

SECTION A

QUESTION 1 (COMPULSORY)

(a) "Whereas the continents and oceans of the world are few in number... islands exist in teeming multitudes lending themselves to biogeographical study" (Pielou, 1979: 173).

Discuss.

(25 Marks)

(b) 'Organisms in an ecosystem are often referred to as dynamic and capable of adjusting to any external environmental change'. Discuss.

(15 Marks)

(40 Marks)

SECTION B

Answer any two (2) questions from this section

QUESTION 2

(a) Discuss the physical and biological factors affecting the characteristics and development of an ecosystem.

(20 Marks)

(b) Discuss the types of fire as an ecosystem management tool in the study of Biogeography.

(10 Marks)

(30 Marks)

QUESTION 3

(a) 'All forms of energy are interconvertible in an ecosystem which tend to obey the First Law of Thermodynamics'. Discuss. (15 Marks)

(b) Define the following concepts or phrases:

- (i) Competition (3 Marks)
- (ii) Compensating point (CP) (3 Marks)
- (iii) Photosynthetic efficiency (3 Marks)
- (iv) Biomass (3 Marks)
- (v) Predation (3 Marks)

(30 Marks)

QUESTION 4

(a) Elucidate the mechanisms whereby pioneer species quickly demonstrate high rates of nutrient losses following the removal of vegetative cover from an ecosystem. (15 Marks)

(b) Describe how autotrophic and heterotrophic organisms produce energy and matter for their sustainability. (15 Marks)

(30 Marks)

QUESTION 5

(a) Compare and contrast phosphorus and carbon cycles and the processes involved in the movement of energy and nutrients in an ecosystem.

(30 Marks)