



Centre Number	Candidate Number

**MINISTRY OF EDUCATION AND HUMAN RESOURCE DEVELOPMENT**

## **SOLOMON ISLANDS SCHOOL CERTIFICATE**

**2017**

### **AGRICULTURE**

**FRIDAY 10<sup>TH</sup> NOVEMBER 9.00 AM**

**TIME: 3 HOURS PLUS 10 MINS.  
READING TIME**

<u>SECTION</u>	<u>CONTENT</u>	<u>MARKS</u>
<b>A</b>	20 - Multiple Choice Questions	20
<b>B</b>	12 - Short Answer Questions	88
<b>C</b>	1 - Long Answer Questions	22
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	<b>TOTAL</b>	<b>130</b>

#### **INSTRUCTIONS TO CANDIDATES**

1. Do not open this Booklet until you are told to do so.
2. Make sure both your center number and candidate number are written in the spaces provided at the top right hand corner.
3. Write your answers on the spaces provided in this Booklet.

**THIS BOOKLET CONTAINS 20 NUMBERED PAGES.**

**SECTION A: MULTIPLE CHOICE QUESTIONS**

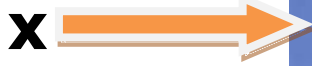
**20 MARKS**

**THIS SECTION CONSISTS OF 20 MULTIPLE CHOICE QUESTIONS WORTH ONE (1) MARK EACH. CIRCLE THE LETTER OF THE BEST ANSWER A B C or D. WRITE YOUR ANSWERS ON THE BACKFLAP AT THE BACK OF THIS BOOKLET.**

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1. Feeding animals with coconut meat provides the animal with \_\_\_\_\_.
  - A. mineral
  - B. vitamin
  - C. protein
  - D. energy
  
2. The **botanical name** of coconut is;
  - A. cocos palmae
  - B. cocos palmera
  - C. cocos nucifera
  - D. cocos cocotero
  
3. Which of the following coconut is a **local** variety?
  - A. Rennel S.I Tall,
  - B. Malayan dwarf
  - C. Malayan Tall
  - D. Hybrid variety

4. Refer to photograph shown below. How would this problem (labelled X) affect copra industry in the country.



- A. copra import will decrease  
B. copra export will decrease  
C. copra production will double up  
D. price of copra will drop
5. It is advisable to establish a cocoa plantation in the site which is
- A. water logged  
B. moderately flat and has clay loam soil  
C. steep to very steep  
D. clay or sandy soil
6. The variety **Amelonado** is best described as
- A. hardy-tree but most resistant to black-pod disease  
B. low yielding and susceptible to black-pod disease  
C. good flavor but susceptible to black-pod disease  
D. high yielding and good flavour
7. A bullock is the
- A. young castrated female cattle  
B. young castrated male cattle  
C. old castrated female cattle  
D. old castrated male cattle

8. A cattle farmer wishes to improve his cattle stock. Which of the following **breeding system** would suit his purpose best?
- A. stud breeding
  - B. cross breeding
  - C. line breeding
  - D. in-breeding
9. If the ovum is **not** fertilized in a cow, which of the following can happen?
- A. Progesterone continues to be produced
  - B. FSH starts the cycle again
  - C. Oestrogen is not being produced
  - D. Lutenizing hormone will stop the ovulation process
10. The **humus** is the
- A. grey colored substance on the soil
  - B. unbroken down organic materials
  - C. rich dark coloured material in the soil
  - D. visible organic matter on the soil.
11. The important role of **micro-organism** in the soil is to
- A. trap air escaping from the soil
  - B. neutralize acid in the soil
  - C. use water up to avoid water logging in the soil
  - D. decompose organic matter
12. A **sandy soil** will hold
- A. more water for a long time
  - B. less water than clay soil
  - C. more nutrients than loam soil
  - D. more nutrients than clay soil

13. One **disadvantage** of farming on sloppy land is
- A. high rate of soil erosion
  - B. high water retention
  - C. low organic matter
  - D. high organic matter content
14. Which of the following crops below would require **staking**?
- A. sweet potato
  - B. cassava
  - C. water melon
  - D. tomato
15. Which of these is the main reason for raising vegetable seedling in the **nursery**?
- A. Germination rate
  - B. Skills of vegetable growing
  - C. Seedlings are too small
  - D. Market demands on vegetables
16. A farmer observes **yellowish coloring** on all the leaves of his Chinese cabbage? What can he do to rectify this soil nutrient deficiency?
- A. add more humus to the soil
  - B. mix sandy soil to his farm
  - C. add new mulch materials
  - D. add more water to the soil
17. **De-suckering** in fruit trees like banana involves the removal of \_\_\_\_\_.
- A. flowers
  - B. roots
  - C. bunches
  - D. suckers

