CANDIDATE – PLEASE NOTE!

PRINT your name on the line below and return this booklet with your answer sheet. Failure to do so may result in disqualification.

FORM TP 02025051

TEST CODE **01203010**

MAY/JUNE 2025

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

AGRICULTURAL SCIENCE

(Single Award)

Paper 01 – General Proficiency

1 hour 15 minutes

26 MAY 2025 (a.m.)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

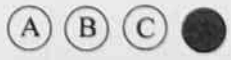
1. This test consists of 60 items. You will have 1 hour and 15 minutes to answer them.
2. In addition to this test booklet, you should have an answer sheet.
3. Each item in this test has four suggested answers lettered (A), (B), (C), (D). Read each item you are about to answer and decide which choice is best.
4. On your answer sheet, find the number which corresponds to your item and shade the space having the same letter as the answer you have chosen. Look at the sample item below.

Sample Item

Which of the following animals has the highest dressing percentage?

(A) Pig
(B) Cow
(C) Goat
(D) Chicken

Sample Answer



The best answer to this item is "Chicken", so (D) has been shaded.

5. If you want to change your answer, erase it completely before you fill in your new choice.
6. When you are told to begin, turn the page and work as quickly and as carefully as you can. If you cannot answer an item, go on to the next one. You may return to that item later.

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

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1. Agricultural marketing can BEST be described as

(A) value-added farm products
(B) selling goods produced on the farm at a marketplace
(C) buying goods from the market to be sold to exporters
(D) moving goods and services from producer to consumer

2. Which institution has the following objectives?

I. To develop a common trade policy
II. To facilitate trade between member countries
III. To act as a bargaining body when negotiating with outside forces

(A) Caribbean Development Bank (CDB)
(B) Caribbean Community (CARICOM)
(C) Caribbean Public Health Agency (CARPHA)
(D) Caribbean Research and Development Institute (CARDI)

3. Gross domestic product (GDP) is the total monetary value of all

(A) services provided to other countries
(B) finished goods consumed by a country
(C) goods produced and services provided in a country
(D) finished goods and services provided to other countries

4. The growing of crops in a liquid nutrient medium is known as

(A) hydroponics
(B) trough culture
(C) organic farming
(D) subsistence farming

5. Conventional farming is different from organic farming because conventional farming

(A) promotes good health/farm practices
(B) builds healthy soil and prevents soil erosion
(C) discourages the use of genetically modified crops (GMOs)
(D) involves the extensive use of pesticides, fertilizers and herbicides

6. Which of the following results is a benefit of growing organic crops?

(A) Increased manual labour
(B) Higher costs of production
(C) More ecological stability on farm due to increased biodiversity
(D) Increased exposure to pesticides and chemicals to control pests and diseases

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7. Which of the following are roles of an agricultural cooperative?

I. Provides scholarships for farmers to study
II. Assists farmers in the marketing of produce
III. Enables farmers to remain in business

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

8. An agronomist is a person who specializes in the study of the

(A) management of animals
(B) control and use of insects
(C) growth of ornamental plants
(D) growth and management of crops

