E2063
AGRICULTURAL SCIENCE
1 hour

III

NATIONAL EXAMINATIONS COUNCIL

Senior School Certificate Examination

1 hour

AGRICULTURAL SCIENCE
PAPER III

Do **not** open this paper until you are told to do so. While waiting, read the following carefully:

1. Use **HB** pencil throughout.
2. Complete the top section of your answer sheet, where it is **not** customised, as follows:
   (a) In the space marked *Candidate's Name,* write your **surname** in capital letters followed by your **other names.**
   (b) In the space marked *School Name,* write the name of your **centre**, and in the space marked *subject Name,* write **AGRICULTURAL SCIENCE III.**
   (c) In the box marked *Subject Code*, write the digits **2063** in the spaces. There are numbered spaces in line with each digit. Shade carefully the space with the same number as each digit.
   (d) In the box marked *Registration Number*, write your **registration number** in the spaces at the top of the box. Shade the corresponding numbered spaces in the same way as for Subject Code.
3. An example is given below. This is for a candidate whose name is **GAMBO Bamidele Uche,** with **serial number 0010, registration number 8765432100BD,** and who is taking **Agricultural Science III (2063).**

National Examinations Council **ANSWER SHEET**

Use HB pencil to complete this form. Mark like this ▬ . Erase errors thoroughly.

Examination Type: SSCE ▬ BECE (I) (II) Other

If Other, write exam type in the box below

Absent

Candidate's Serial No. in School: 0 0 1 0

Subject Code: 2 0 6 3

Registration Number: 8 7 6 5 4 3 2 1 0 0 B D

Candidate's Name	GAMBO Bamidele Uche
School Number	0210231
School Name	Government Secondary School, Minna
Subject Name	Agricultural Science III

PAPER III

Answer **all** questions.

Each question is followed by **five** options lettered **A** to **E**. Choose the correct option for each question and shade in **pencil** on your answer sheet the answer space that bears the same letter as the option you have chosen. Give only **one** answer to each question and erase completely any answer you wish to change. Do **all** rough work on this question paper.

An example is given below:

The removal of small, weak plants to allow room for large healthier ones to develop is called

A. layering.
B. pruning.
C. staking
D. thinning
E. weeding.

The correct option is 'thinning' which is lettered **D.** Therefore, answer space **D** would be shaded as shown below:

[A] [B] [C] [D] [E]

1. The branch of agriculture concerned with the study of diseases and pests of livestock is

   A. agricultural economics.
   B. animal science.
   C. apiculture.
   D. aquaculture.
   E. veterinary science.

2. Inadequate food production in most developing countries is due to

   A. availability of subsidy.
   B. inadequate technology.
   C. large farm holding.
   D. low living standard.
   E. low population growth.

3. The agricultural programme set up by Nigerian government to solve problems of food shortage in 1976 was

   A. Agricultural Development Project.
   B. Farm Settlement Scheme.
   C. National Accelerated Food Production.
   D. Operation Feed the Nation.
   E. River Basin Development Authority.

4. Which of the following relationships exists between stands of crop in a monocropping system?

   A. Commensalism
   B. Competition
   C. Parasitism
   D. Predation
   E. Symbiosis

The crossing below represents dihybrid inheritance for the crossing between large brown beans (LB) and small white beans (sw) by a farmer. Use it to answer questions **35** and **36**.

	LB	Lw	sB	sw
LB	LLBB	LLBw	LsBB	LsBw
Lw	LLBw	LLww	LsBw	Lsww
sB	LsBB	LsBw	ssBB	ssBw
sw	LsBw	Lsww	ssBw	ssww

35. How many small white bean(s) will be obtained from the crossing?

A. 1
B. 3
C. 6
D. 9
E. 12

36. What will be the percentage of the large brown beans obtained from the crossing?

A. 6.25%
B. 18.75%
C. 25.00%
D. 56.25%
E. 75.75%

37. The major feature of the digestive system of polygastric animals is that they

A. do not digest cellulose and fibre .
B. do not ruminate.
C. have small and large intestines.
D. possess four stomach compartments.
E. possess large intestine only.

38. The passing of undigested grass from the rumen to the mouth through the oesophagus is termed

A. absorption.
B. assimilation.
C. digestion.
D. excretion.
E. regurgitation.

Use **Fig. 3.3** to answer questions **39** and **40**.

