



UNIVERSITY OF RUHUNA

Faculty of Engineering

Mid-Semester 6 Examination in Engineering: November 2014

Module Number: CE 6244

Module Name: Ecological Engineering

[Two Hours]

[Answer all questions, each question carries FIVE marks]

- Q1. a) What is an ecosystem? [1 Mark]
- b) List four major components of an ecosystem and state each component's role in the ecosystem. [2 Marks]
- c) Explain what is meant by, (i) species, and (ii) a habitat. [2 Marks]
- Q2. a) List four major types of terrestrial biomes. [2 Marks]
- b) Deciduous forests can be found in the following areas: eastern half of North America; middle of Europe; southwest Russia, Japan, and eastern China in Asia; southern Chile and Middle East coast of Paraguay in South America; New Zealand; and southeastern Australia. The average annual temperature in a deciduous forest is 10° C. The average rainfall is 76 to 152 cm a year.
- i) Discuss how the climatic conditions affect this biome. [2 Marks]
- ii) What is the main difference between trees found in evergreen forests and deciduous forests? [1 Mark]
- Q3. a) Discuss how the biodiversity affects the stability of an ecosystem. [2 Marks]
- b) "Solar energy is the primary source of energy for any type of ecosystem." Analyze this statement critically. [2 Marks]
- c) Discuss the role of decomposers in the nitrogen cycle. [1 Mark]

Q4. a) What is the role of the altitude on the characteristics of an ecosystem, as an environmental factor?

[2 Marks]

b) What are the properties of water which make it an ideal medium for living organisms?

[3 Marks]