UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020

COURSE NAME	:	ANIMAL AND INSECT COMMUNITY ECOLOGY
COURSE CODE	:	BWJ20402
PROGRAMME CODE	:	BWW
EXAMINATION DATE	:	DECEMBER 2019 / JAUNUARY 2020
DURATION	:	2 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

Q1 (a) Define ecology, population and community.

(6 marks)

(b) Explain **TWO (2)** main components in distinguishing communities.

(4 marks)

(c) Demonstrate **FIVE (5)** ecosystem services provided by animals.

(5 marks)

(d) Classify **THREE (3)** types of interactions between animals and demonstrate the implications of the interactions by using symbol +, - and 0.

(6 marks)

(e) Differentiate competitive exclusions from character displacement as a results of competition between species.

(4 marks)

Q2 (a) Explain **FOUR (4)** ecological roles of insects in the ecosystem

(4 marks)

(b) Insects are ecologically prominent due to a number of reasons as stated below:

(i) Unique body plan
(ii) Rich relationship
(iii) Adaptive radiation

Demonstrate each characteristics with appropriate examples.

(6 marks)

(c) Plants put up various defenses to avoid predatory animals. Differentiate between chemical and phenological defenses in plants by giving **ONE (1)** example each.

(4 marks)

(d) Define mutualism and outline the ecological importance of mutualism.

(5 marks)

(e) Demonstrate **THREE (3)** scenarios in which plants act as a home or nest for animals. Give appropriate example for each scenario.

(6 marks)

Q3 (a) Explain population dynamics and list **FIVE (5)** basic components of population dynamics

(7 marks)

(b) Demonstrate how density of a population changes over time.

(4 marks)

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(c) By using illustration, differentiate **TWO (2)** models of population growth.

(8 marks)

(d) Outline **THREE (3)** implications when there are two or more species present in interspecific competition.

(6 marks)

Q4 (a) (i) Define alien invasive species and give **ONE (1)** example together with its Latin name.

(6 marks)

(ii) Based on your answer in **Q2(a)(i)**, explain the probable negative impact of the species on native biodiversity.

(4 marks)

(b) Taking *Aphis craccivora* on seedlings of long beans *Vigna sinensis*, analyze the population dynamics that will happen within at least three generations. Bear in mind aspects such as plasticity of this insect group as well as extrinsic and intrinsic factors impacting the aphid population dynamics.

(15 marks)

- END OF QUESTIONS -