MAASAI MARA UNIVERSITY

SCHOOL OF NATURAL RESOURCE MANAGEMENT AND ANIMAL SCIENCES
DEPARTMENT OF ENVIRONMENTAL STUDIES, GEOGRAPHY AND AGRICULTURE

UNIVERSITY EXAMINATIONS 2019/2020

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF ENVIRONMENTAL STUDIES (BIOLOGY AND HEALTH)

COURSE CODE: EBH 3119
COURSE TITLE:TERRESTRIAL TROPICAL COMMUNITIES AND THEIR CONSERVATION

DATE: 5 TH APRIL,2022 **TIME: 0830-1030HRS**

INSTRUCTIONS TO CANDIDATES

(a) Answer ALL the Questions in Section A
(b) Answer ANY THREE Questions in Section B

SECTION A (25 MARKS)

Attempt ALL questions in this section.

1i. Explain the meaning of the term biodiversity **(1 Mark).**
ii. State 4 levels of biodiversity **(4 Marks).**

2. Account for the high amounts of precipitation and the bimodal distribution of rains along the equator **(5 Marks).**

3. State 5 causes of biodiversity loss in Masa Mara Game Reserve (MMGR) **(5 Marks)**
4. Distinguish between 5 main types of savanna vegetation found in East Africa **(5 Marks)**.

5. Explain the meaning of the following terms;

   i. Equinox **(1 Mark)**
   ii. ITCZ **(1 Mark)**
   iii. Tropical lowland forest **(1 Mark)**
   iv. K selection **(1 Mark)**
   v. Coriolis Force **(1 Mark)**

SECTION B (45 MARKS)

Attempt ANY THREE questions.

6. Discuss the Theory of Island Biogeography and its application in tropical biodiversity conservation (**15 Marks**).

7. i. Explain what you understand by the term Human – Wildlife Conflicts **(3Marks).**
   ii. Discuss factors contributing to increase Human – Wildlife Conflicts **(7 Marks).**
   iii. Discuss how application of a new conservation paradigm can be a way of addressing the Human – Wildlife Conflicts. **(5 Marks).**
8. Discuss the ecological benefits of fire **(15 Marks).**

9. Discuss the principle of niche differentiation and resource partitioning and its ecological benefits and consequences in the tropical savannas and rain forests. **(15 Marks) END//**

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UNIVERSITY EXAMINATIONS 2021/2022

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF ENVIRONMENTAL STUDIES (BIOLOGY AND HEALTH)

COURSE CODE: EBH 3116
COURSE TITLE: ENVIRONMENTAL STRESS ON FLORA AND FAUNA

DATE: 5 TH APRIL, 2022 **TIME: 0830-1030HRS**

INSTRUCTIONS TO CANDIDATES

(c)Answer ALL the Questions in Section A
(d) Answer ANY THREE Questions in Section B

SECTION A (25 MARKS)

1. State 5 physical environmental stresses fish in a pond are subjected to (**5 Marks**).

2. Explain and illustrate Shelford'd Law of Tolerance **(5 Marks).**

3. Explain why removal of trees in ASAL areas may contribute to increased soil salinity and why poor irrigation practices have similar effects **(5 Marks)**
4. i. Name the three 3-PGA precursor compounds formed in C4 plants **(3 Marks)**.

   ii. Name 2 groups of plants that have evolved the C4 photosynthetic pathway **(2 Marks).**
5. Explain the differences between the following terms;

   i. Euryhaline and Stenohaline species **(1 Mark)**
   ii. Biomagnification and Bioaccumulation **(1 Mark)**
   iii. Poikilohydric and Homoihydric plants **(1 Mark)**
   iv. Nocturnal and Fossorial animals **(1 Mark)**
   v. Adaptation and Mitigation **(1 Mark)**

SECTION B (45 MARKS) Attempt ANY THREE questions.

6. Citing specific examples, identify types, sources and impacts of inorganic chemical substances on the natural environment (**15 Marks**).
7. i. Explain what you understand by the term climate change **(3 Marks).**
   ii. Discuss the envisaged environmental impacts of climate change in the tropics and why the impacts are expected to be more severe in the tropics **(8 Marks).**
   iv. Explain how the severity of impacts identified in ii can be reduced **(4 Marks).**
8. Discuss the adaptations animals have evolved to live in water, heat and salt stressed environments **(15 Marks).**
9. **i.** Discuss the life history attributes of r and K selection **(9 Marks)**
   ii. Explain the environmental stresses contributing to evolution of the 2 life history extremes **(6 Marks).**

END//

&&&&&&&&&&&&& END OF EXAM QUESTIONS &&&&&&&&&&

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UNIVERSITY EXAMINATIONS 2019/2020

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF ENVIRONMENTAL STUDIES (BIOLOGY AND HEALTH)

EBH 3121 MOLECULAR GENETICS

DATE: …… TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

(e) Answer ALL the Questions in Section A
(f) Answer ANY THREE Questions in Section B

SECTION A (25 MARKS)

Attempt ALL questions in this section.

1 i. Explain the meaning of the term recombinant DNA Technology **(2 Mark).**

ii. Briefly explain the applications of Recombinant DNA Technology in agriculture, medicine and biodiversity conservation **(3 Marks).**

2. Explain the differences between:

i. B-Form and Z-form DNA (**2 Marks**)

ii. Nuclear and Mitochondrial DNA (**3 Marks**)

3. State 5 molecular methods that can be used to determine genetic diversity in natural populations **(5 Marks).**

4. **i.** Explain the meaning and significance of RNA processing during translation **(2 marks)**.
   ii. State the three types of RNA and their functions (**3 Marks**).

5. Briefly describe the process of DNA translation in eukaryotes **(5 Marks).**

SECTION B (45 MARKS)

Attempt ANY THREE questions.

6. Discuss the attributes that make the mitochondrial DNA an ideal molecular marker to study population genetics (**15 marks**).

7. Discuss the process of DNA replication and transcription during protein synthesis (**15 marks**).

8. i. With the aid of diagrams, describe the main phases of a PCR reaction (**12 marks**).

   ii. Explain the benefits of the PCR to molecular genetics **(3 Marks).**

9. Discuss the three main models that have been proposed to explain DNA replication **(15 Marks).**

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