

SC5072&1
WASSCE 2019
GENERAL
AGRICULTURE 2 & 1 **2 & 1**
Objective and Essay
3 hours

Name.....

Index Number.....

THE WEST AFRICAN EXAMINATIONS COUNCIL
West African Senior School Certificate Examination
for School Candidates

SC 2019

GENERAL AGRICULTURE 2 & 1 3 hours

Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in the spaces provided above.

This booklet consists of two papers. Answer Paper 2, which comes first in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last 2 hours after which the answer booklet will be collected. Do not start Paper 1 until you are told to do so. Paper 1 will last 1 hour.

Answer five questions in all; one question from each section.
Credit will be given for clarity of expression and orderly presentation of material.
All questions carry equal marks.

SECTION A

Answer one question only from this section.

- 1. (a) Give **five** reasons why farmers harrow farmlands. [5 marks]
- (b) (i) State **five** benefits that could be derived from irrigating farmlands. [5 marks]
(ii) Explain **three** problems associated with practicing irrigation. [6 marks]
- 2. (a) (i) Explain the term *sustainable agriculture*. [3 marks]
(ii) State **five** agricultural practices in West Africa that could adversely affect sustainable agriculture. [5 marks]
- (b) Explain **four** ways in which forest contribute to national development in West Africa. [8 marks]

SECTION B

Answer one question only from this section.

- 3. (a) What is *weathering of rocks*? [2 marks]
- (b) Explain how **each** of the following processes leads to weathering of rocks:
(i) hydrolysis;
(ii) oxidation;
(iii) solution. [6 marks]
- (c) Explain **four** ways in which living organisms influence soil formation. [8 marks]
- 4. (a) What is *soil conservation*? [2 marks]
- (b) State **three** ways in which **each** of the following practices contribute to soil conservation on the farm:
(i) cover cropping;
(ii) organic manuring. [6 marks]
- (c) Explain **one** way in which **each** of the following processes contribute to loss of soil nutrients:
(i) burning;
(ii) crop removal;
(iii) leaching;
(iv) erosion. [8 marks]

SECTION C

Answer one question only from this section.

5. (a) Name **four** food crops which are propagated by cutting. [4 marks]
- (b) Enumerate **four** factors that could affect the success of layering. [4 marks]
- (c) Give **four** advantages of pruning in tomato cultivation. [4 marks]
- (d) State **two** ways in which **each** of the following nursery practices are important:
(i) shading;
(ii) pricking-out. [4 marks]
6. (a) Enumerate **five** effects of diseases in crop production. [5 marks]
- (b) (i) Distinguish between a *storage pest* and a *field pest* of crops. [2 marks]
(ii) Give **two** examples **each** of storage pests and field pests of crops. [4 marks]
- (c) State **five** ways of controlling insect pests of stored grains. [5 marks]

SECTION D

Answer one question only from this section

7. (a) Explain **each** of the following terms as used in animal production:
(i) culling;
(ii) dipping;
(iii) quarantine. [6 marks]
- (b) Explain **five** causes of mortality in broiler production. [10 marks]
8. (a) Mention **three** sources of minerals in animal production. [3 marks]
- (b) State **two** functions of the abomasum of ruminants. [2 marks]
- (c) Distinguish between *inbreeding* and *cross breeding* in animal production. [3 marks]
- (d) (i) List **four** hormones involved in reproduction of farm animals. [4 marks]
(ii) State **one** function of **each** of the hormones named in (i). [4 marks]

SECTION E

Answer **one** question **only** from this section.

9. (a) (i) What are *marketing boards*? [3 marks]
(ii) State **five** functions of marketing boards. [5 marks]
- (b) Mention **three** objectives of agricultural extension. [3 marks]
- (c) State **five** factors that affect the supply of agricultural labour. [5 marks]
10. (a) (i) State the *law of diminishing returns*. [3 marks]
(ii) Explain the **main** cause of *diminishing returns* in agricultural production. [2 marks]
- (b) Mention **five** characteristics of agricultural extension education. [5 marks]
- (c) Give **three**
(i) advantages of *Group Extension Method*;
(ii) disadvantages of *Group Extension Method*. [6 marks]

END OF ESSAY TEST

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

**YOU WILL BE PENALIZED SEVERELY IF YOU ARE
FOUND LOOKING AT THE NEXT PAGE BEFORE
YOU ARE TOLD TO DO SO.**

PAPER 1
OBJECTIVE TEST
[50 marks]

1 hour

1. Use 2B pencil throughout.
2. On the pre-printed answer sheet, check that the following details are **correctly** printed:
 - (a) In the space marked *Name*, check your **surname** followed by your **other names**.
 - (b) In the spaces marked *Examination*, *Year*, *Subject* and *Paper*, check 'WASSCE', 'SC 2019', 'GENERAL AGRICULTURE', and '1' in that order.
 - (c) In the box marked *Index Number*, your **index number** has been printed vertically in the spaces on the left-hand side, and each numbered space has been shaded in line with each digit. **Reshade** each of the shaded spaces.
 - (d) In the box marked *Subject Code*, the digits 507213 are printed vertically in the spaces on the left-hand side. **Reshade** the corresponding numbered spaces as you did for your index number.
3. An example is given below. This is for a female candidate whose *name* is Mariam Esi KWAO. Her *index number* is 7102143958 and she is offering *General Agriculture 1*.