9. Which of the following is NOT considered a factor of production?

(A) Land
(B) Capital
(C) Marketing
(D) Management

10. The type of farming done to meet family needs is known as

(A) mixed
(B) organic
(C) subsistence
(D) non-conventional

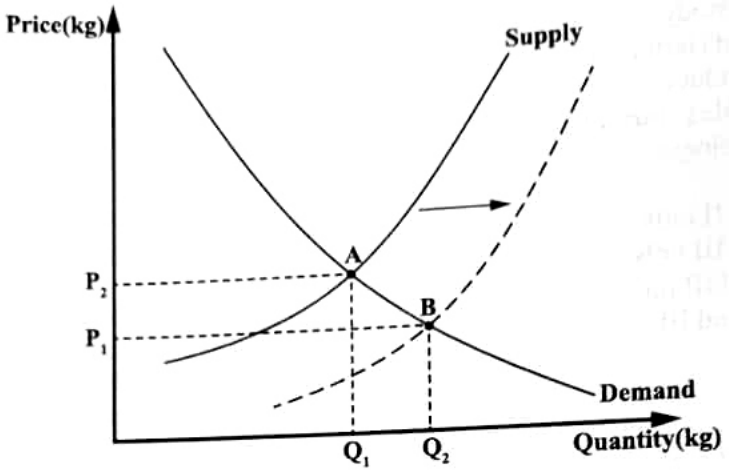
11. The government of a Caribbean country provides farmers with a rebate of 25% of the purchase price of agricultural equipment. Which of the following terms describes this arrangement?

(A) Tax
(B) Subsidy
(C) Insurance
(D) Price support

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Item 12 refers to the following diagram which shows a supply and demand curve for sweet potatoes in your local market. On the graph, P represents price and Q represents quantity.



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12. What is happening in the market, with respect to sweet potatoes, at the point A?

(A) The market price is high enough to allow farmers to earn a fair profit.
(B) The market is at a level where there is neither a shortage nor a surplus.
(C) The market price is low enough to allow consumers to buy as much as they want.
(D) Activities in the market are conducted at a price just above the intersection of the demand and supply curves.

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13. Which of the following describes a partial budget?

(A) A statement in which the projected costs and returns associated with one change in the production process is presented.
(B) A statement in which the items that represent both fixed and variable costs are considered.
(C) It allows for the profitability of different farm enterprises to be compared.
(D) It contains all income and expense items for the entire farm business.

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14. In economic terms, a shortfall is created when supply

(A) is equal to demand
(B) is less than demand
(C) is greater than demand
(D) fluctuates above demand

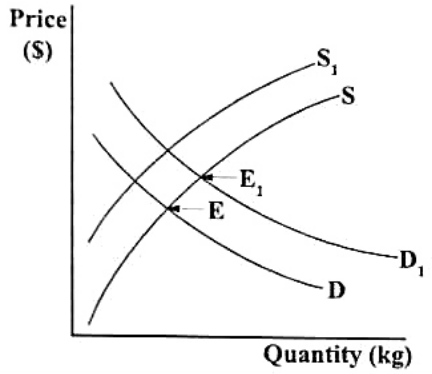
15. The expenses incurred by a farmer for pumping irrigation water is classified as what type of cost?

(A) Fixed
(B) Variable
(C) Average
(D) Marginal

16. A farmer is LEAST likely to be guaranteed a good credit rating if he

(A) uses agricultural loans for their intended purposes
(B) works out a realistic plan for the repayment of a loan
(C) is recalled to work out a payment plan for his arrears
(D) is prompt in taking care of all financial obligations

Item 17 refers to the following graph of a demand and supply curve.



17. During Lent, people demand more fish than any other meat. This is represented by a shift from

(A) S_1 to S
(B) E_1 to E
(C) D_1 to D
(D) D to D_1

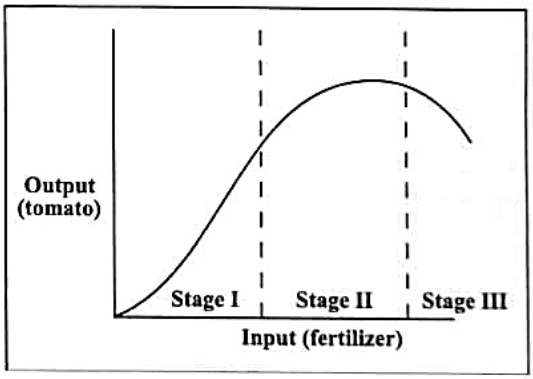
18. Which of the following BEST describes a business that is owned and controlled by farmers who use the business to create surplus earnings that are divided among members?

