



EXAMINATIONS COUNCIL OF ESWATINI  
Eswatini General Certificate of Secondary Education

CANDIDATE  
NAME

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CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**AGRICULTURE**

**6882/02**

Paper 2 Specimen

**October/November 2021**

Additional Material: Calculator

**1 hour 30 minutes**

Candidates answer:

**Section A:** Structured questions on the question paper.

**Section B:** Two essay questions on the lined paper provided.

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.  
Write in dark blue or black pen.

You may use a soft pencil for any diagrams or graphs.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all six** structured questions and attempt **two** essay questions out of the three provided.

At the end of the examination, fasten all your work securely together.

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

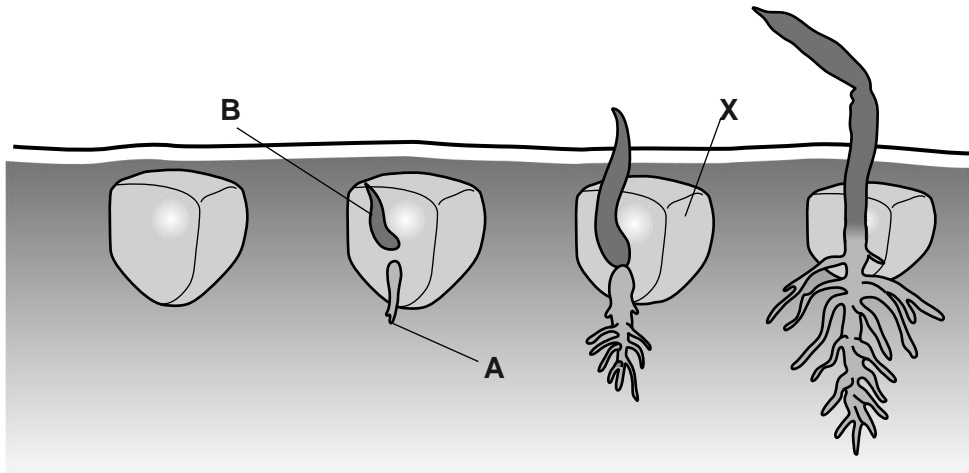
For Examiner's Use	
1	
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<b>Total</b>	

This document consists of **16** printed pages

**Section A 60 Marks**

Answer **all** questions in this section (60 Marks).

1 **Fig. 1.1** shows a germinating maize seed.



**Fig. 1.1**

(a) Name this type of germination.

..... [1]

(b) Name the parts marked **A** and **B** on the diagram.

**A** .....

**B** ..... [2]

(c) Describe the function of the material inside the part labelled **X**.

.....  
.....  
.....  
..... [2]

(d) What could be the disadvantages of planting seeds from the previous season?

.....  
.....  
.....  
..... [2]

(e) Suggest some conditions that could hinder seed germination.

.....

.....

.....

.....

.....

.....

..... [3]

