

UNIT -VI: PLANT ECOLOGY

13.ECOLOGICAL ADAPTATIONS, SUCCESSION AND ECOLOGICAL SERVICES

$(1 \times 2) + (1 \times 4) = 6$ Marks

ROOT POINTS

- Plant Ecology** deals with the relationship between plants and their environment.
- Ecological adaptation** is a characteristic (Physiological, behavioural) adjustment of an organism that enables the organism to survive and reproduce in its habitat.
- Ecological succession** is a series of progressive changes in the species by which its climax structure evolves over time.
- Ecological services** include (i) provisioning services like production of food and water (ii) regulating services like regulation of floods, drought, land degradation, diseases (iii) supporting services like soil formation nutrient cycling (iv) cultural services like recreational, spiritual benefits. **Ex:** Healthy forest ecosystem.
- Division of Biotic components:** (i) Producers (Autotrophs) **Ex:** Plants (ii) Consumers (Heterotrophs) **Ex:** Animals (iii) Decomposers **Ex:** Bacteria, Fungi.
- Population** is a group of similar individuals, belonging to same species found in an area. **[IPE]**
- Community** is an assemblage of several populations belonging to different species occurring in an area. **[IPE]**
- Hydrophytes:** Plants that grow in water are called hydrophytes. In hydrophytes, all submerged organs are capable of absorbing water. So, their xylem is reduced. **[IPE]**
- According to mode of living in water hydrophytes are five kinds:** **[IPE]**
 - Free floating hydrophytes:** **Ex:** Pistia, Lemna, Salvinia.
 - Rooted hydrophytes with floating leaves:** **Ex:** Nymphaea and Victoria regia.
 - Submerged suspended hydrophytes:** **Ex:** Hydrilla and Utricularia.
 - Submerged rooted hydrophytes:** **Ex:** Vallisneria.
 - Amphibious plants:** **Ex:** Sagittaria, Typha and Limnophila.

FRUITY Qs OF IPE

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- Climax stage is achieved quickly in secondary succession as compared to primary succession. Why?
- Define population and community.
- Hydrophytes show reduced xylem. Why?
- What are hydrophytes? Briefly discuss the different kinds of hydrophytes with examples.
- Enumerate the morphological adaptations of hydrophytes.
- Write a brief account on classification of xerophytes.
- Enumerate the morphological adaptations of xerophytes.
- Give in detail the anatomical adaptations shown by xerophytes.