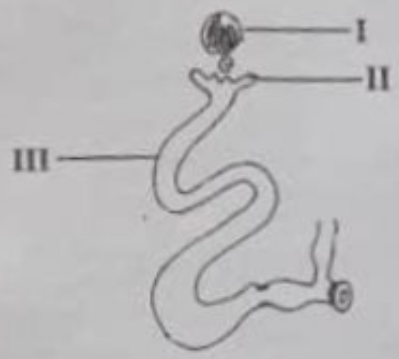

Fig. 3.3

39. What happens in the part labelled **III**?

A. Part of the albumen is secreted
B. The germinal disc is attached to the yolk
C. The shape of the egg is formed
D. The shell is formed around the yolk
E. Two shell membranes are formed

40. The release of the component of the part labelled **I** into the part labelled **II** is called

A. fertilisation.
B. implantation.
C. lactation.
D. ovulation.
E. parturition.

5. Which of the following is an edaphic factor?

A. Disease
B. Pest
C. Predator
D. Soil organism
E. Soil pH

6. A feature that best describes igneous rock is that it

A. contains fossils.
B. has stratified layers.
C. is crystalline in nature.
D. is easily weathered.
E. is soft in nature.

7. Chemical process in soil formation is mostly influenced by

A. air and temperature.
B. air and water.
C. dust and wind.
D. pressure and temperature.
E. wind and temperature.

8. In a given soil sample, the weight of humus is 15.6 g while the oven dried soil is 30 g. Calculate the percentage of humus in the soil.

A. 42%
B. 51%
C. 52%
D. 62%
E. 65%

9. The C-horizon of soil profile is also known as

A. bedrock.
B. organic material.
C. parent material.
D. subsoil.
E. topsoil.

10. Which of the following crops thrives well in soil with pH 4?

A. Banana
B. Cotton
C. Cowpea
D. Millet
E. Onion

11. A farmer cultivating leafy vegetables requires fertilisers with a relatively high content of

A. calcium.
B. magnesium.
C. nitrogen.
D. phosphorus.
E. potassium.

12. The appropriate method of applying liquid fertiliser is by

A. foliar spray.
B. ring method.
C. row placement.
D. side dressing.
E. top dressing.

13. The function of nitrosomonas in nitrogen cycle is

A. ammonification.
B. denitrification.
C. nitrification.
D. putrefaction.
E. volatilization.

28. A system of land management in which forestry, food production and conservation form the integral component is called

A. agro-forestry.
B. bush fallowing.
C. mixed farming.
D. shifting cultivation.
E. silviculture.

29. The first symptom of black pod disease of cocoa is the appearance of

A. black mass.
B. brown spores.
C. brownish spots.
D. mass of sporangia.
E. white web.

30. Pruning is an important management practice required in horticulture because it

A. enables plants to grow faster.
B. enables ornamental plants stand erect.
C. facilitates early maturity of flower.
D. gives shape to the plant.
E. reduces the cost of flower production.

31. The use of machines to control weeds is suitable when

A. crops are at bloom stage.
B. crops are of the same height.
C. crops are planted in rows.
D. weeds are yet to produce seeds.
E. weeds grow separately from the crops.

32. Which of the following chemicals will you recommend for treating cassava cuttings against termite attack before planting?

A. Aldrex T
B. Aldrin dust
C. Gammalin 20
D. Grammozone
E. Phostoxin tablet

33. Thrips are insect pests that affect the production of

A. beverages.
B. cereals.
C. legumes.
D. tubers.
E. vegetables.

34. Yam leaf spot is transmitted by

A. biting and chewing insects.
B. infected cuttings.
C. infected soil.
D. piercing and sucking insects.
E. wind blow.

20. The surveying instrument represented by **Fig. 3.2** is used for

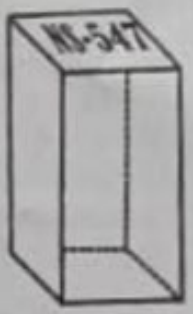

Fig. 3.2

A. marking farm stations.
B. marking of points measured.
C. measuring short offset distances.
D. measuring vertical planes.
E. taking bearing in a farm.

21. Which of the following farm power is most reliable for agricultural operations?

A. Animal
B. Human
C. Mechanical
D. Solar
E. Wind

22. Upland rice requires annual rainfall of

A. 300 mm – 600 mm.
B. 600 mm – 700 mm.
C. 750 mm – 1200 mm.
D. 800 mm – 1400 mm.
E. 1000 mm – 1600 mm.

23. The practice of covering ridges with remnants of plant and soil in yam production is

A. capping.
B. supplying.
C. thinning.
D. topping.
E. weeding.

24. The major feature that differentiates grafting from budding is the use of

A. newly sprouted scion with one bud.
B. scion with more than one bud.
C. stock of different species of the crop.
D. stock without a slit on its node.
E. tape to cover the vascular cambia.

