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**63(FY) SEM-4/MAJ/BOTMAJ2034**

**2025**

**BOTANY**

(Major)

Paper : BOTMAJ2034

**(Plant Ecology and Phytogeography)**

Full Marks : 50

Pass Marks : 20

Time : Two hours

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

1. Choose the correct answer : 1×5=5

(a) Which of the following is related to soil characteristics ecological groups of plants ?

(i) Oxylophytes

(ii) Epiphytes

(iii) Hydrophytes

(iv) Endophytes

(b) Pedogenesis stages of soil formation is largely involved by

- (i) Chemical phenomenon
- (ii) Physical phenomenon
- (iii) Biological phenomenon
- (iv) Oxidation–reduction phenomenon

(c) Members of autotrophic components are known as

- (i) Producer
- (ii) Macroconsumers
- (iii) Decomposer
- (iv) Carnivores

(d) Which form of soil water is absorb by plants ?

- (i) Hygroscopic water
- (ii) Capillary water
- (iii) Gravitational water
- (iv) Water vapour

(e) Foliage leaves wherever present may become thick, fleshy and succulent or tough and leathery texture in

- (i) Hydrophytes
- (ii) Thallophytes
- (iii) Bryophytes
- (iv) Xerophytes

2. Answer the following questions : **(any five)**  
2×5=10

- (a) What is the major functions of an ecosystem ?
- (b) What is climax community ?
- (c) What is the effects of light on biological pigmentation ?
- (d) What is rain ? Write the ranges in inches per hour for light rain and heavy rain.
- (e) What is ecosystem ? Who coined the term 'ecosystem' ?
- (f) Name the *three* biotic components of an ecosystem.
- (g) What is continental drift ?

3. Answer the following questions : **(any five)**  
5×5=25

(a) Give a brief description on tundra biom.

(b) What is endemism? Write a note on endemic species of North-East India.  
1+4=5

(c) What is ecosystem productivity? Explain the primary productivity.  
1+4=5

(d) What is energy flow in ecosystem? Explain Universal Energy flow model of ecosystem.  
1+4=5

(e) Explain the food chain in an ecosystem.

(f) What is ecotone? Write the features and importance of ecotone. 1+4=5

(g) Explain the hydrological or water cycle.

(h) Write notes on types of plants on temperature variation.

4. Answer the following question : **(any one)**  
10×1=10

(a) What are the phytogeographical divisions of India? Describe the phytogeographical divisions of India.  
2+8=10

(b) What is biogeochemical cycle? Write an essay on Nitrogen cycle. 2+8=10