5042

CANDIDATE – PLEASE NOTE!

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

TEST CODE **01203010**

FORM TP 2015042

MAY/JUNE 2015

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

AGRICULTURAL SCIENCE

(Single Award)

Paper 01 – General Proficiency

1 hour 15 minutes

08 MAY 2015 (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) Chicken
   (B) Pig
   (C) Goat
   (D) Cow

   Sample Answer

   ● (B) (C) (D)

   The best answer to this item is "Chicken", so (A) has been shaded.
5. If you want to change your answer, be sure to 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. Marketing can BEST be described as

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

2. Gross domestic product is the total value of

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

3. A regional institution which provides undergraduate and graduate studies in agriculture is the

(A) University of the West Indies (UWI)
(B) Guyana School of Agriculture (GSA)
(C) College of Agriculture, Science and Education (CASE)
(D) Eastern Caribbean Institute of Agriculture and Forestry (ECIAF)

4. Which of the following constraints affecting agriculture CANNOT be remedied by the government?

(A) Lack of infrastructure
(B) Trade barriers
(C) Land tenure
(D) Topography

5. Which of the following statements refers to the role of HACCP?

I. Focuses on identifying and preventing the contamination of food
II. Ensures safe handling of food
III. Encourages improvement in quantity of produce

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

6. Legumes are especially important in organic crop farming because they

(A) are easy to cultivate
(B) provide a good cover
(C) promote nitrogen fixation
(D) have a high market demand

7. Which of the following can be done to speed up the breaking down of organic matter in a compost heap?

(A) Gather dead plants and animals faster.
(B) Light a fire on top to create more heat.
(C) Add water to the compost when it is dry.
(D) Allow a long time to pass before applying another layer.

8. The growing of crops without soil is called

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

9. The purchase price of a rotavator is $20 000. It has a salvage value of $5 000 and a useful life of ten years.

What is its annual rate of depreciation?

(A) $ 500
(B) $ 1 500
(C) $ 5 000
(D) $15 000

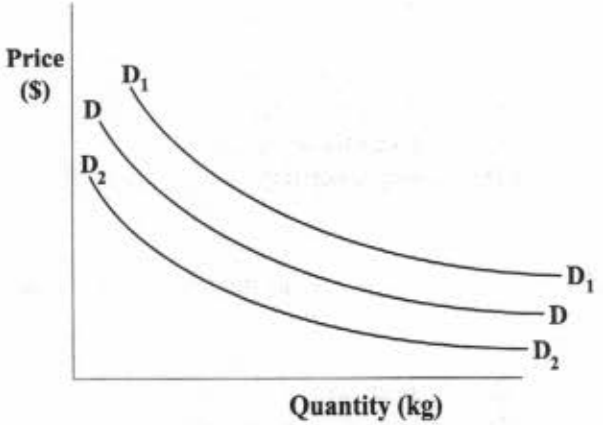
10. Which of the following is NOT a fixed cost?

(A) Fuel
(B) Taxes
(C) Machinery
(D) Depreciation

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

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

Item 12 refers to the following graph showing demand curves.



12. The curve, $D_1 - D_1$, represents

(A) a decrease in demand
(B) an increase in demand
(C) an elasticity of demand
(D) an inelasticity of demand

13. Which of the following international bodies acts as a mediator among countries on trade issues?

(A) International Seabed Authority (ISA)
(B) World Trade Organization (WTO)
(C) Environmental Protection Agency (EPA)
(D) International Trade Organization (ITO)

14. Which of the following is LEAST important when a farmer is applying for a loan?

(A) A land survey
(B) Credit history
(C) Collateral
(D) A budget

15. A plan indicating how the farmer intends to invest his resources is BEST referred to as

(A) a budget
(B) an inventory
(C) a capability map
(D) an expenditure account

16. Some farming programmes are often INEFFECTIVE because the subsidy granted is

I. not made available at the right time
II. not enough to cover the intended purpose
III. to be repaid immediately

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

17. A farmer wants to know the number of tools on her farm. Which record should she check?

(A) Labour
(B) Financial
(C) Inventory
(D) Production

Items **18**–**19** refer to the following economic terms.

(A) Net profit
(B) Gross margin
(C) Gross farm income
(D) Fixed expenses

Match each item below with one of the options above. An option may be used once, more than once or not at all.

18. Total income

19. Total income – total expenses

20. Which of the following statements describe a partial budget?

I. It contains only those income and expense items which change, and not total values.
II. It is used in situations that require a change in the farm plan.
III. The profitability of different farms can be compared.

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

21. A soil sample was collected from a school farm and found to be very high in H^+ ions. This indicates that this soil MOST likely

(A) has a high calcium content
(B) is alkaline
(C) is neutral
(D) is acidic

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

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

23. Which of the following are found in the root nodules of leguminous plants?

(A) Fungi
(B) Viruses
(C) Bacteria
(D) Actinomycetes

24. The presence of drains in a field or its periphery

(A) increases erosion
(B) decreases erosion
(C) controls weed growth
(D) improves field sanitation

25. Rainfall pattern over the last ten years can be used as

(A) an inventory record
(B) a production record
(C) a financial record
(D) a prediction tool

26. Which of the following need to be checked before operating a tractor?

I. Pressure in tyres
II. Coolant level
III. Operator age
IV. Oil leaks in seals

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

27. The transfer of pollen grains from the anther of one plant to the stigma of another plant of the same or closely related species is known as

