

SC 5021
WASSCE (SC) 2022
AGRICULTURAL
SCIENCE 1
Objective Test
50 minutes

1

Name:

Index Number:

THE WEST AFRICAN EXAMINATIONS COUNCIL

West African Senior School Certificate Examination (WASSCE) for School Candidates, 2022

SC 2022

AGRICULTURAL SCIENCE 1

50 minutes

OBJECTIVE TEST
[50 marks]

Do not open this booklet until you are told to do so. While you are waiting, write your name and index number in the spaces provided at the right-hand corner of this booklet and thereafter, read the following instructions carefully.

- Use **HB pencil** throughout.
- If you have got a blank answer sheet, complete its top section as follows.
 - In the space marked *Name*, write in capital letters your **surname** followed by your **other names**.
 - In the spaces marked *Examination, Year, Subject* and *Paper*, write **'WASSCE (SC)', '2022', 'AGRICULTURAL SCIENCE'** and **'1'** respectively.
 - In the box marked *Index Number*, write your **index number** vertically in the spaces on the left-hand side. There are numbered spaces in line with each digit. Shade carefully the space with the same number as each digit.
 - In the box marked *Paper Code*, write the digits **502113** in the spaces on the left-hand side. Shade the corresponding numbered spaces in the same way as for your index number.
 - In the box marked *Sex*, shade the space marked **M** if you are **male**, or **F** if you are **female**.
- If you have got a pre-printed answer sheet, check that the details are correctly printed, as described in 2 above. In the boxes marked *Index Number, Paper Code* and *Sex*, **reshade** each of the shaded spaces.
- An example is given below. This is for a **male** candidate, whose **name** is **Chinedu Oladapo DIKKO**, whose **index number** is **4251102068** and who is offering **Agricultural Science 1**.

THE WEST AFRICAN EXAMINATIONS COUNCIL

PRINT IN BLOCK LETTERS

Name: DIKKO CHINEDU OLADAPO Examination: WASSCE (SC) Year: 2022
Surname Other Names

Subject: AGRICULTURAL SCIENCE Paper: 1

INDEX NUMBER	
4	0 1 2 3 4 5 6 7 8 9
2	0 1 2 3 4 5 6 7 8 9
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PAPER CODE	
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SEX	
Indicate your sex by shading the space marked M (for Male) or F (for Female) in this box:	<input type="checkbox"/> M <input type="checkbox"/> F

INSTRUCTIONS TO CANDIDATES

- Use grade **HB pencil** throughout.
- Answer each question by choosing one letter and shading it like this: [A] [B] [C]
- Erase completely any answer(s) you wish to change.
- Leave extra spaces blank if the answer spaces provided are more than you need.
- Do not make any markings across the heavy black marks at the right-hand edge of your answer sheet.

For Supervisors only.
If candidate is absent shade this space:

Answer **all** the questions.

Each question is followed by **four** options lettered A to D. Find the correct option for **each** question and shade **in pencil**, on your answer sheet, the answer space which bears the same letter as the option you have chosen. Give only **one** answer to **each** question.

An example is given below.

To which of the following crops does the term *ginning* apply?

- A. Kenaf
- B. Cocoa
- C. Groundnut
- D. Cotton

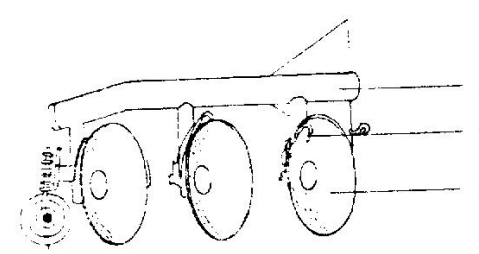
The correct answer is Cotton which is lettered D and therefore answer space D would be shaded.

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

Think carefully before you shade the answer spaces; erase completely **any** answer(s) you wish to change.

Do **all** rough work on this question paper.

Now answer the following questions.

- | | |
|---|--|
| <p>1. To reduce rural-urban migration, the government should</p> <ul style="list-style-type: none"> A. establish commodity boards. B. provide social infrastructure. C. establish tractor-hiring units. D. provide extension services to farmers. <p>2. The establishment of cooperative farming is encouraged by governments because it</p> <ul style="list-style-type: none"> A. enables farmers to control soil erosion. B. facilitates the use of hand tools. C. enables individual farmers to acquire capital. D. allows farmers to cultivate small and scattered plots. | <p>3. A non-governmental organization involved in agricultural development in West Africa is</p> <ul style="list-style-type: none"> A. Operation Feed the Nation. B. River Basin Development Authority. C. National Rural Development Project. D. National Institute of Tropical Agriculture. <p>The diagram below illustrates a farm implement. Use it to answer questions 4, 5 and 6.</p>  |
|---|--|

