Candidate Name	Centre Number	Candidate Number
MATHS GUARDIOLA	+447852954215	

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

AGRICULTURE

4001/2

PAPER 2

NOVEMBER 2021 SESSION

2 hours

Additional materials:
Answer sheet,
Scientific calculator.

TIME 2 hours

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.

Section A

Answer **all** questions.

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

Section B

Answer **two** questions, one from each of Options **1** and **2**.

Write your answers on the separate answer paper provided.

At the end of the examination, fasten the separate answer paper securely to the question paper.

FOR EXAMINER'S USE	
Section A	
Section B	
TOTAL	

INFORMATION FOR CANDIDATES

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

You are advised to spend no longer than **80 minutes** on Section A.

This question paper consists of 10 printed pages and 2 blank pages.

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SECTION A [60 MARKS]

Answer **all** questions in this section.

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

1 **(a)** State **four** importance of the 3rd Chimurenga in Zimbabwe.

[4]

(b) Give **four** measures for preventing veld fires.

[4]

(c) Describe how a planting board is used in establishing a plantation.

[2]

2 **(a)** Identify any **two** ways of improving soil structure.

[2]

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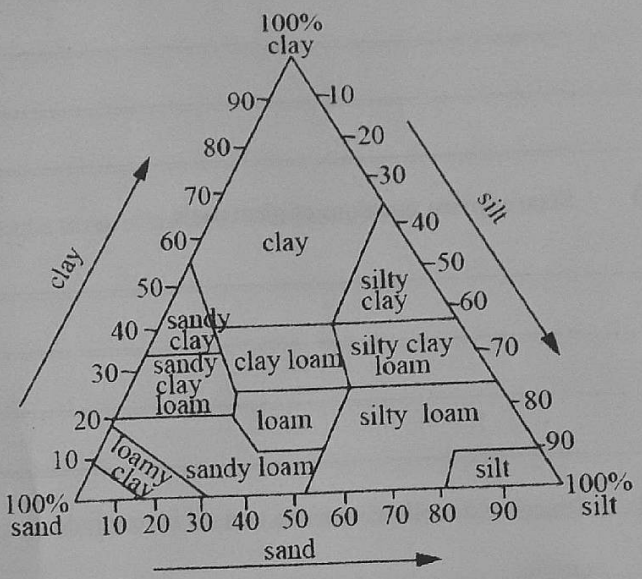
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(b) Describe any **two** ways of water harvesting.

_____

_____ [2]

(c) Use a textural triangle to determine the textural class of the soils **A**, **B** and **C**.



Soil	Sand %	Silt %	Clay %
A	59	11	30
B	50	10	40
C	30	28	42

(i) Identify the textural classes of the soil.

A _____

B _____

C _____ [3]

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(ii) Explain any **three** ways of dealing with problem animals in Zimbabwe.

_____

_____

_____

_____

_____

_____ [3]

3 (a) (i) State any **two** functions of plant roots.

_____

_____

_____

_____ [2]

(ii) Describe the following terms as used in respiration:

aerobic,

_____

_____

anaerobic.

_____

_____ [2]

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(b) Explain any **three** importance of crop breeding.

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_____

_____

_____

_____

_____

_____ [3]

(c) Describe **three** advantages of haptotropism.

_____

_____

_____

_____

_____

_____ [3]

4 (a) State the part where the following processes take place in the female reproductive system of poultry :

(i) fertilisation,

_____ [1]

(ii) formation of chalaza,

_____ [1]

(iii) formation of inner and outer membrane.

_____ [1]

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(b) For a **named** ruminant animal, suggest classes of feeds which can be used to maintain body mass.

_____

_____

_____ [3]

(c) If a **PP** polled bull, mates with a **Pp** polled cow, what is the possible **F1** generation from this cross? Show all your working.

