



GWANDA STATE UNIVERSITY

FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

DEPARTMENT OF HORTICULTURE AND CROP PRODUCTION

BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE

LCS4211 FARMING SYSTEMS MODELLING

SECOND SEMESTER EXAMINATION

APRIL 2024

This examination consists of 3 pages

Time Allowed: 3 hours

Total Marks: 100

Special Requirements: None

Examiner's Name: Mrs. B. Dube

INSTURCTIONS

1. Answer **ALL** questions in Section A
2. Answer any **TWO (2)** questions in Section B

MARK ALLOCATION

Question	Marks
Section A	60
Section B	40
TOTAL ATTAINABLE MARKS	100

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SECTION A: ANSWER ALL QUESTIONS IN SECTION A

Question 1

- a) Define the following
 - i) A system [2 marks]
 - ii) Farming system [2 marks]
 - iii) Inputs [2 marks]
 - iv) Processes [2 marks]
 - v) Outputs [2 marks]
- b) Describe the key principles of a farming system [10 marks]

Question 2

- a) Describe the factors influencing the integration of the farm enterprises [10 marks]
- b) Discuss any five (5) socio-economic determinants of types of farming systems [10 marks]

Question 3

- a) Differentiate between an agro ecological region and a physiographic region. Give examples in each case [6 marks]
- b) Write a detailed account of the six (6) characteristics of small-scale farming systems in Zimbabwe [12 marks]
- c) Define the term crop modelling [2 marks]

SECTION B: Answer 2 questions

Question 4

- a) Describe three (3) features of the following farming systems
 - i) Shifting [3 marks]
 - ii) Subsistence [3 marks]
 - iii) Ranching farming [3 marks]
 - iv) Plantation [3 marks]

- v) Mixed farming [3 marks]
- b) Outline factors that determine the choice of a farming system [5 marks]

Question 5

- a) Define the following terms
 - i) Crop modelling [2 marks]
 - ii) Environment [2 marks]
 - iii) Impact [2 marks]
 - iv) Environmental impact assessment [2 marks]
 - v) Arable farming [2 marks]

- b) Explain 5 applications of crop models in agriculture [10 marks]

Question 6

- a) Describe the farming sectors found in Zimbabwe [10 marks]
- b) Explain the factors that affect the Zimbabwean climate [10 marks]