



W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2018/2019**

**THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN LAND  
RESOURCE PLANNING AND MANAGEMENT**

**ALP 2407: LAND USE MODELLING I**

**DATE: DECEMBER, 2018**

**TIME: 2 HOURS**

**INSTRUCTIONS: -ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER  
TWO QUESTIONS  
-ILLUSTRATE YOUR ANSWERS AS NECESSARY**

**SECTION A: Answer ALL Questions (30 Marks)**

1. Write short notes on the following

- a) Concepts of the systems' theory (10 marks)
- b) Properties of a system (10 marks)
- c) Classification of systems (10 marks)

**SECTION B: Answer ANY TWO Questions (40 Marks)**

2. System analysis tackles the system in its totality, studying its structure, the internal links between components, as well as its links with the system's environment. Outline

- a. The methodology of systems analysis. (10 marks)
- b. Characteristics of good systems analysis (10 marks)

3. Discuss the four stages of creating a model (20 marks)

4. A model consists of a set of objects, described in terms of variables and relations. Discuss

- a. The different types of models citing examples (10 marks)
- b. Five application of systems models (10 marks)