

**GWANDA STATE UNIVERSITY**



**FACULTY OF LIFE SCIENCES**

**DEPARTMENT OF CROP SCIENCES**

**BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE**

**Farming Systems**

**LCS 4211**

**Second Semester Final Examination Paper**

**August 2021**

This examination paper consists of 3 pages

**Time Allowed:** 3 hours  
**Total Marks:** 100  
**Special Requirements:** None  
**Examiner's Name:** R. Mapuranga

**INSTRUCTIONS**

1. Answer any **five (5)** questions
2. Start each question on a new page

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
<b>EACH QUESTION</b>	<b>20</b>
<b>TOTAL ATTAINABLE MARKS</b>	<b>100</b>

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1. (a) Define the following terms
  - i. A system [2]
  - ii. Farming system [2]
- (b) For a farming activity to be considered to be a farming system, it should have inputs, processes and outputs. This is typical of all systems such as biological systems (e.g. respiratory system) and artificial systems (e.g. education system). Read the following passage answer the questions that follow.
 

***Jersey Tea Estate***

*Jersey started planting tea back in 1945 and has concentrated solely on tea until late 2011 which saw the diversification into coffee and macadamias. Today Jersey has over 600ha of tea (of various varieties), 174 ha of coffee, and 176 ha of immature Beaumont macadamia.*

  - i. Name the farming system practiced at the farm described above [2]
  - ii. Identify and list any two (2) inputs, processes and outputs of the farm described above [6]
  - iii. State two (2) feedbacks which can happen in this system [1]
- (c) Discuss the three key principles of a farming system concept [9]
2. (a) State the reasons why nomadism and shifting cultivation may not be appropriate in Zimbabwe [2]
- (b) Discuss any six (6) socio-economic determinants of types of farming system [18]
3. (a) Differentiate between an agro-ecological region and a physiographic region. Give examples in each case [2]
- (b) Citing adequate examples, explain how Vincent and Thomas's classification of farming regions in Zimbabwe is (or is not) accurate [4]
- (c) Describe the characteristics and agricultural potential of Vincent and Thomas's (1961) different agro-ecological regions of Zimbabwe. [14]
4. (a) List and define any two (2) farming systems classified under small scale farming [4]
- (b) Write a detailed account on the characteristics of small scale farming systems in [16]

Zimbabwe

5. (a) Define the term crop modelling [2]
- (b) List any five types of crop models which can be used under communal farming systems [5]
- (c) Outline the limitations resulting from the adoption of crop modelling in agriculture [12]
6. (a) State and explain the reason for doing an economic evaluation of farming systems [2]
- (b) List the key features of an economic evaluation [2]
- (c) Write short notes on any four (4) types of economic evaluations that can be applied in agriculture [16]

7. Read the following script and answer the question that follow.

*Sabot International intends to establish a Biofuel Plant on a 40 000 hectares piece of land in the Chipinge District, Manicaland, Zimbabwe. The components of the project include among others the following:*

- *Clearance of a proposed 25 000 hectares piece of land for sugarcane production*
- *Construction of 7 000 houses to accommodate a staff establishment of between 11 000 and 14 000 people*
- *Construction of an ethanol processing plant*

*NB: Water for the processing plant and for irrigation purposes will be drawn from the Save river which bisect the project site.*

- (a) Define the following terms
- i. Environment [2]
  - ii. Impact [2]
- (b) Identify the anticipated environmental impacts for this venture [8]
- (c) Suggest possible mitigation measures for each of the impacts identified in (b) above [8]

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End Of The Examination Question Paper.

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