(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE

OF

BACHELOR OF SCIENCE IN DISASTER MITIGATION AND SUSTAINABLE DEVELOPMENT (DMSD)

COURSE CODE: DSM 105

COURSE TITLE: BIODIVERSITY AND ECOLOGY

DATE: 29/4/2022   **TIME:** 3 – 5PM

QUESTION ONE

a) Explain the following terms in ecological context:
   i)   Biodiversity   **[1 Marks]**
   ii)   Ecosystem Biodiversity **[1 Marks]**
   iii)   Species Evenness   **[2 Marks]**
   iv)   Biodiversity hotspot   **[2 Marks]**
   v)   Low biodiversity   **[2 Marks]**
   vi)   Population   **[2 marks]**

b) Describe the key characteristics of an ecologically stable community. **[5 Marks]**

c) Examine the main causes of Biodiversity loss in Kakamega forest in Western Kenya.
   [6 Marks]

d) List the important ecosystem services provided by Kakamega natural forest

e) Discuss the pros and cons of levying a charge on the services provided by the ecosystem.
   [9 Marks]

QUESTION TWO

i). Ecologists state that the species diversity of plants (22 per cent) is much less

than that of animals (72 per cent). Account for the reasons as to why animals achieved

greater diversification? **[6 Marks]**

ii). Explain why plants are called primary producers. **[4 marks]**

iii). During the County Agricultural Field day for the year 2022, held at Kenya Agricultural and

Livestock Research Organization's Regional Centre in Kakamega, the Centre Director

explained that they have launched campaigns to eradicate two plant species from Malaba

forest in Western Kenya. Discuss the possible reasons to justify this move. **[5 Marks]**

iv). Discuss the characteristics of Biodiversity hotspot areas in Kenya. **[5 Marks]**

QUESTION THREE

i). Explain how habitat fragmentation is contributing to species extinction in Western Kenya?
     [6 Marks]

ii). Explain the term ecosystem structure. **[6 Marks]**

iv). Explain the disadvantages of high biodiversity in an ecosystem. **[4 Marks]**

v). Discuss some of the problems encountered while valuing biodiversity. **[4 Marks]**

QUESTION FOUR

i). Explain the term "REDD". **[2 Marks]**

ii). Examine the difference between REDD+ and REDD+ readiness. **[4 Marks]**

iii). Examine how much carbon is emitted by deforestation and forest degradation to the atmosphere. **[2 Marks]**

iv). Discuss the strategies that can be used to identify and deal with the drivers of deforestation in Africa. **[6 Marks]**

v). Examine the role of forests in the developing world. **[6 Marks]**