INTERNATIONAL UNIVERSITY OF EAST AFRICA
'Learning to Succeed'

# FACULTY OF SCIENCE AND TECHNOLOGY

## END OF SEMESTER EXAMINATIONS - APRIL 2025

**PROGRAMME: BSEM**
**YEAR/SEM: YEAR 2/SEMESTER 2**
**COURSE CODE: BSE2204**
**NAME: LAND USE AND ENVIRONMENT PLANNING**

**DATE:**
**TIME:**

**INSTRUCTIONS TO CANDIDATES:**

## SECTION A

*Answer all questions in this section (40 marks)*

**Question 1:**

a.Define the following terms as applied to land use planning (2 marks each)
i. land
ii. land use
iii. land use planning
iv. A land use plan
v. Stakeholder
b. What do you understand by the term land suitability (2 marks)
c. How does potential land suitability differ from actual land suitability? (6 marks)
d. Why is public participation a crucial step in land use planning? (8 marks)
e. How does the topography of an area (e.g., elevation, slope, and drainage patterns) influence
its suitability for various land uses such as agriculture, urban development, and conservation? (7marks)
f. Differentiate between habitable and uninhabitable land, in reference to global land breakdown (4 marks)
g. Which land use takes the biggest portion of the global habitable land and what percentage does it take? (3 marks)

**Question 2:**

a. What are the major causes of land degradation (e.g., erosion, deforestation, desertification), and what strategies can be implemented to restore and maintain healthy land ecosystems? (8 marks)
b. How does land sharing differ from land sparing? (6 marks)
c. Giving at least 2 examples under each category, distinguish between habitable and uninhabitable land. (6 marks)
d. How does intensive agriculture differ from extensive agriculture? Of the two, which one is more environmental friendly and why? (8 marks)
e. How do land characteristics affect land use? (6 marks)
f. With examples differentiate between land characteristics and land use requirements. (6 marks)

## SECTION B

*Attempt any 3 questions (60 marks)*

**Question 1:**

Land use types vary from location to location due to factors such as climate, policies, and levels of economic development. Discuss the common land use types in your home country. (20 marks)

**Question 2:**

A rural community relies heavily on farming, and to increase crop yields, they adopt intensive agricultural practices, including excessive pesticide use and monocropping. Over time, soil fertility declines, and water bodies near the farms experience algal blooms. How do these agricultural practices affect soil health and aquatic ecosystems? What sustainable farming techniques could help maintain productivity while minimizing environmental damage? (20 marks)

**Question 3:**

a. What are the key differences between land sparing and land sharing in terms of land use and biodiversity conservation? (8 marks)
b. Of the two concepts mentioned in part a, which one offers maximum benefits to biodiversity conservation and how? (6 marks)
c. What are the benefits and challenges of land sparing and land sharing? (6 marks)

**Question 4:**

Discuss the steps and processes involved in the land use planning process (20 marks

**Question 5:**

With relevant examples, briefly explain the following terminologies as applied to land use planning (4 marks each)
a. Environmental sustainability
b. Land resources
c. Land characteristics
d. Land use requirements
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e. Land improvements

**Question 6:**

Discuss the challenges (hindrances) of land use planning both nationally & internationally. (20 marks)

**Question 7:**

The aim of land use planning is to allocate space for various land uses in order to balance the needs of the communities with the sustainable use of resources. Why is land use planning necessary? (20 marks)

**Question 8:**

Actual land qualities can be improved to increase the suitability of a given piece of land to match the particular requirements of certain land use. What are the common examples of land improvement? (1marks)

**Question 9:**

Land use has both positive and negative implications on ecosystems. Discuss (20 marks)

**Question 10:**

A rapidly growing city is expanding into a nearby forested area. Large sections of trees are being cleared to make way for housing developments, roads, and commercial centers. What are the potential ecological consequences of this urban expansion on local wildlife, water quality, and air quality? How can land use planning mitigate these impacts? (20 marks)

**Question 11:**

a. Why is environmental sustainability important? (4 marks)
b. Discuss the role of land use planning in environmental sustainability (16 marks)

**Question 12:**

Discuss the various methods used in land use planning. Mention the strength/advantages of each technique. (20 marks)