



UNIVERSITY EXAMINATIONS

REGULAR - NJORO CAMPUSRESIT/SPECIAL EXAMINATION, 2023-2024 ACADEMIC YEARFIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCENARE 101: INTRODUCTION TO NATURAL RESOURCES

STREAM: BSc (GEOG/WIEM)

TIME: 2 HOURS

EXAMINATION SESSION: JULY

YEAR: 2024

INSTRUCTIONS:

- (i) Answer ALL questions in Section A and any other TWO in Section B
- (ii) Do not write on the question paper
- (iii) Show your working clearly

SECTION A (30 MARKS)

QUESTION ONE

Section A: Multiple Choice Questions (15 Questions, 1 mark each, Total 15 Marks)

- i. Which of the following is considered a renewable natural resource? A) Natural gas B) Coal C) Wind energy D) Uranium E) Oil
- ii. What is the primary reason for conserving biodiversity? A) To increase urban development B) To support ecosystem stability and resilience C) To reduce global temperatures D) To generate economic profit E) To promote tourism
- iii. Which principle of natural resource management emphasizes sustainable use? A) Preservation B) Ecocentrism C) Utilitarian conservation D) Anthropocentrism E) None of the above
- iv. In which biome would you most likely find permafrost? A) Desert B) Grassland C) Temperate forest D) Tundra E) Tropical rainforest
- v. What is the main component of natural gas? A) Methane B) Ethane C) Propane D) Butane E) Carbon dioxide
- vi. Which of the following best describes the term "niche" in ecology? A) The physical location where a species lives B) The role and position of a species within its environment C) The total number of species in an ecosystem D) The genetic variation within a species E) The seasonal migration patterns of a species

- vii. What is the goal of adaptive management in natural resource management? A) To enforce strict regulations B) To adjust strategies based on feedback and changing conditions C) To eliminate human impact on ecosystems D) To maximize resource extraction E) To conserve only endangered species
- viii. Which type of ecosystem service is provided by pollinators like bees? A) Provisioning B) Regulating C) Cultural D) Supporting E) None of the above
- ix. What is the primary cause of desertification? A) Excessive rainfall B) Overgrazing C) Industrial pollution D) Volcanic eruptions E) Natural forest fires
- x. What is the concept of "carrying capacity" in ecology? A) The total biomass in an ecosystem B) The maximum population size an environment can sustain C) The number of species in a habitat D) The rate of species extinction E) The migration capacity of a species
- xi. What is a common method to manage fisheries sustainably? A) Overfishing B) Establishing marine protected areas C) Increasing fishing quotas D) Eliminating all fishing activities E) Introducing invasive species
- xii. Which of the following is a characteristic of tropical rainforests? A) Low biodiversity B) Seasonal drought C) High levels of precipitation D) Sparse vegetation E) Temperate climate
- xiii. Which of the following best describes the concept of ecosystem resilience? A) The ability of an ecosystem to absorb disturbances and still function B) The total number of species in an ecosystem C) The reproductive rate of a species D) The economic value of an ecosystem E) The migration patterns of animals
- xiv. Why are estuaries considered important ecosystems? A) They are isolated from human activity B) They have no significant ecological role C) They provide crucial habitats for many marine species D) They are primarily freshwater systems E) None of the above
- xv. What is the primary objective of sustainable agriculture? A) Maximizing crop yield at any cost B) Reducing the use of renewable resources C) Maintaining soil health and reducing environmental impact D) Increasing the use of synthetic fertilizers E) Promoting monoculture farming



QUESTION TWO

- (a) Explain the differences between renewable and non-renewable natural resources, giving two examples in each category. (5 Marks)
- (b) Discuss the role of biodiversity in ecosystem health and resilience. (5 Marks)
- (c) Explain how biodiversity contributes to ecosystem stability. (5 Marks)
- (d) Describe two threats to biodiversity and their potential impacts on ecosystems. (5 Marks)

SECTION B:

QUESTION THREE

You are an environmental consultant tasked with developing a sustainable management plan for a forested area experiencing high rates of deforestation. Outline the key components of your plan, focusing on strategies for balancing conservation with economic development. (20 Marks)

QUESTION FOUR

A coastal community is facing challenges related to rising sea levels and increased storm frequency due to climate change. Develop a comprehensive adaptation strategy that addresses both the ecological and social aspects of this issue. (20 Marks)

QUESTION FIVE

Evaluate the effectiveness of current policies aimed at reducing plastic pollution in marine environments. Propose additional measures that could enhance these policies and promote marine conservation. (20 marks)
