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**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR  
UNIVERSITY EXAMINATIONS  
FIRST YEAR SECOND SEMESTER EXAMINATIONS  
FOR THE DEGREE**

**OF**

**BACHELOR OF SCIENCE IN DISASTER MITIGATION AND  
SUSTAINABLE DEVELOPMENT**

**COURSE CODE: DSM 107**

**COURSE TITLE: ENVIRONMENTAL BIOLOGY**

**DATE: 27/04/2022**

**TIME: 3 - 5PM**

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**INSTRUCTIONS TO CANDIDATES**

Answer question **ONE (1)** and any other **TWO** questions

**TIME: 2 Hours**

MMUST observes **ZERO** tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

### **Question ONE**

- (a) Define the term biodiversity. (2 Marks)
- (b) Explain the levels of biodiversity. (12 Marks)
- (c) Using suitable examples, distinguish between in-situ conservation of biodiversity and ex-situ conservation. (8 Marks)
- (d) Give two industrial applications of Phosphorus in element and compound forms. What are the effects of the applications on Phosphorus nutrient circulation in the environment? (4 marks)
- (e) Explain the reasons for the shape of the curve in the (i) Lag phase (ii) Stable equilibrium phase of the S-Shaped curve. (4 Marks)

### **Question TWO**

- (a) Distinguish between Food Chain and Food Web. (8 Marks)
- (b) Discuss how developing countries can increase their peoples' quality of life without overusing the resource capacities of the planet. (12 Marks)

### **Question THREE**

Three top countries in municipal waste recycling are Germany, Belgium and the Netherlands. Discuss the guidelines that are applied in the countries to promote recycling. (20 Marks)

### **Question FOUR**

- (a)(i) Explain the concept of "ecological succession". (5 Marks)
- (ii) Discuss the ecological succession of the peri-urban environment of Turbo Forest in Western Kenya. (10 Marks)
- (b) Explain the challenges in exploitation of potential alternative energy sources in urban environment in Kenya. (5 Marks)