[4]

5 (a) **Fig. 5** shows parts of a mouldboard plough. Identify parts labelled **(A-D)**

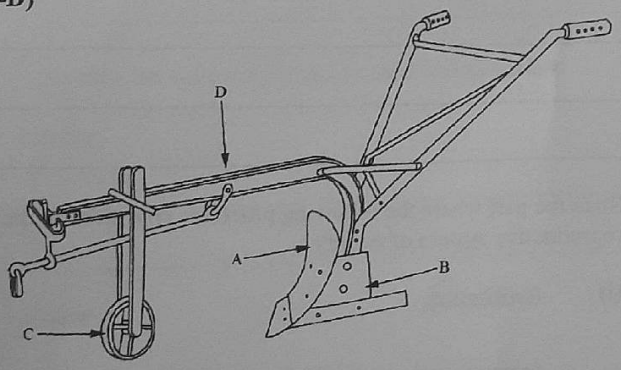


Fig. 5

Identify the parts labelled **A-D**

A _____

B _____

C _____

D _____ [4]

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(b) Explain any **four** properties of iron sheets used in roof construction of farm buildings.

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_____

_____

_____

_____ [4]

(c) State the uses of the following parts of a harness:

(i) yoke shaft,

_____ [1]

(ii) trens.

_____ [1]

6 (a) The output for sorghum and maize in Zimbabwe improved during the **2016/17** agricultural season. Suggest any **four** factors contributing to the increase.

_____

_____

_____

_____

_____

_____ [4]

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(b) **Fig. 6** shows the relationship between feed consumed and growth rate of broilers.

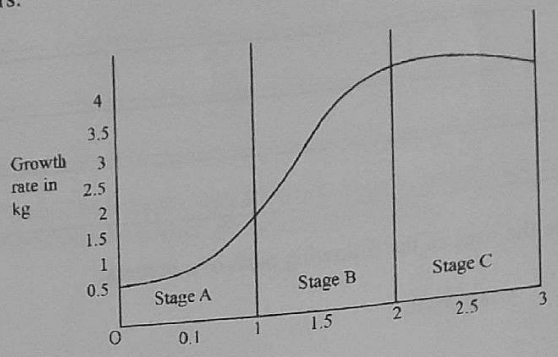


Fig. 6

(i) Which stage in **Fig. 6** is economically viable to sell broilers? [1]

(ii) Why is the stage in **(b)(i)** the most appropriate? [1]

(c) For either a **pig** or **a donkey,** design a breeding record.

[4]

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SECTION B [40 MARKS]

Answer **two** questions only, **one** question from each of **option 1 and option 2**

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OPTION 1: CROP HUSBANDRY

7 (a) Describe the characteristics of viral and fungi diseases in crop production. [10]

(b) Outline the importance of tropisms in crop growth. [10]

8 (a) Discuss the importance of land preparation in crop production. [7]

(b) Assess the need for hybrid seeds in Agriculture. [5]

(c) Describe any **four** methods of fertiliser application. [8]

9 (a) Describe the effects of the following groups of pests on crop production:

(i) biting and chewing pests, [3]

(ii) piercing and sucking pests, [3]

(iii) boring pests. [2]

(b) (i) Give the chemical equation of photosynthesis. [5]

(ii) Explain the roles of chlorophyll, carbon dioxide, water and light in photosynthesis. [7]

OPTION 2: ANIMAL HUSBANDRY

10 (a) Discuss the use of maintenance and production rations in the rearing of a **named** farm animal. [8]

(b) Discuss the advantages of using a deep litter housing system in the rearing of either a **donkey or a pig.** [7]

(c) A farmer needs to construct a holding pen measuring **5 m × 3 m** with **four** strands of wire.

Calculate the total cost of wire needed to construct the pen, given that the wire costs **$5** per meter. [5]

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11 (a) Discuss the housing requirements for broilers during brooding. [8]

(b) Explain the management practices for either **layers or rabbits,** [7]

(c) A farmer has a deep litter system measuring **24 m × 10 m** and the stocking rate is **12** birds/m^2.

(i) Calculate the carrying capacity of the deep litter. [3]

(ii) Assess effects of exceeding the required stocking density. [2]

12 (a) Describe factors considered when siting a housing unit for a **named** ruminant. [8]

(b) Study the income and expenses incurred by Mr Dube on a chicken enterprise.

Bought **2 × 50 kg** broiler starter mash at **$28** each
Bought **6 × 50 kg** broiler finisher mash at **$25** each
Bought **100**, day old chicks at $0,75 each
Labour **$100,00**
Sold **95** broilers at **$6,00** each

Calculate the farmer's gross margin. [7]

(c) Evaluate the use of vaccines in controlling viral diseases in livestock. [5]

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