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

28. The development of roots on a stem to form a new plant while it is still attached to the parent plant is known as

(A) budding
(B) layering
(C) grafting
(D) cutting

29. The process by which plants lose water in the form of vapour to the air is called

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

30. Plants that do NOT respond to day length are described as

(A) long day
(B) short day
(C) day neutral
(D) autotrophic

31. Selection of corn seeds in high yielding plants may result in

(A) increased fertilization
(B) disease resistance
(C) better meiosis
(D) hybridization

32. 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

33. The practice of gathering soil around the base of the stem of the plant is called

(A) layering
(B) moulding
(C) mulching
(D) air layering

34. Farmer Derek has a farm on 20 hectares of land. He cultivates vegetables and irrigates his crops with water from a pond in which he rears tilapia and ducks. Which of the following BEST describes this practice?

(A) Mixed farming
(B) Mixed cropping
(C) Plantation system
(D) Monoculture system

35. Farmer Dass has an excess of pesticide after spraying his crops. The BEST way for him to take care of the pesticide is to

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

36. The organism mycoplasma is the causative agent for

(A) scab
(B) damping off
(C) mosaic virus
(D) lethal yellowing

37. In the agricultural sector, quarantine usually results in

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

38. Which of the following is the maturity index for tomato?

(A) Change in colour of the fruit
(B) Yellowing of leaves
(C) Onset of flowering
(D) Size of the leaves

39. The keeping quality of cut Anthurium flowers could be extended by placing them in

(A) tap water
(B) spring water
(C) a salt solution
(D) a sugar solution

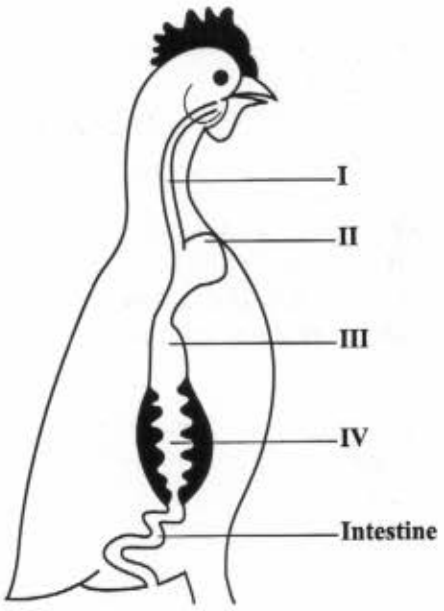
40. The technique which can be used to remove the water content of a crop is

(A) drying
(B) freezing
(C) preserving
(D) fermenting

41. The process that involves regurgitation, remastication and reswallowing of food by ruminants is called

(A) egestion
(B) ingestion
(C) peristalsis
(D) chewing of the cud

Item 42 refers to the following diagram showing part of the digestive tract of poultry.



42. Which of the parts labelled I, II, III, IV is the proventriculus?

(A) I
(B) II
(C) III
(D) IV

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

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

44. The main mineral found in a bird's egg shell is

(A) iron
(B) calcium
(C) potassium
(D) phosphorus

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. Which of the following is MOST suited for making hay?

(A) Bermuda grass
(B) Elephant grass
(C) Guinea grass
(D) Para grass

47. A broiler farmer uses the formula $\frac{\text{Total kg of feed eaten}}{\text{Total kg of live weight gain}} \times 100$ to calculate

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

48. Which of the following forages is a legume?

(A) Kudzu
(B) Pangola
(C) African star
(D) Guinea grass

49. Concrete floors in pig pens are gently sloping to

(A) prevent feed spillage
(B) facilitate easy cleaning
(C) prevent animals from slipping
(D) encourage animals to move around

50. Which breed of pig is BEST noted for being excellent mothers, producing large litters, and having a deep body?

(A) Duroc
(B) Landrace
(C) Hampshire
(D) Large white

51. Which of the following groups represents breeds of poultry?

(A) Barbados Blackbelly, Persian Black Head, Dorper
(B) Leghorn, Plymouth Rock, New Hampshire
(C) Saanen, Toggenburg, Anglo-Nubian
(D) Landrace, Hampshire, Jersey

52. During the actual process of artificial insemination, which of the following is NOT used?

(A) Bull
(B) Gloves
(C) Sperms
(D) Syringe

53. The term 'gestation' can be defined as the

(A) act of giving birth
(B) union of eggs and sperms
(C) release of eggs from ovaries
(D) time period during which pregnancy lasts

54. Which of the following is NOT a good sanitation practice in broiler production?

(A) Changing the footbath regularly
(B) Screening all windows and doors
(C) Drying and reusing old litter at intervals
(D) Cleaning the poultry house with disinfectant

55. Two diseases affecting rabbits are

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

56. Which of the following are NOT external parasites?

(A) Lice
(B) Mites
(C) Ticks
(D) Round worms

57. Pollen carried to the hive is high in water content. This water is driven off by

(A) heat build up by the sun in the hive
(B) workers who use it for honey production
(C) incessant movement of the workers' wings
(D) heat produced by the body temperature of bees

58. Which of the following are a common external pest of bees?

(A) Ants
(B) Mice
(C) Frogs
(D) Termites

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

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

60. The MOST economical time to slaughter a rabbit is

(A) 1–2 months
(B) 3–4 months
(C) 5–6 months
(D) 7–8 months

END OF TEST

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