

UNIVERSITY OF RUHUNA
BACHELOR OF SCIENCE GENERAL DEGREE LEVEL II (SEMESTER II)
EXAMINATION – June/2022

Subject : Zoology

Time: 01½ hours

Course Unit: ZOO 2212: Animal Ecology

Answer **any three** questions only.

Illegible handwriting would be penalized.

1. Answer all parts.

- (i) State the differences between “r” and “k” selected organisms with respect to habitat, life span, survivorship and reproduction.
- (ii) A population of a particular insect species was investigated over 10 generations. The log values of egg, larval, pupal and adult densities relating to each generation are given in the Table 1.
- (a) Calculate the egg (k_1), larval (k_2) and pupal (k_3) mortalities for each generation.
- (b) Identify the “Key factor” for this insect population condition by giving reasons.

Table 1. Log egg, larval, pupal and adult density with respect to 10 generations.

Generation	Log eggs	Log larva	Log pupa	Log adults
1	3.037	3.000	2.966	2.875
2	3.041	3.000	2.972	2.884
3	3.000	2.954	2.943	2.877
4	3.000	2.994	2.952	2.884
5	3.079	3.041	2.995	2.940
6	3.129	3.079	2.988	2.831
7	3.195	3.146	3.058	2.910
8	3.161	3.111	3.053	2.952
9	3.139	3.041	2.993	2.931
10	3.195	3.033	2.994	2.904

2. What is meant by 'species diversity' of a community? Briefly discuss the factors affecting the diversity of a community.
3. Briefly describe the zonation of a lentic ecosystem and adaptations shown by organisms living in different zones of this ecosystem.
4. Write short notes on **any three** of the following.
 - (i). Equilibrium theory of island biogeography.
 - (ii). Transitional zones in a community.
 - (iii). Ecological pyramids.
 - (iii). Factors influencing light penetration in aquatic ecosystems.

~~✍~~ Marks for continuous assessments

(20 marks)

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