

## Chapter 26

### Short questions:

1. What is the composition of air of terrestrial ecosystem? (LB-2012)

These include taiga, tundra, deciduous forest, grasslands, tropical rain forests, and deserts. Taigas are cold-climate forests found in the northern latitudes.

2. What is the effect of human impact on Tundra ecosystem? (LB-2013)

**Human impact on Tundra Ecosystem:** Tundra is the most fragile of all the biomes because of its short growing season. Human activities in Tundra leave scars that persist for centuries. Fortunately the impact of civilization is localized around oil drilling sites, pipelines, mines and military bases.

3. What is the effect of human impact on Desert ecosystem? (LB-2010)

**Ans:**

**Human impact on desert ecosystem:**

As human activities are reducing the extent of many biomes, they are causing the spread of many biomes, a process called as desertification.

4. Where the Desert ecosystem is found in Pakistan. (LB-2018, 2021)

Desert found in Punjab Pakistan is called **Thal** and it is located in **Mianwali** and **Bukhar**

Desert found in Sindh Pakistan is called **Thar**

The desert ecosystem of the southern Punjab is known as Cholistan. It is located in Fort Abbas, Bahwal Nagar, Yazma, Bahwal Pur, Khan Pur and Rahim Yar Khan,

5. What is the range of rainfall and temperature in Temperate Deciduous Forest (OR) Discuss animal life of temperate deciduous forest? (LB-2012, 2021)

The average rainfall is between 750-1500 mm. Some very **common animals** are Macaca mulatto (rhesus monkey), black bear, leopard cat, deer and wolves. Microorganisms are also found such as bacteria, fungi and earthworms.

**Major plants:** The plants exhibit stratification i.e. layering. There are four layers in the forest.

(a) **Three layer:** In the tree layer the trees form a continuous canopy.

The trees are 8 to 30 m tall. Some dominant trees are *Taxus baccanta*, *Pinus wallichinana*, and *Berberis lyceum*.

(b) **Shrub Layer:** The herbs and shrub layers grows to a height of 5m

(c) **Field Layer:** The field layer is made up of grasses, ferns and other herbaceous plants,

(d) **Forest floor:** The forest floor forms the fourth layer. At the bottom of floor level many mosses, liverworts, and lichen covered with litter layer are present.

6. What are the four major requirements for life? (OR) Which two are limiting factors in terrestrial ecosystem?

Four major requirements for life are temperature, absorption of energy, nutrients and abundant water with appropriate temperature. Two limiting factors are temperature and air.

7. What is meant by layering in a grassland ecosystem? (OR) Give the layering characteristics of grassland. (LB-2013)

**Ans:**

**Layering:** It is the characteristics of grass-land ecosystem. Tall grasses e.g. Panicum form first layer. Mid-high grasses e.g. stipa form second layer, and third layer is formed by short grasses, forbs, warfare species mosses and lichens.



8. What is profundal zone? Give its one character. (OR) What type of organisms are present in profundal zone of lake? (LB-2018)

**Ans:**

**Profundal zone:** Here light is insufficient, to support photosynthesis. Decomposers and detritus feeders such as snails certain insect larva, bacteria, fungi and fish inhabit this zone. Dead organic matter falling from limnetic zone and littoral zone serve as food for the organisms.

9. Define productivity of an ecosystem.

**Ans:**

**Productivity:** Can be defined as the rate of production of new biomass during a specific period. Productivity is generally expressed in terms of grams or Kilocalories per square meter. The productivity can be indicated by consumption of CO<sub>2</sub> and evolution of oxygen in the process of photosynthesis.

**Example:** The productivity of temperate grass-land is 700- 1500 g/m<sup>2</sup>/year.

10. Differentiate between climate and weather. (OR) What is climate?

**Ans:**

**Weather:** refers to short term fluctuations in temperature, humidity, cloud cover, wind and precipitation over a period of hours and days.

**Climate:** refers to over all pattern of weather that prevails from year to year even century-to-century in a particular region.

