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: 2025-04-23

TIME: 9:00AM-12:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

Section A Answer all questions in this section (40 marks)

Question 1:

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:

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 2:

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

Question 3:

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 4:

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

Question 5:

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 6:

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)