**[10 marks]**

2 Fig. 2.1 shows part of the nitrogen cycle.

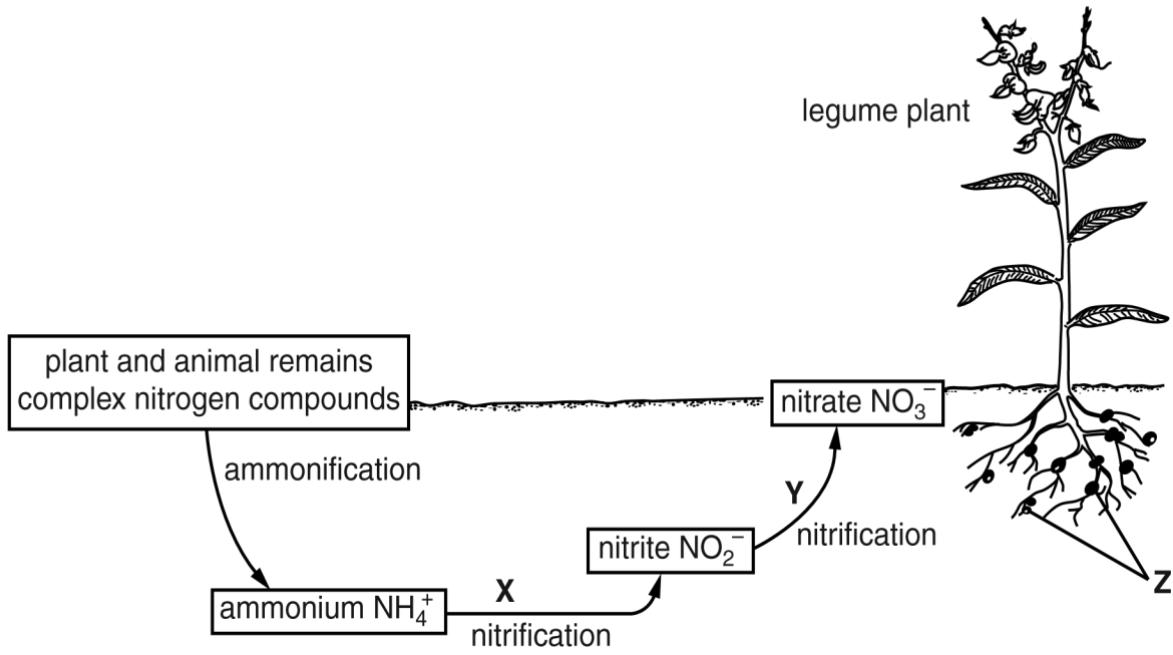


Fig. 2.1

(a) (i) Name the bacteria responsible for processes X and Y on the diagram.

X .....

Y ..... [2]

(ii) Outline the role of Z in the nitrogen cycle.

..... [1]

(b) Describe the effects of nitrogen deficiency on plant growth and development.

.....  
 .....  
 .....  
 ..... [2]

(c) Suggest any **two** farm activities that can lead to loss of nitrogen from the soil.

(i).....

(ii)..... [2]

(d) Explain how leaching reduces soil fertility.

.....

.....

.....

..... [3]

**[10 marks]**

3 (a) Explain what is meant by the terms:

(i) genotype .....

(ii) phenotype .....

[2]

(b) Two maize cobs were picked from a maize field. Yellow seeds in the cob are caused by a dominant allele **A**, while white seed colour is caused by a recessive allele **a**. A plant with the genotype **AA** is crossed with a plant with the genotype **aa**. All the resulting offspring ( $F_1$ ) had yellow seeds.

(i) Explain why the seeds were all of the same colour.  
.....  
.....  
.....  
.....

[2]

(ii) The ( $F_1$ ) yellow seeds were crossed. The resulting plants ( $F_2$ ) show seeds which were either yellow or white in colour. Use a genetic diagram to explain this outcome.

[4]

(iii) State the genotypic and phenotypic ratios of the  $F_2$  generation.  
.....  
.....

[2]

[10 marks]

4 Fig. 4.1 shows the digestive system of a ruminant.

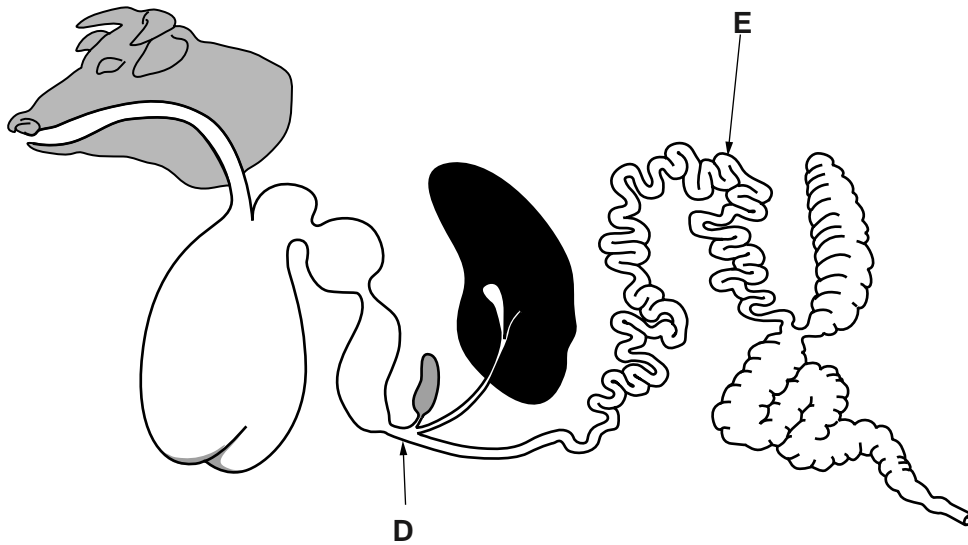


Fig. 4.1

(a) (i) What is the name of part D?

.....[1]

(ii) State the role of the part labelled E in fig 4.1.

.....  
.....[1]

(iii) Name **two** enzymes found in the stomach of a ruminant.