(A) A farmers' club
(B) An agricultural bank
(C) An agricultural cooperative
(D) An agricultural corporation

19. Fixed capital describes inputs such as

(A) feed, chemicals, cash
(B) tractors, sprayers, seeds
(C) buildings, machines, land
(D) labour, management, tools

Item 20 refers to the following graph which shows the effect of the application of fertilizer on the yield of tomatoes.



20. At which stage(s) would it be MOST economical for a farmer to produce tomatoes?

(A) I only
(B) II only
(C) III only
(D) I and II only

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21. The transfer of pollen grains from the anther to the stigma of the same plant is known as

(A) self-pollination
(B) cross-pollination
(C) wind-pollination
(D) insect pollination

22. A bag of mixed fertilizer is labelled 7:14:21. What is the ratio of nitrogen to phosphorus in this fertilizer?

(A) 1:2
(B) 2:3
(C) 3:1
(D) 3:2

23. Which of the following conditions is NOT a requirement for the germination of a seed?

(A) Light
(B) Fertilizer
(C) Sufficient moisture
(D) Favourable temperature

24. The MOST water-conserving system of irrigating crops in the Caribbean is a

(A) drip
(B) flood
(C) sprinkler
(D) sub-surface

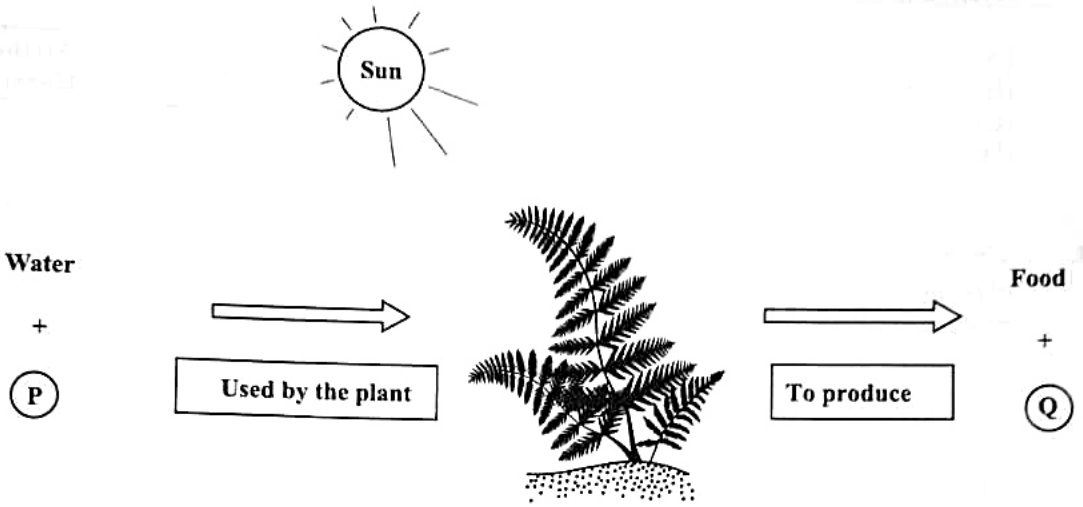
25. Which of the following should a farmer carry out to reduce the impact of water flowing down a hillside?

(A) Plant down the hill.
(B) Practise crop rotation.
(C) Use heavy machinery.
(D) Practise contour farming.

26. Seeds are formed from

(A) ruptured fruit walls
(B) fertilized ovules
(C) fertilized ovary
(D) mature ovules

Item 27 refers to the following diagram which shows one of the life processes that occur in plants. P and Q represent two gases.



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27. The atmospheric gas being produced by the plant at Q in the diagram above is

(A) oxygen
(B) nitrogen
(C) hydrogen
(D) carbon dioxide

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28. Which of the following activities cause soil erosion?

