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3 (Sem-4/CBCS) BOT HC 2

2024

**BOTANY**

(Honours Core)

Paper : BOT-HC-4026

**(Plant Ecology and Phytogeography)**

Full Marks : 60

Time : Three hours

***The figures in the margin indicate full marks for the questions.***

1. Choose the correct answer of the following :  
1×7=7

- (a) Synecology deals with the study of
- (i) the interaction between species in a population
  - (ii) the interactions between individuals of a species
  - (iii) the interactions between species in communities
  - (iv) experimental and inductive nature of population

Contd.

(b) Which of the following is not an example of homeostasis ?

- (i) Osmotic adjustment in plants
- (ii) Presence of chlorophyll in green plants
- (iii) Regulation of temperature by organisms
- (iv) Glucose level in the blood plasma of animals

(c) Precipitation results from the heating of the earth's surface is known as

- (i) cyclonic precipitation
- (ii) convectional precipitation
- (iii) frontal precipitation
- (iv) stratiform precipitation

(d) The range of environmental conditions which a taxon can tolerate is called

- (i) edge effect
- (ii) ecological niche
- (iii) adaptive zone
- (iv) ecological amplitude

(e) It is the scientific study of seasonal changes, i.e., the periodic phenomenon of organisms in relation to climate is termed as

- (i) physiogamy
- (ii) abundance
- (iii) phenology
- (iv) vitality

(f) The wet woodland with accumulation of humus in the soil associated with micro-organisms is known as

- (i) climax forest
- (ii) shrub stage
- (iii) tree stage
- (iv) carr

(g) The phenomenon distribution of species associated with some geographical and ecological factors is called

- (i) endemism
- (ii) endangered species
- (iii) relic-endemism
- (iv) progressive endemism

2. Write short notes on the following :  $2 \times 4 = 8$

- (a) Ecosystem ecology
- (b) Nudation
- (c) Coral reefs
- (d) Parasitism

3. Write briefly on **any three** of the following :  $5 \times 3 = 15$

- (a) Adaptation of plants to variation of temperature
- (b) Ecotone and its importance
- (c) Factors of ecological succession
- (d) Shelford's law of tolerance
- (e) Theories of endemism

4. Answer **any three** of the following :

10×3=30

(a) Differentiate between edaphology and pedology. Describe the origin and formation of soil. 2+8=10

(b) What do you mean by ecological speciation? Discuss briefly the types of speciation based on geography. Give suitable examples of ecological speciation. 2+6+2=10

(c) Define an ecological niche. Mention important characteristic features of an ecological niche. How does fundamental niche differ from realized niche? 2+6+2=10

(d) Describe biochemical cycle with special reference to cycling of carbon. What are the major reservoirs of carbon? 7+3=10

(e) How does food chain differ from food web? Write briefly the detrital food web. Write the significance of food web. 2+4+4=10

(f) Who is the father of phytogeography? Mention the phytogeographical divisions of India. Discuss briefly the vegetation of North-East India. 1+3+6=10