

Total number of printed pages-4

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 ?
- Osmotic adjustment in plants
 - Presence of chlorophyll in green plants
 - Regulation of temperature by organisms
 - Glucose level in the blood plasma of animals
- (c) Precipitation results from the heating of the earth's surface is known as
- cyclonic precipitation
 - convictional precipitation
 - frontal precipitation
 - stratiform precipitation
- (d) The range of environmental conditions which a taxon can tolerate is called
- edge effect
 - ecological niche
 - adaptive zone
 - 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
- physiogamy
 - abundance
 - phenology
 - vitality

- (f) The wet woodland with accumulation of humus in the soil associated with micro-organisms is known as
- climax forest
 - shrub stage
 - tree stage
 - carr
- (g) The phenomenon distribution of species associated with some geographical and ecological factors is called
- endemism
 - endangered species
 - relic-endemism
 - progressive endemism

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

- Ecosystem ecology
- Nudation
- Coral reefs
- Parasitism

3. Write briefly on **any three** of the following :

$5 \times 3 = 15$

- Adaptation of plants to variation of temperature
- Ecotone and its importance
- Factors of ecological succession
- Shelford's law of tolerance
- 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