25. The botanical name of guinea grass is

A. *Andropogon gayanus.*
B. *Cynodon dactylon.*
C. *Eleusine indica.*
D. *Panicum maximum.*
E. *Pennisetum purpureum.*

26. Good management practices in pasture production include the following **except**

A. application of fertilisers.
B. continuous grazing.
C. control of weeds.
D. reseeding of pastures.
E. zero grazing.

27. Coppicing refers to

A. felling trees in the forest.
B. leaving tree stumps to regenerate.
C. planting fast growing tree species.
D. planting tree seeds in sets.
E. transplanting seedlings.

Use **Fig. 3.1** to answer questions **14** and **15**.

Fig. 3.1

14. The part labelled **I** turns yellow when the soil is deficient in

A. calcium.
B. phosphrous.
C. potassium.
D. nitrogen.
E. sulphur.

15. The function of the organism that inhabits the part labelled **II** is to

A. bore holes in the roots.
B. covert nitrates to nitrites.
C. decompose soil organic matter.
D. fix atmospheric nitrogen.
E. prevent root diseases.

16. The main purpose of mulching is to

A. encourage leaching.
B. prevent pests attack.
C. provide plants support.
D. reduce erosion.
E. reduce evaporation.

17. Which of the following is **not** an advantage of drip irrigation?

A. Concentration of salt in the root zone is reduced
B. Fertilisers can be applied through the system
C. The system operates on a much lower line pressure
D. There is considerable maximisation on use of water
E. Water distribution in a sloppy farmland is difficult

18. Dust particles on farm animals cause

A. abortion of foetus.
B. dryness of coat.
C. respiratory disorders.
D. skin diseases.
E. total blindness.

19. The advantage of using machine in processing milk is that it

A. adds nutrients.
B. improves hygiene.
C. improves palatability.
D. reduces supply.
E. requires skill.

50. Deweeding of fish ponds is important because it

A. allows for early maturity of fishes.
B. controls the seepage of water from ponds.
C. increases hatchability of the eggs.
D. prevents buildup of diseases.
E. prevents pond pollution.

51. A fishing tool fitted with prongs used for catching large fish and sea animals is

A. fishing basket.
B. fishing gourd.
C. fishing harpoon.
D. scoop net.
E. trawl net.

52. A by-product of livestock used as feed ingredients in poultry ration is

A. blood.
B. fur.
C. hide.
D. horn.
E. skin.

53. Bee colonies contribute to high crop yield because they

A. aid decomposition of soil organic matter.
B. facilitate the fixing of plant nutrients from atmosphere.
C. increase the rate of cross pollination of flowers.
D. maintain a balance in the agro-ecosystem.
E. reduce the population of harmful crop pests.

54. Which of the following is **not** a reason for breeding?

A. Better feed consumption
B. Increased yolk size
C. Feed conversion efficiency
D. High milk production
E. Resistance to disease

55. High cost of labour in rural farming is associated with

A. inadequate finance.
B. inadequate land.
C. poor marketing system.
D. poor transportation network.
E. rural– urban migration.

56. The farm record that shows debit receipt and credit payment of a farm enterprise is

A. annual valuation.
B. cash record.
C. farm diary.
D. production record.
E. sales record.

57. Tayo's warehouse supplied 50 bags of 50 kg rice to the market at ₦10,000 in 2020 while in 2021 40 bags were supplied at ₦15,000. What is the elasticity of the supply?

A. 0.2
B. 0.4
C. 0.6
D. 0.8
E. 1.0

10. (a) (i) State the law of demand. **(2 marks)**

(ii) Mention **three** factors affecting the demand for Cocoa. **(3 marks)**

(b) Draw a supply curve for yam using the supply schedule below:

Price (₦)	Quantity Supplied (kg)
100	50
80	40
60	30
40	20
20	10

(3 marks)

(c) List sequentially, **five** stages of adopting new farming techniques. **(5 marks)**

(d) Enumerate **three** objectives of Green Revolution Programme in Nigeria. **(3marks)**

58. The movement of farm produce from the producer to the market in agricultural distribution is called

A. assembling.
B. grading.
C. loading.
D. packaging.
E. transportation.

59. Which of the following is an advantage of cooperative societies in marketing of milk? They

A. control demand of goods.
B. do not spend on advertisement.
C. influence production cost.
D. increase market price.
E. provide storage facilities.