4. The illustrated farm implement is used for
- pulverizing soil into fine tilth.
 - breaking up soil into clods.
 - gathering topsoil.
 - levelling soil surface.
5. The part of the illustrated farm implement which enables it to roll over obstacles is labelled
- I.
 - II.
 - III.
 - IV.
6. The function of the part labelled II is to
- remove soil.
 - turn soil.
 - break clods.
 - cut stumps.
7. A combine harvester can be used simultaneously to harvest
- legumes and apply fertilizer.
 - grains and eradicate weeds.
 - mowers and distribute fertilizer.
 - cereals and thresh grains.
8. Ranging poles used in farm surveying have characteristic
- green and white bands.
 - blue and white bands.
 - red and white bands.
 - black and red bands.
9. Decomposition of soil organic matter is mainly caused by
- bacteria.
 - algae.
 - fungi.
 - nematodes.

10. The main factors responsible for rock weathering in the desert are high temperature and
- animal activity.
 - water.
 - wind.
 - root growth.
11. A difference between *physical* and *chemical* weathering is that
- there is a change in the mineral composition of rock in physical weathering.
 - the mineral composition of rock is changed in chemical weathering.
 - carbonation is necessary in physical weathering.
 - wind is necessary in chemical weathering.

Use the information below to answer questions 12 and 13.

In an experiment on soil porosity, the following results were obtained:

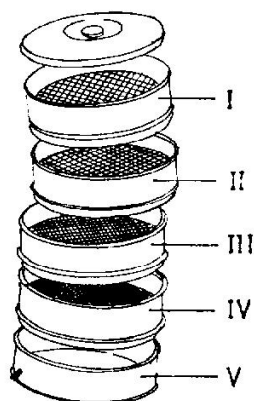
Volume of dry soil = 52 cm^3

Volume of water = 48 cm^3

Volume of soil and water = 78 cm^3

12. Determine the volume of airspace in the soil sample.
- 22 cm^3
 - 26 cm^3
 - 30 cm^3
 - 100 cm^3
13. Calculate the porosity of the soil sample.
- 28.21%
 - 42.31%
 - 45.83%
 - 61.54%

The diagram below illustrates a tool used to analyse a soil sample in an experiment. Use it to answer questions 14, 15 and 16.

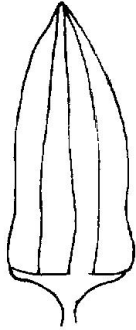


14. The aim of the experiment is to determine the soil
- structure.
 - texture.
 - mineral matter.
 - organic matter.
15. The part labelled III will contain
- clay.
 - silt.
 - coarse sand.
 - fine sand.
16. The diameter of the soil particle that would be retained in the part labelled II is
- 0.002 - 0.02 mm.
 - 0.02 - 0.2 mm.
 - 0.2 - 2.0 mm.
 - > 2.0 mm.
17. Potassium deficiency in cereal crops is indicated by
- browning of leaves from the tips and margins.
 - yellowing of younger leaves.
 - purpling of leaves.
 - white and irregular spots on leaves.
18. Nitrogen is important in plants because it is **mainly** needed in
- fruit formation.
 - root development.
 - leaf formation.
 - cell division.
19. Water can be conserved in the soil by
- mulching, strip cropping and cover cropping.
 - weeding, strip cropping and clean clearing.
 - clean clearing, mulching and strip cropping.
 - cover cropping, mulching and weeding.
20. Monocotyledonous crops include
- oil palm, rice and plantain.
 - cowpea, pepper and tomato.
 - garden egg, cassava and mango.
 - rubber, cashew and orange.
21. Swampy lands are **most** suitable for growing
- yam.
 - rice.
 - maize.
 - tomato.
22. If maize seeds are sown at a spacing of 60 cm by 90 cm, what is the plant population of maize expected on **one** hectare of farmland?
- 18,519 plants
 - 16,667 plants
 - 11,111 plants
 - 5,400 plants
23. The practice of placing the **correct** number of seeds in the soil with definite intra-row and inter-row spacing is called
- seed drilling.
 - centrifugal distribution.
 - precision planting.
 - seed broadcasting.

24. Which of the following groups of crops will thrive in areas with high rainfall?

- A. Cotton, cowpea and groundnut
- B. Millet, maize and cotton
- C. Guinea corn, cowpea and maize
- D. Cocoa, oil palm and rubber

The diagram below illustrates a crop. Use it to answer questions 25, 26 and 27.



25. The illustrated crop is

- A. *Capsicum frutescens*.
- B. *Abelmoscus esculentus*.
- C. *Glycine max*.
- D. *Hevea brasiliensis*.

