physical soil property is improved by harrowing.

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For Questions 16 to 19, choose and write the LETTER of the correct answer in the box provided.

16. A post-harvest activity is:

- A. harvesting crops.
- B. weeding the farm.
- C. grading produce.
- D. fertilizing crops.

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17. Record keeping is essential for:

- A. feeding.
- B. planting.
- C. managing breeding.
- D. managing the farm.

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18. The main goal of a taro farmer is to:

- A. control pest.
- B. plant all his land with taro.
- C. increase his taro yield.
- D. maximize his taro yield.

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19. Which of the following is a local processed product?

- A. Yams.
- B. Banana.
- C. Canned coconut cream.
- D. Canned New Zealand beef.

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21. Describe the post-harvest handling steps of taro for the local market.

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22. Explain how you can increase the value of your taro.

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Use Figure 8 below to answer Question 23.

Figure 8: Plant propagation



Source: Getty images

For Questions 23 to 27, choose and write the LETTER of the correct answer in the box provided.

23. The plant propagation method in Figure 8 is called:

- A. grafting.
- B. budding.
- C. air layering.
- D. tissue culture.

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Use Figure 9 below to answer Question 24.

Figure 9: Black pod



Source: Getty images

24. Black pod in cocoa is caused by a:

- A. virus.
- B. bacteria.
- C. fungus.
- D. pest.

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Use Figure 10 below to answer Question 25.

Figure 10: Taro plant



Source: Getty images

25. Taro breeding is an example of:

- A. sexual reproduction.
- B. asexual reproduction.
- C. air layering.
- D. budding.

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| SL 1 |
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26. Biosecurity keeps our country safe from:

- A. terrorists.
- B. climate change.
- C. cyclones.
- D. pests and diseases.

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Use Figure 11 below to answer Question 27.

Figure 11: Tariff



Source: Google search

27. Tariff is:

- A. duty on imported goods.
- B. cost of imported materials.
- C. fee for exported produce.
- D. revenue for taxpayers.

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Use Figure 12 below to answer Question 28.

Figure 12: Slugs



Source: iStock - Google search

28. Describe the feeding and crop damaging behaviour of slugs.

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29. Explain the **THREE** best stages in the growth and development of tomatoes to apply NPK fertilizer.

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Use Figure 13 below to answer Question 30.

Figure 13: Bunchy Top Virus in Banana



P. Lepoint, Bioversity

Source: Getty images

30. Describe the best method of controlling Bunchy Top virus disease in banana.

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Use Figure 14 below to answer Question 31.

Figure 14: Weeds



Image: Harry Rose - Wikimedia commons

Source: Harry Rose – Wikimedia commons

31. Explain how the growth and development of crops are influenced by weeds.

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| SL 3 |
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For Questions 34 to 39, choose and write the LETTER of the correct answer in the box provided.

Use Figure 16 below to answer Questions 34 to 36.

Figure 16: System of raising chickens



Source: iStock - Getty images

34. The system used for raising chickens in the diagram is known as:

- A. free range.
- B. caged.
- C. semi-intensive.
- D. commercial.

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35. The breed of a rooster chicken in the diagram is called a:

- A. fayoumi.
- B. local chicken.
- C. white fowl.
- D. white leg horn.

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36. The key factor that prevents broiler poultry production in Samoa is:

- A. breeds.
- B. housing.
- C. labour costs.
- D. low import costs.

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Use Figure 17 below to answer Questions 37 and 38.

Figure 17: Pigs



Source: iStock - Getty images

37. The breed of pigs in the diagram is called a:

- A. landrace.
- B. saddle back.
- C. large white.
- D. local pig.

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38. The most suitable system for raising this breed of pigs is known as:

- A. free range.
- B. semi traditional.
- C. traditional.
- D. commercial.

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Use Figure 18 given below to answer Question 39.

Figure 18: Cattle breeds



Source: Getty images

39. The breed of cattle in Figure 18 is called a:

- A. draught master.
- B. fresiean.
- C. hereford.
- D. zebu.

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Use Figure 19 below to answer Question 40.

Figure 19: Husbandry practice in Cattle



Source: Getty images

40. Describe the husbandry practice illustrated in the diagram.

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41. Describe how breeds influence the growth and development of beef cattle.

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42. Explain how the environment (water, light and temperature) influences the growth and development of layer hens.

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Use Figure 20 to answer Question 43.

Figure 20: Mastitis in sows



Source: Getty images

43. Explain the symptom, cause and control of mastitis disease in sows.

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For Questions 46 and 47, choose and write the LETTER of the correct answer in the box provided.

Use Figure 22 below to answer Question 46.

Figure 22: Agricultural equipment



Source: Getty images

46. The agriculture equipment shown in Figure 22 is a:

- A. knapsack sprayer.
- B. weed eater.
- C. chainsaw.
- D. mist blower.

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47. Which of the following chemical is used for controlling insect pests?

- A. Kerosene
- B. Agrazone
- C. Round up
- D. Attack

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Use Figure 23 given below to answer Question 48.

Figure 23: Agricultural Chemical



Source: Getty images

48. Describe the correct storage method of this chemical.

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Use Figure 24 given below to answer Question 49.

Figure 24: Agricultural Chemical



Source: Getty images

49. Explain the best time and method of applying weedicides.

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SSLC AGRICULTURAL SCIENCE

2023

(For Scorers only)

| STRANDS | | Weighting | Scores | Check Scorer | AED Check |
|-----------------|---|------------|--------|--------------|-----------|
| STRAND 1 | AGRICULTURE | 10 | | | |
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| TOTAL | | 100 | | | |