



University of Ruhuna- Faculty of Technology
Bachelor of Biosystems Technology Honors Degree
Level 4(Semester II) Examination, November/December 2025
Academic year 2023/2024

Course Unit: BSTF 4214 – Crop and Livestock Production Systems (Theory)
Duration: 2 hours

- Answer **four (4)** questions only.
 - Use a separate book for answering the questions.
 - Each question should be started with a new page.
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- 1) You have been appointed as the Lead Systems Designer of a national initiative to promote Integrated Farming Systems (IFS) as a strategy to enhance food security, improve farmers' income, and strengthen climate resilience in Sri Lanka.
 - a) Briefly state the importance of the concept of Integrated farming systems (30 marks)
 - b) Critically evaluate how Integrated Farming Systems can simultaneously improve national food and nutrition security, environmental sustainability, and economic resilience (30 marks)
 - c) Assume you are designing an IFS model for a 2-acre smallholder farm in a dry-intermediate zone of Sri Lanka. Propose a feasible, context-specific integrated farm layout, justifying your choice of enterprises (crops, livestock, aquaculture, value-added units). (40 marks)

 - 2) Assuming you are the Technical Manager of a medium-scale dairy enterprise preparing a forage security plan. Sri Lanka's expanding dairy and ruminant livestock sector increasingly depends on effective forage conservation strategies to ensure year-round feed availability, maintain milk/meat productivity, and reduce climate-related feed shortages.
 - a) Mention five (05) importance of forage conservation. (30 marks)
 - a) Write a detailed account on stages of silage processing highlighting principles of silage making. (40 marks)
 - b) Briefly explain the hay making process. (30 marks)

- 3)
- Sri Lanka's livestock sector is undergoing rapid transformation, with increasing demand for efficient, sustainable, and welfare-oriented poultry production systems. As a livestock production specialist, you are asked to develop a framework for improving poultry production at small, medium, and commercial scales.
- Critically evaluate the major farming systems used in livestock production. (30 marks)
 - Briefly discuss important considerations for livestock housing. (30 marks)
 - Design an optimal poultry housing system for a 500-bird layer or broiler unit. (40 marks)
- 4)
- Suggest suitable breeds for each given species for the given purpose to be grown in low country wet zone by giving. (40 marks)

Species	Purpose	Breed	Reason
Cattle	Milk		
Cattle	Meat		
Goat	Meat		
Goat	Milk		
Buffalo	Milk		

- You are a medium scale farmer who is going to start a swine farm in Hambantota district. Justify your decision by doing a SWOT analysis. (60 marks)
- 5)
- Develop a plan to increase water-use efficiency in open-field chilli cultivation under Sri Lankan conditions. Justify each strategy included in your plan. (40 marks)
 - Sri Lanka's capacity to expand its agriculture sector to meet rising food demand is restricted by multiple challenges. Discuss these key constraints and suggest practical and sustainable measures to strengthen the resilience and sustainability of the agricultural sector. (60 marks).

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