26. A disease that could affect the illustrated crop is

- A. swollen shoot.
- B. smut.
- C. root knot.
- D. rosette.

27. The most suitable fertilizer for the production of the illustrated crop is

- A. muriate of potash.
- B. ammonium sulphate.
- C. potassium nitrate.
- D. single superphosphate.

28. Capping is a cultural practice carried out in the cultivation of

- A. carrot.
- B. cassava.
- C. potato.
- D. yam.

29. *Damping off* disease of tomato could be controlled by

- A. staking.
- B. supplying.
- C. thinning.
- D. pruning.

30. The most common way of controlling weeds in tree crop plantations is by

- A. crop rotation.
- B. hand pulling.
- C. flooding.
- D. slashing.

31. Which of the following crops is correctly matched with a disease that affects it?

- A. Maize - smut
- B. Sorghum - scab
- C. Rice - black arm
- D. Yam - blast

32. Soil-borne diseases could be controlled in the nursery by

- A. mulching.
- B. manuring.
- C. heat treatment.
- D. provision of shade.

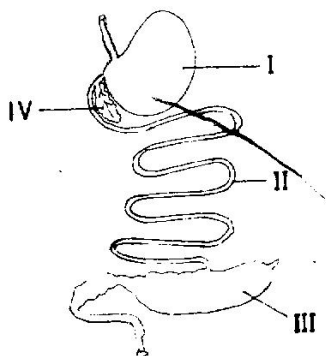
Use the information below to answer question 33.

- I. Yellowing of leaves
- II. Raised brown spots on the leaves
- III. Drying up of leaves
- IV. Exudation of gum

33. The disease of citrus described above is

- A. die-back.
- B. gummosis.
- C. tristeza.
- D. blight.

The diagram below illustrates the digestive system of a farm animal. Use it to answer questions 34, 35 and 36.



34. The diagram illustrates the digestive system of a

- A. chicken.
- B. turkey.
- C. sheep.
- D. rabbit.

35. The part labelled III is the

- A. pancreas.
- B. caecum.
- C. small intestine.
- D. large intestine.

36. Digestion of fats takes place in the part labelled

- A. I.
- B. II.
- C. III.
- D. IV.

37. Lactation normally occurs

- A. at the onset of conception.
- B. at the onset of puberty.
- C. after gestation.
- D. after mating.

38. A by-product of all livestock is

- A. hide.
- B. horn.
- C. milk.
- D. meat.

39. Removal of needle teeth is important in the management of

- A. kids.
- B. lambs.
- C. calves.
- D. piglets.

40. Which of the following farm animals will browse more on plants in a pasture?

- A. Goats
- B. Cattle
- C. Pigs
- D. Sheep

41. The main reason for castrating farm animals is to

- A. remove male odour.
- B. make the animal sterile.
- C. increase meat production.
- D. make them lose weight.

42. Which of the following statements about silage are true? It

- I. has laxative effect
- II. is acidic in reaction
- III. has a strong aroma when well prepared

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

43. If 200 layers require 25 kg of layer mash per day, calculate the quantity of feed required by 1,000 layers per day.
- 5 kg
 - 40 kg
 - 80 kg
 - 125 kg
44. Salt licks are provided for grazing animals to
- make the pasture palatable.
 - supply nutrients in pastures.
 - supplement mineral intake.
 - provide laxatives.
45. The correct order of arrangement of ration for piglets from day old is
- weaners → growers → creep → finisher.
 - creep → weaners → growers → finisher.
 - growers → finisher → creep → weaners.
 - finisher → creep → weaners → growers.
46. In farming enterprise, short term loans are used to
- purchase farm machinery.
 - construct new farm buildings.
 - construct an irrigation dam.
 - purchase agrochemicals.
47. The table illustrates
- an inventory record.
 - a production record.
 - a labour record.
 - an input record.
48. Calculate the total amount of eggs sold on the farm.
- 804
 - 552
 - 300
 - 252
49. If all the unsold eggs were later sold on 7th June at ₦5.00 per crate, calculate the income from unsold eggs. (Assuming a crate = 30 eggs)
- ₦40.00
 - ₦45.00
 - ₦50.00
 - ₦55.00
50. The gross profit of a farm business is the farm's
- net sales less cost of production.
 - total sales less operating expenses.
 - net sales less taxation.
 - total sales less cost of production.

The table below illustrates a farm record for Goodness Farms in the year 1970. Use it to answer questions 47, 48 and 49.

Date	Number of hens	Total eggs collected	Total eggs sold
4th June	362	176	96
5th June	360	199	108
6th June	360	177	48