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3 (Sem-4/CBCS) BOT HC 2

2025

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 from the following : 1×7=7

(a) 'Aerenchyma' tissue found in

- (i) Xerophytes
- (ii) Hydrophytes
- (iii) Mesophytes
- (iv) Sciophytes



(b) The plants that suffer from dryness both in internal as well as external environment is called

- (i) Succulents
- (ii) Non-Succulent perennials
- (iii) Ephemeral annuals
- (iv) Halophytes

(c) Ecological races arising as a result of genotypical response of an ecospecies to a particular habitat is called

- (i) Ecospecies
- (ii) Ecological Amplitude
- (iii) Ecads
- (iv) Ecotypes

(d) Which ecological pyramid is always upright?

- (i) Pyramids of Numbers
- (ii) Pyramids of Biomass
- (iii) Pyramids of Energy
- (iv) Different in shape pyramids

(e) Perennating buds are naked or covered with scale and situated high up on plants are called

- (i) Hemicryptophytes
- (ii) **Phanerophytes**
- (iii) Therophytes
- (iv) **Chamaephytes**

(f) A semi-enclosed coastal body of water which has a free connection to the open sea and inhabits ~~Mangrove~~ forests is called a/an

- (i) High Sea
- (ii) Coastal area
- (iii) Lagoons
- (iv) Estuary

(g) Ionic aluminium and iron liberated during alumino-silicate breakdown is called

- (i) Laterization
- (ii) Gleization
- (iii) Podsolization
- (iv) Calcification

2. Write short notes on the following :

2×4=8

- (a) Polyclimax theory
- (b) Sedge-meadow stage in succession
- (c) Importance Value Index (IVI)
- (d) Species diversity

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

5×3=15

- (a) Grazing food chain
- (b) Ecological niche of a dominant species

- (c) Secondary succession and its types
- (d) Endemism and its causes
- (e) Analytical characters of plant communities

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

10×3=30

- (a) Describe the nitrogen cycle in nature. Mention the impact of human activity on nitrogen cycle. 7+3=10
- (b) What is pedogenesis ? Describe the process of soil formation and explain soil profile. 2+4+4=10
- (c) What is ecotone ? Describe the edge effect with example and mention its types. 2+4+4=10
- (d) What is the structure of an ecosystem ? Describe how an ecosystem functions. 5+5=10
- (e) Give an ecological description of Assam, highlighting environment and the organisms therein. 5+5=10
- (f) What is phytogeography ? Mention the phytogeographical regions of modern India with floristic examples. 2+8=10

