



TEST CODE **01202030**

**FORM TP 2014041**

MAY/JUNE 2014

**C A R I B B E A N   E X A M I N A T I O N S   C O U N C I L**

**C A R I B B E A N   S E C O N D A R Y   E D U C A T I O N   C E R T I F I C A T E<sup>®</sup>  
E X A M I N A T I O N**

**AGRICULTURAL SCIENCE  
(Double-Award)**

**Paper 03 – General Proficiency**

*2 hours*

**02 JUNE 2014 (a.m.)**

**READ THE FOLLOWING INSTRUCTIONS CAREFULLY.**

1. In addition to this question paper, you should have an answer booklet.
2. This paper consists of FOUR questions. Answer ALL questions.
3. Each question is worth 15 marks.

**DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.**

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### SECTION I

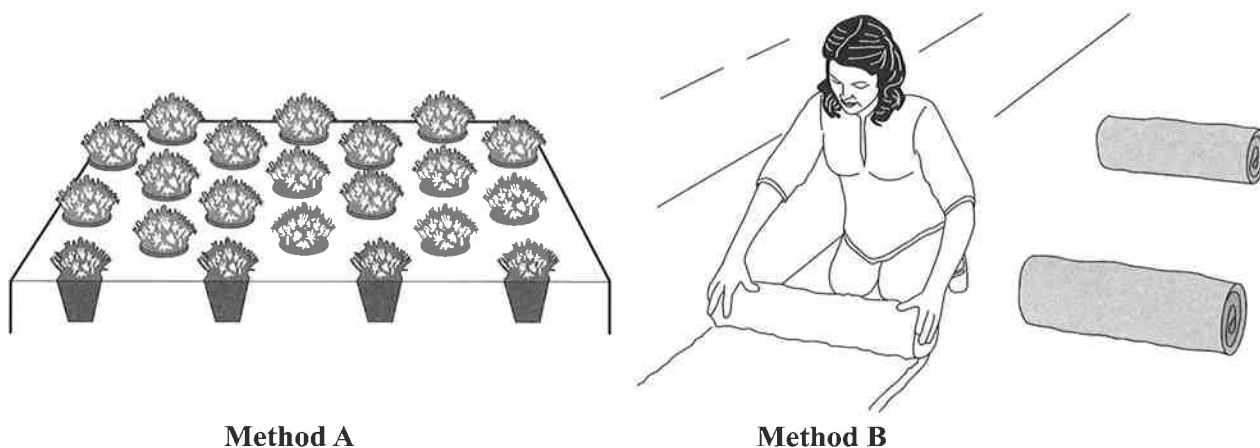
Answer ALL questions in this section.

Write your answers in the booklet provided.

1. Farmer Ramsubeik purchases a citrus estate which has been neglected for three years. During that time some plants died and those which survived have dead and diseased branches. The trees are infested with parasitic plants and are producing little or no fruits.
- (a) Describe the 'inverted T' method for propagating new citrus plants. **(5 marks)**
- (b) Farmer Ramsubeik buds some citrus plants but all of the buds died.
- Suggest TWO reasons why the unions (between buds and stock) have not been successful. **(4 marks)**
- (c) Advise Farmer Ramsubeik on the steps that he should take to rehabilitate the existing citrus estate under the following headings:
- (i) Land preparation
  - (ii) Control of parasitic plants
  - (iii) Control of dead and diseased branches **(6 marks)**

**Total 15 marks**

2. (a) Describe the seed method for establishing a lawn. Begin your answer with land preparation. **(5 marks)**
- (b) Figure 1 shows two methods that a landscaper uses to establish a lawn.



**Figure 1. Two methods of establishing a lawn**

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- (i) State ONE term used to describe BOTH methods shown in Figure 1.
- (ii) Suggest TWO advantages of establishing a lawn by Method A and THREE advantages by Method B. **(6 marks)**
- (c) The landscaper uses Bermuda grass (*Cynodon dactylon*) and savannah grass (*Axonopus compressus*) as planting material.

Suggest, with a reason, the soil type for which EACH of these grass species is suitable. **(4 marks)**

**Total 15 marks**

## SECTION II

**Answer ALL questions in this section.**

**Write your answers in the booklet provided.**

3. (a) State ONE characteristic of EACH of the following breeds of livestock:
- Saanen goat
  - Barbados Black Belly sheep
  - Rhode Island Red fowl
  - Large White pig
  - Buffalypso **(5 marks)**
- (b) A farmer supplements fish meal with molasses to feed his grazing goats. After a while he notices that the goats are showing signs of night blindness and that their bones break easily.
- Identify TWO nutrients that the feed mixture may be lacking and suggest ONE way to prevent EACH of these conditions (night blindness and fragile bones). **(4 marks)**
- (c) The people in a farm community are experiencing frequent diarrhoea as a result of the chickens they consume. At the village poultry shop, the vendor plucks the birds, washes them all in the same container of water and places them on a shelf for sale.
- (i) Explain TWO steps in the dressing process that may have contributed to the diarrhoea.
- (ii) Suggest ONE way by which the consumers may have contributed to the diarrhoea. **(6 marks)**

**Total 15 marks**

4. (a) Describe TWO techniques that can be used in biotechnology to improve animal production. **(4 marks)**
- (b) Name ONE product, other than fresh meat, that can be derived from pig meat. **(1 mark)**
- (c) A dairy cattle farmer notices that he is getting fewer calves every year from the use of Artificial Insemination (AI). He records the number of times his cows are inseminated by two different AI technicians before the cows become pregnant. Table 1 shows the farmer's record.

**TABLE 1: FARMER'S AI RECORD**

<b>AI Technician</b>	<b>Number of times AI used before cows conceived</b>
I	2
II	4

- (i) Which of the two technicians, I or II, is more successful at the AI technique?
- (ii) Suggest TWO reasons why the cows do not conceive, assuming that they are healthy and that they are fed properly. **(5 marks)**
- (d) The farmer washes the cows' udders with water from a nearby pond before milking them, using an automated system of milking. From time to time the cows' udders become hard and there are clots in the milk.

Identify the disease affecting the cows' udders, and explain TWO management practices that the farmer should use to control this disease. **(5 marks)**

**Total 15 marks**

**END OF TEST**

**IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.**