I. Overgrazing
II. Land clearing
III. Excessive rainfall

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

29. Which of the following plants can be propagated by grafting?

(A) Pineapple
(B) Sugarcane
(C) Sweet potato
(D) Avocado pear

30. The process by which plants lose water to the air through the stomata in their leaves is called

(A) absorption
(B) respiration
(C) transpiration
(D) translocation

31. Which of the following conditions will MOST likely exist when crops are grown in an area with high relative humidity?

(A) An increase in the rate of transpiration
(B) An increased incidence of fungal diseases
(C) The drying out of the surface soil
(D) Reduced risk of fungal diseases

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32. When a cross is made between parents having a single difference in traits, this is referred to as

(A) linkage
(B) dihybrid
(C) monohybrid
(D) homozygous

33. Which of the following results from the use of proper post-harvest handling techniques when dealing with cut flowers?

(A) Prevention of weight loss
(B) Maintenance of quality
(C) Physiological disorder
(D) Delay of senescence

34. An organism can have genes added to its DNA to improve food production. This process is called

(A) cloning
(B) mutation
(C) tissue culture
(D) genetic engineering

35. After spraying his crops with pesticides, Farmer Dass has excess pesticide remaining in the sprayer. The BEST way for him to take care of the pesticide is to

(A) wash the sprayer at another location
(B) pour the pesticide into a container for burning
(C) store the pesticide in the sprayer for future use
(D) store the pesticide in a labelled container for future use

36. In which of the following options is the crop correctly matched with its method of harvesting?

	Crop	Method of Harvesting
(A)	Tomatoes	Pick when fruits are dark green in colour.
(B)	Beans	Pick when pod will snap clean when broken.
(C)	Cabbage	Uproot from the ground.
(D)	Sweet potatoes	Dig when flowers emerge on the vines; avoid bruising and do not break roots.

37. Which of the following outcomes is a benefit of farm mechanization?

(A) More time spent on farm operations
(B) Increased losses in crop handling
(C) Increased dependency on the labour force
(D) Improved standard of living for rural farmers

38. Which of the following will NOT take place if the air temperature rises above 37 °C?

(A) Increased rate of transpiration in plants
(B) Increased risk of fungal diseases in plants
(C) Increased drying out of the surface soil
(D) Increased evaporation

39. In the agricultural sector, quarantine usually results in

(A) the prevention and control of the spread of disease-causing organisms from one place to another
(B) the production and spread of disease-causing organisms from one place to another
(C) a reduction in the quality of produce due to pests and diseases
(D) an increase in the quantity of produce due to useful pests

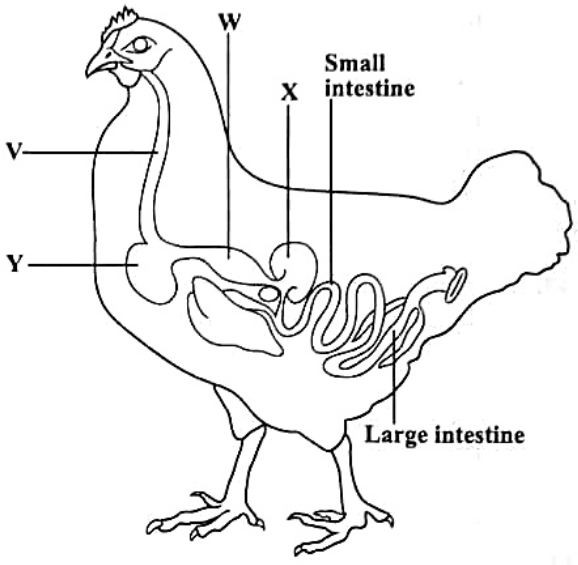
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40. Which of the following pest control methods are combined in the integrated pest management (IPM) approach?

(A) Cultural, biological, medicinal, chemical
(B) Cultural, biological, mechanical, chemical
(C) Conventional, biological, medicinal, chemical
(D) Conventional, biological, mechanical, chemical

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Items **41** and **42** refer to the following diagram showing part of the digestive tract of poultry.



