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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 :

$$10 \times 3 = 30$$

(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. $1+3+6=10$