**THE WEST AFRICAN EXAMINATIONS COUNCIL
ANSWER SHEET**

PRINTED IN BLOCK LETTERS KWAO MARIAM ESI Name: _____ Examination: <u>WASSCE</u> Subject: <u>GENERAL AGRICULTURE</u>	GHA Year: <u>SC 2019</u> Paper: <u>1</u>
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INSTRUCTIONS TO CANDIDATES

1. Use grade 2B pencil throughout.
2. Answer each question by choosing one letter and shading it like this: A B C D E
3. Erase completely any answer you wish to change.
4. Leave extra spaces blank if the answer spaces provided are more than you need.
5. Do not make any markings across the heavy black marks at the right hand edge of your answer sheet.

INDEX NUMBER										
7	0	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8	9
0	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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4	0	1	2	3	4	5	6	7	8	9
3	0	1	2	3	4	5	6	7	8	9
9	0	1	2	3	4	5	6	7	8	9
5	0	1	2	3	4	5	6	7	8	9
8	0	1	2	3	4	5	6	7	8	9

SUBJECT CODE										
5	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
7	0	1	2	3	4	5	6	7	8	9
2	0	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8	9
3	0	1	2	3	4	5	6	7	8	9

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.

Agro-based industries are **best** described as industries that

- A. employ agricultural scientists.
- B. produce agricultural equipment.
- C. produce agricultural produce for export.
- D. use agricultural raw materials.

The correct answer is use agricultural raw materials, which is lettered D, and therefore answer space D would be shaded.

A

B

C

D

E

Think carefully before you shade the answer spaces; erase completely any answers you wish to change.

Do all rough work on this question paper.

Now answer the following questions:

1. A source of power that could be harnessed easily for agricultural production in West Africa is
 - A. solar power
 - B. wind power
 - C. hydro power
 - D. mechanical power
2. Which of the following organisms is a primary food source for fish?
 - A. Fungi
 - B. Moss
 - C. Algae
 - D. Nematode
3. The aim of zero tillage of soils is to
 - A. stabilize soil structure.
 - B. regulate soil temperature.
 - C. reduce rate of evaporation.
 - D. shed-off some soil.
4. Soil consistency refers to the degree of stickiness of soil particles when they are
 - A. rich in nutrients.
 - B. dried.
 - C. moist.
 - D. coated with zinc.
5. One reason for increasing production of agricultural raw materials is to
 - A. increase demand for exported products.
 - B. sustain existing processing industries.
 - C. provide information about market outlets.
 - D. assist research work in rural areas.
6. Agricultural extension programmes are strictly based on the farmer's
 - A. wealth.
 - B. status.
 - C. health.

7. Daily maintenance of a tractor include
- A. checking oil level and topping it when necessary.
 - B. checking and tightening nuts and screws.
 - C. cleaning the fuel injector.
 - D. washing the carburettor.
8. The production of vegetables, fruits and ornamentals is known as
- A. Agronomy.
 - B. Forestry.
 - C. Horticulture.
 - D. Agro-forestry.
9. Which of the following factors could cause a change in quantity of produce demanded?
- A. Population
 - B. Income
 - C. Taste
 - D. Price
10. Which of the following factors influence drainage in soil?
- I Water table
 - II Hard pan
 - III Macro-organisms
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
11. Egg production in poultry is **highest** in the
- A. run system.
 - B. folding system.
 - C. deep litter system.
 - D. battery cage system.
12. The **major** cost incurred by small-holder farmers in West Africa is
- A. fixed costs.
 - B. marketing costs.
 - C. variable costs.
 - D. export costs.
13. Which of the following livestock diseases is transmitted by a vector-host relationship?
- A. Tuberculosis
 - B. Fowl pox
 - C. Red water
 - D. Rinderpest
14. Which of the following sources of farm power is sporadic and uncertain?
- A. Animal power
 - B. Mechanical power
 - C. Hydropower
 - D. Wind power
15. Which of the following areas of study is likely to promote youth voluntarism in agriculture?
- A. Agricultural education
 - B. Agricultural engineering
 - C. Agricultural economics
 - D. Agricultural marketing

16. The materials found in the grit of domestic birds which aid in digestion is
- enzymes.
 - vitamins.
 - small pebbles.
 - wood shaving.
17. Which of the following roles is usually played by Agriculture extension officers?
- Assessing yields of new crop varieties
 - Breeding viable crop varieties
 - Conducting on-farm experiment
 - Disseminating research information
18. For efficient use of draught animals, they should be
- flushed.
 - dewormed.
 - muzzled.
 - tattooed.
19. Which of the following animal products is rich in proteins and antibiotics?
- Albumen
 - Egg yolk
 - Colostrum
 - Blood meal
20. The method of identifying cattle by use of code in the form of small cuttings on the ear is
- branding.
 - notching.
 - tagging.
 - tattooing.
21. Roughages fed to ruminants are rich in
- crude protein.
 - fats and oil.
 - minerals.
 - fibre.
22. Which of the following farm records enable the farmer to make good planning decision?
- Labour records
 - Inventory records
 - Financial records
- I and II only
 - I and III only
 - II and III only
 - I, II and III
23. Flowering in onion is influenced by
- soil texture.
 - day length.
 - skill of farmer.
 - depth of sowing.
24. Cannibalism among hens may be a symptom of
- vitamin A deficiency.
 - vitamin K deficiency.
 - magnesium deficiency.
 - protein deficiency.

