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Candidate Name

Centre Number | Candidate Number

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

AGRICULTURE

PAPER 2

4001/2

2 hours

NOVEMBER 2024 SESSION

Additional materials:
Answer sheet,
Scientific calculator.

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page and on all separate answer paper used.

Write your answers in the spaces provided on the question paper.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [ ] at the end of each question or part question.

This question paper consists of two compulsory sections, **A** and **B**.

FOR EXAMINER'S USE	
Section A	
Section B	
TOTAL	

This question paper consists of 9 printed pages.

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[Turn over

SECTION A [60 MARKS]

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Answer **all** questions in this section in the spaces provided on the question paper.

Candidates will be penalised for answering Section A in the answer booklet.

Candidates are advised to spend approximately **80 minutes** on this section.

1 **(a)** Outline the importance of land as a national heritage.

[4]

(b) Explain the following types of agro-forestry:

(i) agro-silvicultural,

[1]

(ii) agro-silvipastoral systems.

[1]

(c) Describe suitable farming systems for natural farming region four.

[4]

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2 **(a)** Draw a well labelled diagram to show the results of an experiment on soil texture using the sedimentation method.

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[4]

(b) Illustrate hill placement fertilizer application method.

[2]

(c) Discuss factors influencing choice of an irrigation system.

[4]

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3 (a) Identify any **two** plant food storage organs.

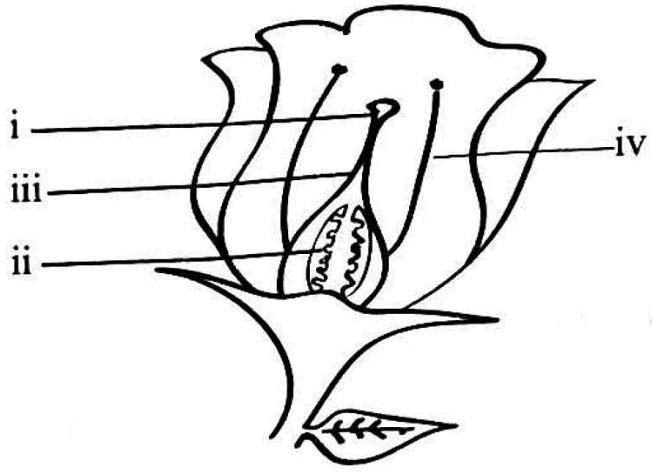
_____

_____

_____ [2]

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(b) Study the diagram of a bean flower and answer questions that follow.



(i) Identify parts labelled (i) to (iv).

(i) _____

(ii) _____

(iii) _____

(iv) _____ [4]

(ii) Give the function of the parts labelled:

(i) _____ [1]

(iii) _____ [1]

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(c) Distinguish between aerobic and anaerobic respiration in plants.

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[2]

4 **(a)** Complete the table on the comparison of mitosis and meiosis in animal husbandry.

MITOSIS	MEIOSIS
Number of chromosomes remains the same	
Nuclear division occurs once	
	Four daughter nuclei formed
No pairing of homologous chromosomes	

[4]

(b) Illustrate how meiosis results in genetic variation in farm animals.

[3]

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(c) Evaluate the effects of the environment on genetics.

[3]

5 (a) List any **five** drainage structures on a farm road.

[5]

(b) Describe steps followed in the construction of a farm fence.

[3]

(c) Differentiate between a wooden rail and a live fence.

[2]

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6 **(a)** State **four** problems faced by agricultural cooperatives.

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[4]

(b) Explain the law of diminishing returns.

[2]

(c) A farmer has a plot where either maize or tobacco can be grown. The production costs are as follows:

Enterprise	Gross Income	Total variable cost
tobacco tobacco	7 000	5 500
maize	3 000	1 000

Determine the farmer's opportunity cost on the production of:

(i) tobacco,

[2]

(ii) maize.

[2]

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SECTION B [40 MARKS]

*Answer **two** questions only from this section, **one** question from each of **Option 1** and **Option 2**.*

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At the end of the examination, fasten all separate answer papers securely to the question paper.
Do not tear off any questions from this question paper.

OPTION 1: CROP HUSBANDRY

7 **(a)** Describe the following tillage systems:

(i) primary tillage, [3]

(ii) secondary tillage, [2]

(iii) conservation tillage. [3]

(b) Explain the importance of horticulture to Zimbabwe. [7]

(c) Explain how a cultivator is adjusted for width and depth of cut. [5]

8 **(a)** Describe groups of pesticides used in agriculture. [10]

(b) Outline the maintenance of a knapsack sprayer. [5]

(c) Describe the toxicity levels of agrochemicals. [5]

9 **(a)** Identify and explain the functions of any **four** parts of a planter. [8]

(b) Discuss bacterial blight under the following headings:

(i) signs of the disease, [3]

(ii) prevention methods. [4]

(c) Describe the uses of a named legume crop. [5]

OPTION 2: ANIMAL HUSBANDRY

10 **(a)** Explain the management of a **named** young one of small livestock. [8]

(b) Justify the selection criteria for a **female** breeding stock in ruminant animals. [7]

(c) Identify environmental factors that affect the performance of a gene. [5]

11 **(a)** Discuss the management practices for a young **one** of a non ruminant farm animal from birth to weaning. [8]

(b) Outline any **four** methods of identifying farm animals. [4]

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(c) Describe the functions of the following reproductive parts of a bull.

(i) testes, [1]

(ii) scrotum, [1]

(iii) penis. [1]

(d) Identify problems of housing broilers in a deep litter . [5]

12 (a) For either Newcastle or Foot and Mouth, discuss the disease under the following headings:

(i) animals affected, [1]

(ii) signs and symptoms, [4]

(iii) prevention. [3]

(b) Discuss the process of egg formation in a hen. [7]

(c) (i) A beef animal requires **3%** of its body mass as feed for daily maintenance.
How much feed must be given to an animal weighing **600 kg** for a week? [3]

(ii) Justify adlib feeding of hay to ruminants. [2]

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