1.....  
2.....[2]

(b) Explain the role of microorganisms in ruminant digestion.

.....  
.....  
.....  
..... [2]

(c) Explain the difference between the terms carrying capacity and stocking rate.

.....  
.....  
.....  
..... [2]

(d) Suggest why a farmer might prefer zero grazing to rotational grazing for cattle, sheep and goats.

.....  
.....  
.....  
..... [2]

**[10 marks]**



5 Triffid weed is a common invasive plant in Eswatini.

(a) Give **one** reason why this weed is a major problem in pastures.

..... [1]

(b) Describe **two** economic impacts of this weed.

.....  
.....  
.....  
..... [2]

(c) Suggest a method of biological control for this plant.

.....  
..... [1]

(d) Describe the dangers of using chemicals to control weeds.

.....  
.....  
.....  
.....  
.....  
..... [3]

(e) Outline what you understand by the term systemic herbicide.

.....  
.....  
.....  
.....  
.....  
..... [3]

**[10 marks]**

6 Fig. 6.1 below shows the effect of two irrigation systems on maize growth rates over six months.

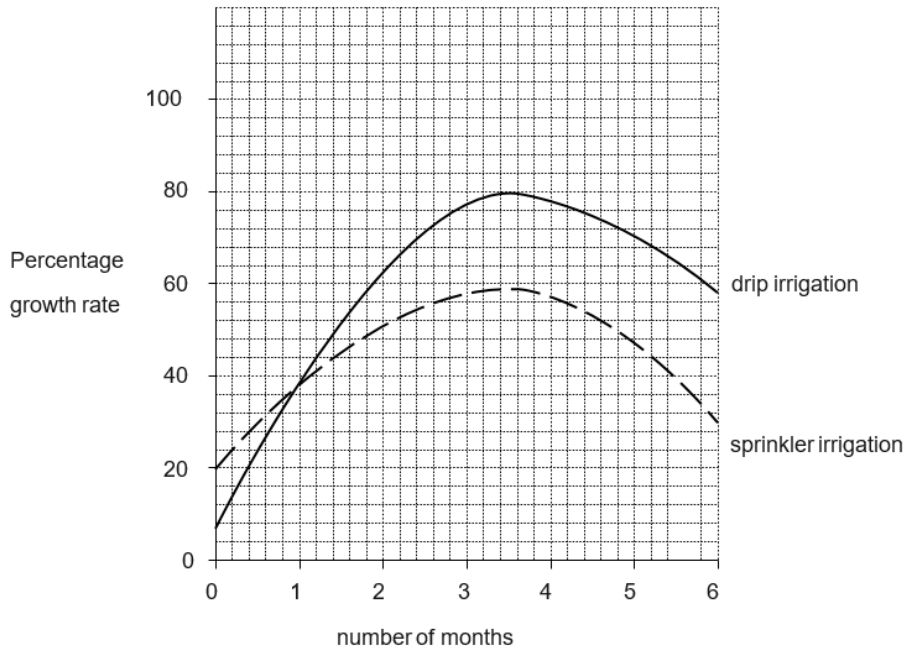


Fig. 6.1

(a) (i) State the maximum percentage growth rate using drip irrigation. [1]

(ii) In which month was the percentage growth rate the same for sprinkler and drip irrigation?

..... [1]

(b) Give reasons why the drip irrigation system results in a higher percentage growth rate than the sprinkler system.

.....  
 .....  
 .....

..... [2]

(c) State **two** methods of conserving moisture in the soil.

.....  
.....  
.....  
..... [2]

(d) (i) What is the role of a catchment area?

.....  
..... [1]

(ii) Suggest **three** ways of attempting to ensure a continuous water supply in a farm.

.....  
.....  
.....  
.....  
.....  
..... [3]

**[10 marks]**

**Section B**

Answer **any two** questions in this section (20 Marks).

- 7 (a) Describe the importance of market research to a farmer. [3]  
(b) Explain the modes of advertising an agricultural product. [3]  
(c) Suggest how a farmer can apply opportunity cost in crop production. [4]  
**[10 marks]**
- 8 (a) Describe the role of research in agricultural development. [3]  
(b) Discuss the role of women in agriculture. [3]  
(c) Explain the value of the stock movement act. [4]  
**[10 marks]**
- 9 (a) Describe the mechanism of wind pollination in a maize plant. [2]  
(b) Explain how a maize plant is adapted to wind pollination. [4]  
(c) Suggest advantages of producing plants by asexual reproduction. [4]  
**[10 marks]**







