Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020

COURSE NAME	:	PLANT COMMUNITY ECOLOGY
COURSE CODE	:	BWJ 20302
PROGRAMME CODE	:	BWW
EXAMINATION DATE	:	DECEMBER 2019 / JANUARY 2020
DURATION	:	2 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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

Q1 (a) Plants are the base of the food chain, which have a strong effect on animals as well as the ecosystem in general. Illustrate how food web works.

(5 marks)

(b) List down **FIVE (5)** countries with vegetation belonging to Paleotropical kingdom.

(5 marks)

(c) Plant-pollinator interactions are crucial in maintaining the productivity of more 80% of extant flowering plants worldwide. More so, the diversification of flowering plants can be attributed to the diversification of the animal kingdom that occurred between 90 – 130 million years ago.

(i) Analyze the obligate mutualistic relationship between plant and animals that results to the diversity of plants and animals today. Give **ONE (1)** example of an obligate mutualistic relationship.

(5 marks)

(ii) Analyze the facultative mutualistic relationship between plant and animals that we see today. Give **ONE (1)** example of a facultative mutualistic relationship.

(5 marks)

(iii) Analyze how an alien pollinator can disrupt the productivity of plant community.

(5 marks)

Q2 (a) Seeds undergo the dormancy stage in order to prevent germination under unsuitable condition. Explain the **THREE (3)** conditions that are unsuitable for germination of seeds.

(6 marks)

(b) Compare the properties of seeds of dipterocarp species (Dipterocarpaceae) with temperate pine species (Pinaceae)

(10 marks)

(c) Plants, being immobile organisms, have developed an advanced defense mechanism against hostile environment. Discuss how plants protect itself from the following.

(i) Extreme sunlight

(3 marks)

(ii) Herbivore

(6 marks)

Q3 (a) Analyze how population can be affected by the following.

(i) Stochasticity

(5 marks)

(ii) Emigration

(5 marks)

(b) Demonstrate how population dynamics are affected by the following:

(i) The concept of limiting factors

(5 marks)

(ii) The concept of limits of tolerance

(5 marks)

(c) A keystone species can influence the structure of the community disproportionately to their numbers. Justify this statement and give **ONE** (1) example of a keystone species.

(5 marks)

Q4 (a) Arrange the following responses of pants according to its initial response to stress until the point of adaptation or failure to do so. Explain your answer briefly.

(i) Death
(ii) Survival
(iii) Resistance
(iv) Senescence
(v) Acclimation

(10 marks)

(b) Demonstrate how water stress can be detrimental to the plant.

(5 marks)

(c) Two of the important functions of ecosystems are as vegetation sink and as watershed.

(i) Analyze the specific roles of vegetation to the carbon cycle.

(5 marks)

(ii) Suggest an effective approach that will ensure catchment areas are sustained, not only for providing the quantity, but of good quality of water people need for survival.

(5 marks)

- END OF QUESTIONS -