

THE OPEN UNIVERSITY OF SRI LANKA
B. Sc. DEGREE PROGRAMME - LEVEL 4
FINAL EXAMINATION- 2017/2018
COURSE TITLE: ECOLOGY
COURSE CODE - ZYU4301
DURATION - 2 HOURS

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15 SEP 2018



THE OPEN UNIVERSITY OF SRI LANKA
KANDY REGIONAL CENTRE
EXAMINATION

INDEX NUMBER

DATE: 15. 09. 2018

TIME: 1.30PM-3.30 PM

QUESTION PAPER CONSISTS OF TWO PARTS, PART "A" AND PART "B".

ANSWER QUESTION 1 FROM PART "A" AND ANY THREE QUESTIONS FROM PART "B".

PLEASE NOTE THAT QUESTION 1 IS COMPULSORY AND THE ANSWERS SHOULD BE WRITTEN IN THE SPACE PROVIDED.

PART "A"

QUESTION 1

1.1

a) Define the term habitat.

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.....

b) Giving a suitable example briefly explain the macro and microhabitats.

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.....
.....

c) What is meant by the "niche of a species"?

.....
.....

d) The main niche of a species is determined by several different (sub) categories of niches. Describe these important sub niches for a particular species.

- 1.....
- 2.....
- 3.....
- 4.....

e) Giving a suitable diagram explain the difference between fundamental niche and realized niche.

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f) Explain the three types of niche overlap.

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.....
.....

g) Define the Hutchinson's concept of niche.

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.....

1.2

a) Environmental factors affect the distribution of living organisms within the biosphere.

Name three physical and three chemical factors involved in this distribution.

Physical factors:.....

Chemical factors:.....

b) Explain the Shelford's law of tolerance.

.....
.....
.....
.....

c) Fill in the blanks given below with most appropriate word/s

eurythermic, euryhaline, stenohaline, stenothermic, "steno", "eury"

Tolerance curves can be either broad or narrow. Organisms that possess very narrow peaked tolerance curves are described with the prefixwhere as those who show wide range tolerance curves are described with the prefix Narrow peaked tolerance curves for temperature is referred asand for salinity it is referred as..... Further broad tolerance curves for temperature is referred asand for salinity it is referred as.....

PART "B"**ANSWER ANY THREE (03) QUESTIONS**

2. i) There is an important nutrient cycle which led to the formation of fossil fuels. Name this nutrient cycle and explain the main reservoirs and processes of the cycle. (60 marks)
- ii) Discuss the human influences on the natural cycling of this nutrient and how to minimize such effects in future. (40 marks)
3. i) What is meant by population interactions? (20 marks)
- ii) List the inter specific interactions and identify the effect (influences) on each interacting population. (20 marks)
- iii) Group the above inter specific interactions under three main categories. (14 marks)
- iv) State the four possible outcomes of competition and explain the Lotka and Volterra proposed model for competition using graphical representation and relevant equations. (46 marks)
4. i) You have been asked to do an ecological survey of a terrestrial ecosystem. Explain the main steps of your survey process. (20 marks)
- ii) Considering your own hypothetical data write a complete report for the above ecosystem. (80 marks)
5. i) State the major plant communities found in different climatic zones of Sri Lanka. (15 marks)
- ii) List the prominent ecological characteristics of Sinharaja forest. (20 marks)
- iii) Distinguish between the lowland wet evergreen forests and wet montane forests. (30 marks)
- iv) Forest gaps are formed by natural falling of forest trees. Explain the ecological significance of forest gaps. (35 marks)
6. Write notes on any two of the following.
- a) Logistic growth curve b) Ecotonal community c) Theory of island biogeography

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