UNIVERSITY OF RUHUNA

FACULTY OF AGRICULTURE

First Examination in BSc Agricultural Resource Management, BSc Green Technology, BSc Agribusiness Management (Part II)

October 2022

CC12101 Basic Technical Writing Compulsory - Non GPA

Theory

INSTRUCTIONS
Answer all questions.
Only non-programmable calculators are permitted.
Mobile phones are NOT permitted.
Attach the question paper to the **end** of the answer script

TIME: 2 (two) Hours

INDEX NUMBER

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1. Read the given paragraph carefully and answer the questions given below

In the face of rapidly advancing climate change, biodiversity loss, and water scarcity, it is clear that global agriculture must swiftly and decisively shift toward sustainability. Agriculture not only contributes to these environmental problems—accounting for approximately one quarter of global greenhouse gas emissions when land use change is included—current practices also leave many communities vulnerable to climate-related disasters, as monocultures of input-dependent crops leave little room for adaptive resilience.
Fortunately, farmers and researchers have developed a thoroughly studied and tested pathway for sustainability transition in agriculture: agroecological farming systems. By shifting from large acreages of single crops to diversified cropping and livestock systems that mimic natural ecosystems, farmers can create tightly coupled cycles of energy, water, and nutrients, greatly lessening both the environmental footprint of farms and their reliance on resource-intensive external inputs.
Agroecology also gives farmers more flexibility for adapting to climate change and market fluctuations, and can provide more diverse, nutrient-dense, and culturally-appropriate diets while enhancing the environmental benefits of agriculture. Furthermore, as a science, practice, and a movement, agroecology considers both the biophysical and social sustainability of farming systems.

A critical and underappreciated feature of agroecological systems is that they replace fossil fuel- and chemical -intensive management with knowledge-intensive management. Agroecology requires farmers and farmworkers to learn how a landscape works as an ecosystem, combining farmers' observations, predictions, and experiments with ecological principles honed by scientists who study the complexities of working landscapes. To succeed, agroecological farmers must do the long-term, cumulative work of building place-based acumen: observing living soils, adapting seeds to shifting climatic and human needs, and establishing socially and ecologically resilient farming systems.

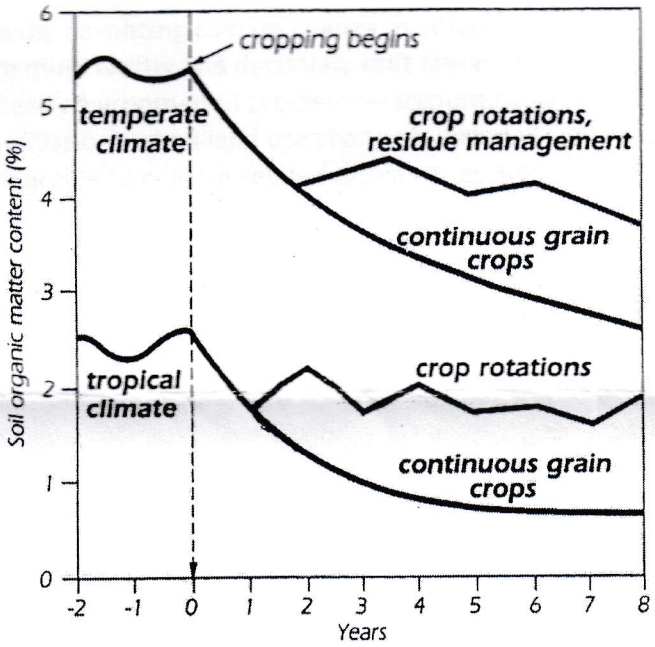
Carlisle, L, de Wit, MM, DeLonge, MS, Iles, A, Calo, A, Getz, C, Ory, J, Munden-Dixon, K, Galt, R, Melone, B, Knox, R, and Press, D. 2019. Transitioning to sustainable agriculture requires growing and sustaining and ecologically skilled workforce. *Frontiers in Sustainable Food Systems* 3, 96. doi: 10.3389/fsufs.2019.00096

i. According to the paragraph, what would be the main challenges faced by future agriculture? (3 marks)
ii. What is the solution suggested by the writer to meet the above challenges? (3 marks)
iii. Indicate three main benefits of the solution proposed in the paragraph (3 marks)
iv. List the main idea/topic sentence of each of the above 3 paragraphs. (6 marks)
v. As the paragraph explains "Agroecological farmers need to have a good understanding of the social and ecological aspects of farming and also, they should have the ability to make good judgements to make long-term plans". Explain the reasons for this statement in your own words using the facts given in the text. (10 marks)

2. a. Paraphrase the following text using the method discussed in the class (10 marks)

Conventional farming focuses on managing problems within the crop field, such as soil nutrients and pest outbreaks, with overarching goals to increase yields and productivity. Techniques associated with conventional farming include monocropping, application of inorganic fertilizers and pesticides, construction of irrigation systems, use of genetically modified seeds, and use of mechanical equipment such as tractors (Alan and Mark, 2018). "Ecological farming" is a broad descriptor for agricultural methods that seek to be more sustainable than conventional farming by avoiding negative unintended natural and social consequences (Baymax, 2015).

b. The following graph shows how soil organic matter decline with crop cultivation in the tropical and temperate regions.
Interpret the graph mentioning 5 key main points that you can observe in the figure (15 Marks)



3. a. Develop a mind map on "factors affecting current global food crisis" to explore its sub topics as much as possible (15 Marks)

b. Imagine that you are supposed to write a newspaper article on one of the selected topics from the mind map. Explain 5 main steps you may use to develop a good quality article (10 Marks)

4. a. Give three reliable sources from where you can retrieve scientific information (3 marks)
b. What do you mean by "plagiarism"? (8 Marks)
c. Mention how would you avoid plagiarism in scientific writing (10 Marks)
d. List four major skills that you need to develop to become a good technical writer (4 marks)