25. Which of the following parts of cassava are edible?
- I. Stem
 - II. Leaves
 - III. Tubers
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
26. Some agricultural produce require processing after harvest because they are
- A. durable.
 - B. transportable.
 - C. storable.
 - D. perishable.
27. Simple farm machines perform efficiently when
- A. initial cost of purchase is low.
 - B. routine maintenance is carried out.
 - C. they are powered by battery.
 - D. the operator has high educational qualification.
28. Which of these crops is attacked by eelworm?
- I. Carrot
 - II. Garden egg
 - III. Tomato
- 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 planting materials is used in propagating ginger?
- A. Corm
 - B. Sucker
 - C. Rhizome
 - D. Runner
30. A weed plant which produces fruits with parachute-like tuft of hairs is
- A. *Ageratum conyzoides*.
 - B. *Boerhavia diffusa*.
 - C. *Tridax procumbens*.
 - D. *Sida acuta*.
31. Water absorbed on the surfaces of soil particles from water vapour is known as
- A. capillary water.
 - B. gravitational water.
 - C. hygroscopic water.
 - D. superfluous water.
32. An area of concern to the agricultural economist is to
- A. ensure efficiency and maximum profit from production.
 - B. care for and maintain agricultural tools and implements.
 - C. manage natural resources such as game reserves and forests.
 - D. specialize in the cultivation of field crops and soil management.

33. Which of the following practices would promote milk-let-down in dairy cattle?
- Regular feeding of roughage
 - Adherence to milking times
 - Use of sophisticated machines for milking
 - Administration of antibiotics
34. The insect pest that transmits cocoa swollen shoot virus is
- aphids.
 - ants.
 - capsids.
 - mealy bugs.
35. A person who specializes in the cultivation of field crops and soil management is an
- Agronomist.
 - Agricultural extension worker.
 - Entomologist.
 - Agricultural economist.
36. Which of the following bacteria fixes atmospheric nitrogen into the soil without a symbiotic association?
- Azotobacter*
 - Nitrobacter*
 - Nitrosomonas*
 - Rhizobium*
37. Which of the following farming practices promote mechanization in West Africa?
- Monoculture
 - Planting in rows
 - Intercropping
- I and II only
 - I and III only
 - II and III only
 - I, II and III
38. The three point linkage of a tractor
- provides rotary power to drive mountant implements.
 - allows implements to be attached to the tractor.
 - provides power to the belt pulley for machines.
 - turns the wheel to provide traction.
39. Apprenticeship in agriculture is a prominent feature of
- secondary education.
 - tertiary education.
 - vocational education.
 - adult education.
40. Which of the following soil elements is needed **most** in fruit formation?
- Nitrogen
 - Phosphorus
 - Potassium
 - Magnesium

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41. The performance of draught animals is influenced by
- I. health of animal.
 - II. age of animal.
 - III. sex of animal.
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
42. A **common** disease of a cassava plant in Ghana is
- A. damping off.
 - B. mosaic.
 - C. root-knot.
 - D. rust.
43. Ranging poles are used for
- A. making straight rows when planting.
 - B. marking farm stations.
 - C. taking detailed measurements.
 - D. marking chain length.
44. Which of the following agricultural systems is **not** practicable under communal land ownership?
- A. Agro-forestry
 - B. Mixed-cropping
 - C. Crop rotation
 - D. Mixed farming
45. One principle of farmstead outlay is that
- A. building should be erected on the poorest soils.
 - B. livestock buildings should be closed to residential areas.
 - C. the best soils should be reserved for grazing.
 - D. building should be located on sloping areas to avoid erosion.
46. Which of the following soil properties are used to describe horizons of soil profile?
- I. Texture
 - II. Structure
 - III. Colour
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
47. Elastrators are **not** suitable for castrating
- A. sheep.
 - B. goats.
 - C. pigs.
 - D. cattle.
48. Which of the following methods is the **least** effective in reducing surface run-off in hilly farmlands?
- A. Contour bunds
 - B. Strip cropping
 - C. Ridges
 - D. Mulching

49. Which of the following crop plants is usually propagated by budding?
- A. Orange
 - B. Sugarcane
 - C. Ginger
 - D. Pineapple
50. The amount of air in soil is
- A. directly proportional to the amount of water in the soil.
 - B. indirectly proportional to the soil organic matter content.
 - C. indirectly proportional to the amount of moisture in the soil.
 - D. directly proportional to the soil organic matter content.

END OF PAPER