18. A "**hybrid vigour**" offspring is the product of \_\_\_\_\_.

- A. In-breeding
- B. Line-breeding
- C. Out-breeding
- D. Cross-breeding

19. Which of these root crops require **stem cutting** for planting material?

- A. Yam
- B. Pana
- C. Potato
- D. Cassava

20. One of the followings is a **disadvantage** of growing root crops;

- A. difficult to find planting material
- B. has short storage period after harvested
- C. has long storage period after harvested
- D. requires indirect planting method

**SECTION B: SHORT ANSWER QUESTIONS**

**88 MARKS**

**THIS SECTION CONSISTS OF 12 QUESTIONS WHICH ARE WORTH 88 MARKS. ENSURE THAT YOU ANSWER ALL QUESTIONS BRIEFLY BUT CLEARLY IN THE SPACES PROVIDED.**

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**21. Introduction to Agriculture**

**Refer to images D below to answer the question.**

**IMAGE D**



(a) Describe the type of farming method illustrated in the above picture

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(2 marks)

**22. Introduction to Animal Husbandry and Nutrition**

(a) Describe the term "**Animal Husbandry**"

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(2 marks)

(b) Outline two key differences between traditional and modern animal raising.

No.	Traditional Animal Raising	Modern Animal Raising
I		
II		

(2 marks)

(c) Describe one requirement for successful animal production

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(2 marks)

### 23. Coconut

(a) Describe how water helps in coconut **germination**

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(2 marks)

(b) Explain the purpose of the "**pre-nursery**" in coconut plantation establishment

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(2 marks)

(c) Describe one **advantage** of a local S.I Tall coconut varieties in SI.

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(2 marks)



**24. Cocoa**

(a) Explain how **temperature** affect growth and development of cocoa.

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(2 marks)

(b) Explain how the pest **Amblyopelta** affect cocoa production.

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(2 marks)

(c) Discuss why "**fermentation process**" is necessary?

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(2 marks)

(d) Give a reason why the site for cocoa growing should be close to road and sea access.

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(2 marks)

**25. Cattle and Pastures**

(a) Describe one factor that affected the cattle industry over the last 20 years.

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(2 marks)

(b) Explain one advantage of **Artificial Insemination** (AI) in cattle breeding?

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(2 marks)

(c) Explain one disadvantage of **overgrazing**

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(2 marks)

(d) Describe any benefits of **castration** in cattle management.

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(2 marks)

(e) The cattle industry had dropped greatly over the last 20 or so years. Discuss one **advice** that you would render to the Ministry of Agriculture and Livestock to possibly revive the industry?

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(3 marks)

(f) Discuss the importance of "**care of cow and calf**" during calving.

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(3 marks)

(g) Explain a reason why "**cattle-tethering**" can be the best option for household cattle farming in Solomon Islands.

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(2 marks)

**26. Soils**

(a) Explain one **importance** of soil to agriculture.

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(2 marks)

(b) Explain how the **amount of air** in the soil is influenced by the amount of water in the soil.

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(2 marks)

(c) Explain what is meant by a "**fertile soil**".

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(2 marks)

(d) Explain how mulching practice can help to keep soil fertile?

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(2 marks)

**27. Vegetables**

**Seeds need to be stored well so that they do not go bad quickly.**

(a) Describe a simple method of storing vegetable seeds.

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(2 marks)

(b) Describe the simple and correct way of transplanting vegetable seedlings.

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(2 marks)

(c) Describe why water is important for plants.

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(2 marks)

(d) Describe how the life cycle of the pest and diseases can be controlled by **the crop rotation** method.

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(2 marks)

(e) Describe why "**Pricking**" of vegetable seedlings is important in the nursery.

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(2 marks)

## 28. Fruits

(a) Explain the term **tree propping** in banana farming.

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(2 marks)

(b) Describe how **weed control** would possibly control pests and diseases of fruit trees in Solomon Islands.

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(2 marks)

**29. Genetics**

(a) Explain why proper **breeding-stock-selection** is important in your livestock farm?

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(2 marks)

(b) Describe one disadvantage of "**inbreeding**" system in livestock farming.

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(2 marks)

(c) A local village farmer carries out a monohybrid crossing involving his rooster with dominant gene for white feather 'W' with a hen with recessive gene 'w' owned by a cousin in the nearby village.

