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| FACULTY | Agriculture, Engineering and Natural Sciences | | |
| DEPARTMENT | Environmental Science | | |
| SUBJECT | Ecophysiology | | |
| SUBJECT CODE | EBL 3752 | | |
| DATE | November 2021 | | |
| DURATION | 3 Hours | MARKS | 120 |

SUPPLEMENTARY/SPECIAL EXAMINATION

Examiners: Dr. E. G. Kwembeya & Dr. S. J. Eiseb (University of Namibia)

Moderator: Dr. L. Hart (University of Namibia)

This examination paper consists of 2 pages (including the front page)

Instructions

- Answer ALL questions from Section A.
- Answer ANY TWO questions from Section B.
- Label all your answers appropriately and neatly.
- The use of scientific calculators in this examination is allowed.

UNIVERSITY OF NAMIBIA EXAMINATIONS

Section A: Answer ALL questions from this section (60 Marks)

Question 1

- (a) Elaborate on the differences between C3 and C4 Plants. (10)
(b) Briefly discuss the significance of photorespiration in plant physiology. (4)

Question 2

- (a) Discuss transpiration as a two-step process. (2)
(b) Discuss the significance of transpiration in plants. (4)

Question 3

Explain why secondary metabolites are not so essential for normal plant growth and development, yet plants cannot do without them. (4)

Question 4

Briefly describe different plant defences against pathogens. (6)

Question 5

Provide the names of the three (3) major categories of biomes that might be considered representative of “normal” or non-extreme terrestrial life, supporting animals with “generalist” terrestrial adaptations. (3)

Question 6

Explain why do tuna fish maintain elevated red muscle temperatures. (15)

Question 7

Describe with examples the four (4) different “groups” of animals that practice evading strategies in extreme terrestrial habitats. (12)

Section B: Essays Section

Answer ANY TWO questions from this section (60 Marks)

Question 1

Discuss different factors that affect the rate of transpiration. (30)

Question 2

Discuss the different adaptive strategies found in different animal phyla, with reference to the different body designs and different habitats. (30)

Question 3

Compare and contrast the water and salt (NaCl) balance processes between truly terrestrial animals, freshwater fish and marine fish (30)