



GWANDA STATE UNIVERSITY
FACULTY OF NATURAL RESOURCES MANAGEMENT AND
AGRICULTURE
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL SCIENCE

RANGELAND MANAGEMENT

NGE 2204

Main Examination Paper

September 2024

This examination paper consists of 2 pages

Time Allowed: 3 hours

INSTRUCTIONS

1. Answer any **four** questions.
2. Each question carries 25 marks.
3. Credit will be given to answers that are clear, illustrated, concise, and grammatically well-constructed.

1. Analyze the ecological and management implications of the following rangeland phenomena:
 - a. Range succession dynamics
 - b. The impacts of invasive plant species
 - c. Herbivore foraging behaviors and their effects
 - d. Strategies and considerations for restoring degraded rangelands
 - e. The provisioning of key ecosystem services by rangelands [25]
2. Critically examine the typical plant succession patterns observed in rangelands following major disturbances. Discuss how an understanding of these dynamics can inform and guide effective rangeland restoration and conservation efforts. [25]
3. Discuss the key challenges and threats facing rangelands globally. Outline some of the strategies being employed to address these issues. [25]
4. Analyze the concept of carrying capacity as it applies to rangelands, and evaluate the management approaches used to maintain sustainable stocking rates and livestock productivity. [25]
5. Investigate the role of fire in the healthy functioning and productivity of rangeland ecosystems. Assess the ecological impacts and management considerations associated with the use of fire in these systems. [25]
6. Evaluate the effectiveness of different rangeland restoration techniques, and critically discuss the factors that influence the success or failure of these approaches in rehabilitating degraded rangelands. [25]

END OF PAPER