11. Differentiate between thal and thar.

**Ans.**

**Thal:** The desert ecosystem found in western Punjab is called as Thal. It comprises of Mainwali and Bukhar districts.

**Thar:** The desert ecosystem found in Sindh is called Thar.

12. Differentiate between Alpine and Boreal forests. (LB-2009, 2018)

**Ans:**

**Alpine:** Coniferous forests located at high altitudes are called alpine e.g. in Kaghan, Dir, Chilas in Pakistan

**Boreal:** coniferous forests located at high latitude are called Boreal. e.g. in Canada, Eurasia.

13. Differentiate between Zooplankton and Phytoplankton. (LB-2008, 2011)

**Ans:**

**Phytoplankton:** It means drifting plants. These are aquatic, photosynthetic bacteria, algae, cyanobacteria and some other protists.

**Zooplankton:** It means drifting animals. These are found among aquatic plants and are mostly microscopic such as protozoan, crustaceans.

14. Differentiate between Prairies and Savanna.

**Ans:**

**Prairies:** Grass lands present in temperate climate are called prairies. Prairies do not have woody plants e.g. prairies of North America, Pampas of Argentina.

**Savanna:** Grass lands present in tropical climate are called savanna. These have woody trees also.

15. Differentiate among littoral, limnetic and profundal zone. (OR) Characterize littoral zone of fresh water lakes. (OR) What is limnetic zone mention its life. (LB-2013, 2014, 2021)

**Ans:**

|               |                |
|---------------|----------------|
| Limnetic Zone | Profundal Zone |
|---------------|----------------|



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| <ul style="list-style-type: none"> <li>• In limnetic zone enough light penetrates to support photosynthesis.</li> <li>• In limnetic zone, phytoplankton includes cyanobacteria (blue green algae) which serve as producers.</li> <li>• In limnetic zone; phytoplankton are eaten by protozoa and small crustaceans, which in turn are consumed by fish.</li> </ul> | <ul style="list-style-type: none"> <li>• In profundal zone, light is insufficient.</li> <li>• The organisms of profundal zone are mainly nourished by detritus that falls from the littoral and limnetic and by incoming sediment.</li> <li>• Decomposers and detritus feeders such as snails and certain insects larvae, bacteria, fungi and fishes inhabit in profundal zone.</li> </ul> |
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**Littoral zone:** It is a zone near the shore of the lake. In this zone, there is shallow water, abundant light, anchorage, and abundant nutrients. It has diverse community including lilies, submerged plants, plankton, crustaceans, snails, flatworms, hydra, snakes, frog and turtles.

**16. Describe animal life of Grassland ecosystem. (LB-2012)**

**Ans:**

**Animal life of grass land ecosystem:** Dominant species are herbivores. Invertebrates include, insects (Grasshoppers) are common. Other herbivores are zebras, wild horses and bison. The predators are lizards, toads and turtles.

**17. Enlist two adaptations in plants and two in animals for a terrestrial ecosystem. (OR) Give two adaptations of terrestrial ecosystem. (LB-2010, 2012, 2019)**

**Ans:**

**Adaptations on land:**

- Plants have evolved vascular bundles for support.
- Animals have evolved skeleton for support.
- Plants have evolved methods to conserve water and regulate temperature.
- Animals have evolved skin to conserve water.

**18. Give the name of some major ecosystems on land in Pakistan.**

**Ans:**

**Major Ecosystems in Pakistan:**

Temperate deciduous forests

Coniferous forests

Grass land ecosystem

Desert ecosystem

Tundra ecosystem

e.g. Shogran, Neelum Valley

e.g. Kaghan, Dir

e.g. Gilgit, Kashmir

e.g. Mainwali, Bukhar, Sindh

e.g. Kara-Koram, Hindu Kush.

**19. Give location of Tundra ecosystem in Pakistan. (LB-2014)**

**Ans:**

**Tundra:** is used to describe type of vegetation in treeless high latitude between taiga and polar ice caps, and high altitudes across the mountains above the timberline such as in the mountains of Karakoram and Hindukush of Pakistan.

**20. Mention the characteristics of plant life in desert ecosystem. (LB-2013)**

**Ans.**

**Plants in Desert Ecosystem:** The plants are often spaced widely spaced. The plants are covered with waterproof waxy coating and have succulent stems. Examples, Cacti and Euphorbia.