(i) Write the **genotypic ratio** formed in this F1cross \_\_\_\_\_  
(2 marks)

(ii) What percent (%) of offspring has **black feather** \_\_\_\_\_  
(2 marks)

(iii) Calculate percentage of **white feather birds** \_\_\_\_\_  
(2 marks)

**30. Subsistence Root Crops.**

(a) Describe why **soil type** is an important factor to be considered when planning to establish a root crop garden

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(2 marks)

(b) Describe one **economic use** of root crops to the Solomon Islands

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(2 marks)

(c) Describe why the use of **clean planting materials** an important crop management

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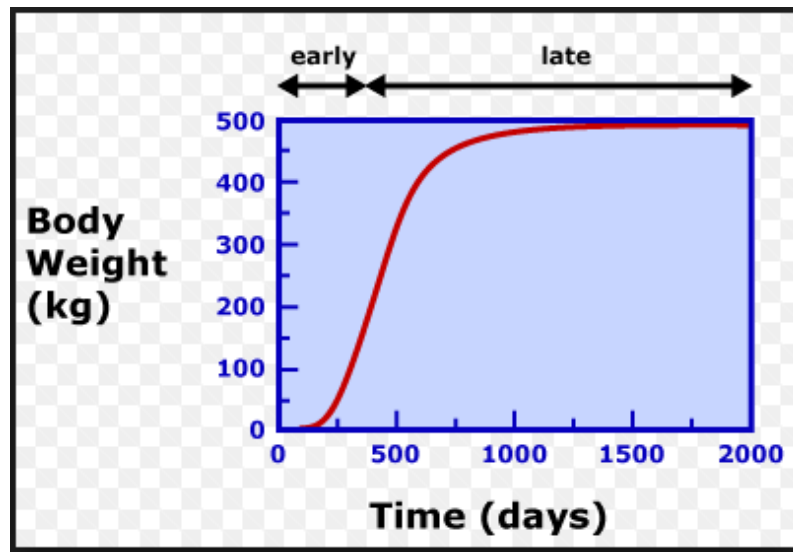
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(2 marks)

### 31. Animal Growth and Development

When an animal grows its growth goes through two (2) stages called early growth and late growth stages as shown in Figure "T".

Figure "T"



(a) Refer to Figure "T" above and explain what happens at early growth stage

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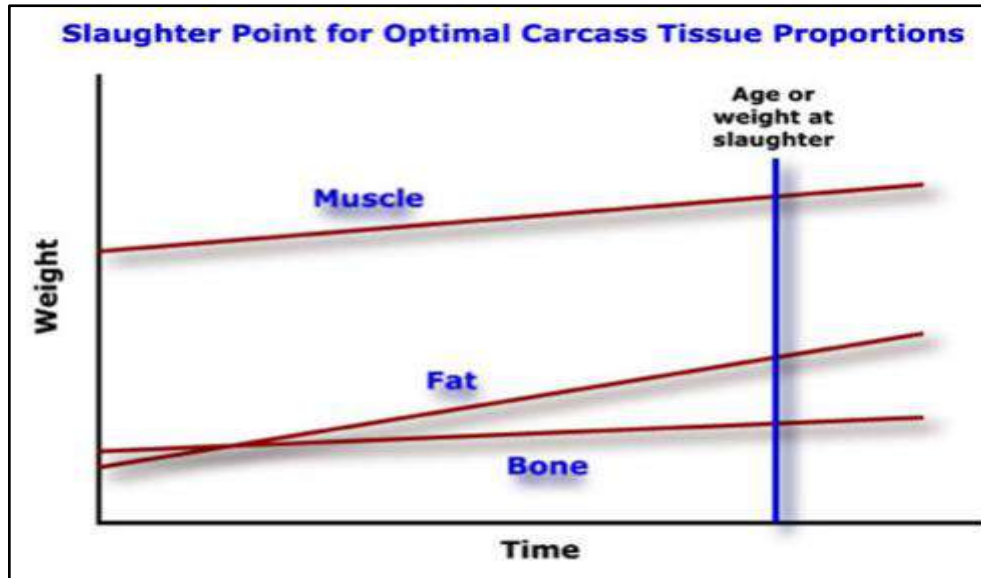
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(2 marks)

As in (b) above, when the body of the animal develops the following tissues (*muscles*, *fat*, and *bones*) also change as shown in Figure "Y" below.

**Figure "Y"**



(b) Explain the development of fat and bones in an animal from young age to slaughter age.

i. Fat;

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(2 marks)

ii. Bone;

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(2 marks)

**32. OPTIONAL QUESTIONS:**

**Choose either option 1 on Poultry Production or option 2 on Pig Production to answer for this question.**

**OPTION 1: Poultry Production**

(a) Describe why birds may have a low FCR.

