



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV. - DEC. 2018

COURSE NO: ES 473

COURSE NAME: ENVIRONMENTAL DESIGN

CLASS: ES IV

TIME: 3 HOURS

Name: _____ Index Number: _____

Read the instructions carefully. Answer Question ONE and any other TWO questions

Question One [Total of 40 Marks]

- a. Differentiate between the following based on their definitions;
- Land use and zoning
 - Bay and estuary
 - Strip mine and borrow pit
 - Ecology “in” cities and ecology “of” cities
 - Deciduous and evergreen forest
- [10 Marks]
- b. What are the three main ingredients needed for crime to take place? [3 Marks]
- c. Give three importance of land use [3 Marks]
- d. What are reservoirs? Give three ways reservoirs can be put to good by humans [4 Marks]
- e. Mixed urban or built up land use may be regarded both as a blessing and a curse. Give three reasons both for and against this type of land use [6 Marks]
- f. Explain the following built up land uses;
- Residential
 - Industrial
- [4 Marks]
- g. The government has identified several derelict sites within the country and has decided to convert them into useful spaces for the communities in which they are found. You have been employed as an engineer to oversee the project. Select a derelict site in Ghana and outline how you are going to work with the community to convert it into a useful site. [10 Marks]

Question Two [Total of 30 Marks]

- a. The Ghana National land policy was approved for implementation in 1999. What necessitated its introduction [3 Marks]
- b. There are several issues affecting land use in Ghana. Outline any two major issues and give two causes and two effects each. [8 Marks]

- c. Briefly explain the following Ghanaian land use policy guidelines;
 - i. Ensuring sustainable land use
 - ii. Security of tenure and protection of land rights **[8 Marks]**
- d. Give five reasons why people commit crime. **[5 Marks]**
- e. Name and define the three types of land ownership in Ghana **[6 Marks]**

Question Three [Total of 30 Marks]

- a. Define the following;
 - i. Urban ecology
 - ii. Megacity
 - iii. Rurban area
 - iv. Suburban area
 - v. Informal settlement **[5 Marks]**
- b. Compare domestic gardens in developing areas with those in developed areas **[3 Marks]**
- c. It is expected that by the year 2040, global population will increase by two billion with nearly all of that number in urban areas of developing countries. Explain how this is likely to take place **[2 Marks]**
- d. How do the following social threats affect urban biodiversity;
 - i. Poverty and fragmentation
 - ii. Inequalities and irregularities in urban services **[8 Marks]**
- e. Give four negative effects each of the following environmental threats to urban biodiversity;
 - i. Threats from wastewater and sewerage
 - ii. Urban waste management and environmental degradation **[8 Marks]**
- f. Give four situational crime prevention methods that can be employed to fight criminality. **[4 Marks]**

Question Four [Total of 30 Marks]

- a. Explain the term “carbon neutral” as applied to biomass **[3 Marks]**
- b. Give two advantages and two disadvantages each of the following energy sources;
- i. Solar energy
 - ii. Natural gas **[8 Marks]**
- c. Briefly discuss strategies that may be put in place to reduce carbon dioxide emission during energy production **[4 Marks]**
- d. Before the onset of the energy “uncertainties”, what were the main targets of traditional buildings? **[2 Marks]**
- e. What is an energy audit? Discuss the stages of the energy audit process; **[10 Marks]**
- f. Distinguish the between how energy is used in domestic and non-domestic buildings **[3 Marks]**

Examiner: J. MacCarthy
Second Examiner: S. Ndur