60. The most suitable means of disseminating new ideas and techniques to peasant farmers is through

A. cinema.
B. internet.
C. radio.
D. telephone.
E. television.

E2062
AGRICULTURAL
SCIENCE
1 hour 30 minutes

II

Name:.....

Registration Number:.....

NATIONAL EXAMINATIONS COUNCIL

Senior School Certificate Examination

1 hour 30 minutes

AGRICULTURAL SCIENCE
PAPER II

Do **not** open this paper until you are told to do so. While waiting, **read the following carefully:**

Write your **Name** and **Registration Number** in the spaces provided at the top right-hand corner of this page.

This paper consists of **five** sections: **A, B, C, D** and **E**.

Answer **five** questions only: **one** from each section.

Write your answer in blue or black ink in your answer booklet.

Include labelled diagrams if they help make the answers clearer.

Turn over

PAPER II

Answer **five** questions only, **one** from each section.

SECTION A

1. (a) Give **one** reason for the following considerations in farm stead planning:

(i) Farm buildings located in high elevation **(1 mark)**

(ii) Animal pens located against wind direction **(1 mark)**

(iii) Fish ponds located on sloppy land **(1 mark)**

(iv) Vegetable gardens located on low land **(1 mark)**

(b) Mention **one** function of the following parts of a disc plough:

(i) Scraper **(1 mark)**

(ii) Spring **(1 mark)**

(iii) Furrow wheel **(1 mark)**

(iv) Disc **(1 mark)**

(c) State **four** aims of Agricultural Research Institutes. **(4 marks)**

(d) Suggest **four** solutions to poor transportation network from feeder areas to urban markets. **(4 marks)**

2. (a) Mention **two** reasons each for considering the following as problems of agricultural development in Nigeria:

(i) Land tenure system **(2 marks)**

(ii) Inadequate processing facilities **(2 marks)**

(iii) Rural-urban migration **(2 marks)**

(b) State **two** objectives of Directorate of Foods, Roads and Rural Infrastructure in Nigeria. **(2 marks)**

(c) Enumerate **four** reasons for practising secondary tillage. **(4 marks)**

(d) List **four** farm operations that require electrical power. **(4 marks)**

SECTION B

3. (a) List **four** ways by which climate aids soil formation. **(4 marks)**

(b) State **four** benefits of soil organic matter in agriculture. **(4 marks)**

(c) Mention **four** effects of irrigation practices on crop production. **(4 marks)**

(d) Enumerate **four** control measures for water pollution in fish ponds. **(4 marks)**

4. (a) Outline **four** major procedures in determining the presence of micro organisms in a soil sample in a laboratory. **(4 marks)**

(b) Itemise **two** ways of improving each of the following soil types:

(i) Sandy soil **(2 marks)**

(ii) Clayey soil **(2 marks)**

(c) State **four** effects of water pollution in agriculture. **(4 marks)**

(d) Give **one** difference between sprinkler and drip irrigation. **(2 marks)**

(e) Mention **two** disadvantages of subsurface drainage system. **(2 marks)**

SECTION C

5. (a) In a tabular form, state **two** differences between dicotyledonous and monocotyledonous plants. **(4 marks)**

(b) Give **two** reasons for the following post-planting operations:

(i) Shading **(2 marks)**

(ii) Pruning **(2 marks)**

(iii) Earthening-up **(2 marks)**

(c) Mention **two** precautions to be taken for effective grafting. **(2 marks)**

(d) (i) State Mendel's first law of inheritance in crop breeding. **(2 marks)**

(ii) Green garden egg (GG) was crossed with yellow garden egg (gg) in Seyi's vegetable garden. Represent the F1 generation of the crossing with a schematic diagram. **(2 marks)**

6. (a) (i) Briefly explain taungya system in agriculture. **(2 marks)**

(ii) State **two** reasons for the practice of taungya system in Nigeria. **(2 marks)**

(b) Mention **two** characteristics of weeds that are dispersed by wind. **(2 marks)**

(c) Discuss the production of pepper under the following headings:

(i) Spacing at field **(1 mark)**

(ii) Climatic requirement **(1 mark)**

(iii) **Two** diseases **(2 marks)**

(iv) **Two** cultural practices **(2 marks)**

(d) List **four** materials needed for the preparation of compost manure. **(4 marks)**

SECTION D

7. (a) State **two** measures that enable farmers to control the infestation of the following parasites:

(i) Lice **(2 marks)**

(ii) Tapeworm **(2 marks)**

(iii) Tick **(2 marks)**

(b) Enumerate **three** management practices that should be carried out from weaning to maturity in cattle management. **(3 marks)**

(c) Distinguish between silage and soilage. **(2 marks)**