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(2 marks)

(b) Study **IMAGE "U"** below and answer the questions that follow.

**IMAGE "U"**



(ii) Describe one (1) advantage of the egg production system identified above.

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(2 marks)

(iii) Describe the disease "Coccidiosis" in poultry

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(2 marks)



**OPTION 2: Pig Production**

(a) Describe why pigs may have a low FCR.

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(2 marks)

(b) Study **IMAGE "U"** below and answer the questions that follow.



(ii) Describe one (1) advantage of the this pig production system identified above.

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(2 marks)

(iii) Describe the disease "anemia" in piglets

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(2 marks)

**SECTION C: LONG ANSWER QUESTIONS****(22 MARKS)****33. Village poultry farming integrated with farm management studies****INFORMATION REQUIRED**

- I. Tiaran is a female youth. She reached only form 5 and was not able to go for further education at form six. She decided to return home and involve in a worthwhile activity. Her aim is to go into self-employment (that is, creating jobs for herself and become her own boss) while at the same time earning income to support herself in life as well as supporting his parents and younger brothers and sisters that are still attending school.
- II. She decided to look back to her form 5 agriculture notes and see what knowledge and skills she learnt at school that she can apply in her plans. She then decided to involve in village poultry farming.
- III. She firstly planned, gathered and put together these information:
- A poultry house strongly built
  - A ranging area - birds are not to roam around the village
  - Ranging area to be secured from animals and thieves
  - Existing water supply can be used
  - She would buy young chicks from the village at \$10 per bird ( a total of 200 birds per batch or production line)
  - In a year she plans to sell 400 birds (2 batches of birds in a year)
  - Price of live birds in rural area is \$50.00 per bird
  - Labour – unskilled (family) parents and younger brothers and sisters would support
    - Skilled (another farmer) doing the same project would be hired each month simply to oversee and give guidance to the progress of the project. This person will be paid at \$50.00 per month for advice.
  - Food – mostly birds would scavenge the grounds inside the fence to feed. Kitchen scraps will supplement the scavenging activities.
  - Six (6) bags of feed will be provided at each growth stage of each batch (1 starter @ \$300.00; 1 grower @\$350; 1 finisher @ 300.00) this is to supplement the scavenging activities and kitchen scraps.
  - She will have to purchase wheelbarrows (@\$400) to reduce the burden of carrying loads to and from the poultry house
  - She will also purchase three (3) each (*small; medium; large*) feeders @\$60; \$80; \$100/feeder respectively and three (3) each (*small; medium; large*) drinkers @ \$50; \$60; \$70/drinker respectively. These are to be positioned inside the house in case the birds want to feed on rations; just to supplement scavenge feeding.

(a) Explain why it is important for Tiaran to make a proper planning before she could actually implement her plans.

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(3 marks)

(b) Discuss one of her short term goals:

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(3 marks)

(c) Discuss one of her physical plans?

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(3 marks)

(d) Discuss how record keeping will help Tiaran in her planning and budgeting for the future.

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(3 marks)



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**SECTION A: MULTIPLE CHOICE  
(20 MARKS)**

Write the letter of the correct answer in the box provided. Make sure your answer is put alongside the right question number.

**Example:** If you consider A is the correct answer, write it like this:

To change your answer from A to C, cross out A and write the new answer C in the box, like this:

C

- |    |                      |    |                      |
|----|----------------------|----|----------------------|
| 1  | <input type="text"/> | 11 | <input type="text"/> |
| 2  | <input type="text"/> | 12 | <input type="text"/> |
| 3  | <input type="text"/> | 13 | <input type="text"/> |
| 4  | <input type="text"/> | 14 | <input type="text"/> |
| 5  | <input type="text"/> | 15 | <input type="text"/> |
| 6  | <input type="text"/> | 16 | <input type="text"/> |
| 7  | <input type="text"/> | 17 | <input type="text"/> |
| 8  | <input type="text"/> | 18 | <input type="text"/> |
| 9  | <input type="text"/> | 19 | <input type="text"/> |
| 10 | <input type="text"/> | 20 | <input type="text"/> |

**CENTRE NUMBER**

**CANDIDATE NUMBER**

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**FOR MARKERS USE ONLY**

SECTION		MARK	ACTUAL MARK
A	Q.1-20	20	
B.	Q.21	2	
	Q.22	6	
	Q.23	6	
	Q.24	8	
	Q.25	16	
	Q.26	8	
	Q.27	10	
	Q.28	4	
	Q.29	10	
	Q.30	6	
	Q.31	6	
	Q.32	6	
C.	Q.33	22	
<b>TOTAL</b>		<b>130</b>	
Markers Initial			