41. In the part labelled Y, food is

(A) crushed and ground using rocks and grit
(B) mixed with gastric juice that is secreted
(C) put in a form that facilitates regurgitation
(D) stored temporarily and soaked before it moves through the digestive system

42. Which of the parts labelled V, W, X and Y is referred to as the glandular structure in which digestion primarily begins?

(A) V
(B) X
(C) W
(D) Y

43. A livestock farmer uses the formula

$$\frac{\text{Total kg of feed eaten}}{\text{Total kg of live weight gain}} \times 100$$

to calculate

(A) LCR
(B) FCR
(C) GAP
(D) GMP

44. Which of the following combinations of value-added products can be obtained from pigs?

(A) Manure, meat meal, offals, nuggets
(B) Steak, manure, leather, pork
(C) Bristles, bacon, ham, jerk
(D) Jerk, mutton, veal, ham

45. Broilers are slaughtered at six weeks old. The most suitable ration for a five-week old broiler is

(A) layer
(B) starter
(C) grower
(D) finisher

46. In a non-ruminant animal, gastric juice is produced in the

(A) liver
(B) ileum
(C) stomach
(D) duodenum

47. The queen bee in the hive is the female that is

(A) fertile
(B) sterile
(C) smallest
(D) sexually immature

48. Which of the following criteria are factors that influence the **nutrient requirements** for an animal?

I. Level of production
II. Desired rate of growth
III. Age, sex and weight of animal

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

49. Eggshell can be used as a feed supplement for layers because it supplies

(A) calcium
(B) sulphur
(C) sodium
(D) magnesium

50. The queen bee in a hive is fed with special food called

(A) royal jelly
(B) bee bread
(C) bee wax
(D) honey

51. The BEST type of soil on which to establish a fish farm is

(A) silt
(B) clay
(C) sand
(D) loam

52. Farmer Beverly reports that the feed conversion ratio (FCR) of her sheep and cattle is 8:1. This means that

(A) the animals consumed 8 kg of feed to put on 1 kg of live weight
(B) for every 8 kg of live weight gain, the animals consumed 1 kg of feed
(C) for every kg of dry carcass weight at slaughter, the animals would have consumed $\frac{1}{8}$ kg of feed
(D) the animals produced $\frac{1}{8}$ kg of dry carcass weight for every 8 kg of feed they would have consumed

53. Which of the following is NOT a function of candling in poultry production?

(A) Detecting abnormality in the egg
(B) Determining the fertility of the egg
(C) Determining the correct consistency of the egg
(D) Checking whether the eggs are developing properly

54. Debeaking is done in layers mainly to

(A) reduce the occurrences of cannibalism
(B) improve the dressing percentage
(C) improve the digestion of feed
(D) maintain carcass quality

55. Two diseases that affect rabbits are

(A) mastitis and pullorum
(B) coccidiosis and snuffles
(C) bronchitis and brucellosis
(D) coccidiosis and Newcastle disease

56. Which of the following is NOT a characteristic feature of layers?

(A) They are never vaccinated.
(B) Birds are given a fresh, balanced diet.
(C) The best layers are the White Leghorn.
(D) The females have a high rate of egg production.

57. Which of the following is NOT used in the process of artificial insemination?

(A) Bull
(B) Glove
(C) Sperm
(D) Syringe

58. The oestrous cycle refers to the time

(A) between conception and birth
(B) when the animal comes on heat
(C) when the animal is close to giving birth
(D) between one heat period and the next

59. Which type of ration refers to the feed that is used day-to-day to keep an animal healthy and that is necessary for sustaining its life?

(A) Weaning
(B) Balanced
(C) Production
(D) Maintenance

60. Which of the following practices is optional in broiler production but compulsory in layer production?

(A) Culling
(B) Brooding
(C) Debeaking
(D) Deworming

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END OF TEST

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