Biodiversity and Conservation

CHAPTER 15

NCERT FOCUS

ANSWERS

Topic 1

1. The three important components of biodiversity are : genetic diversity, species diversity and ecological diversity. These components are the basic building blocks of biodiversity. These are intimately linked and may have common elements.

2. Ecologists estimate the total number of species present in the world by comparing species richness of some exhaustively studied groups between any two regions (tropics, temperate or polar regions). Species richness, as a measure of diversity, has been used by many ecologists. Species density or the number of species per m^2 is most commonly used to measure species richness. Species abundance and species proportional abundance based indices are some other alternative approaches to the measurement of diversity.

3. The three hypotheses for higher species richness in tropical areas are:

(i) Prolong evolutionary time – Temperate areas have undergone frequent glaciation in the past. It killed most of the species. No such disturbance occurred in tropics where species continued to flourish and evolve undisturbed for millions of years.

(ii) Favourable environment – There are no unfavourable seasons in tropics. Continued favourable environment has helped tropical organisms to gain more niche specialisation and increased diversity.

(iii) More sunlight – More solar energy is available in tropics. This promotes higher productivity and increased biodiversity.

4. Slope of regression or regression coefficient makes it easier to measure species richness along an area. For a limited area like, a country, it gives a constant value of 0.1 to 0.2 irrespective of the taxonomic group or region. It remains amazingly similar for all those small regions. On the contrary, for measuring species-area relationship over large areas like the entire continents, the slope of regression values in the range of 0.6 to 1.2.

5. The major causes of species losses in a geographical area are:

(i) Habitat loss and fragmentation
(ii) Over exploitation
(iii) Alien species invasion
(iv) Co-extinctions
(v) Disturbance and degradation
(vi) Pollution
(vii) Intensive agriculture and forestry.

Topic 2

1. Sacred forests or sacred groves are forest patches around places of worship which are held in high esteem by tribal communities. They are the most undisturbed forest patches which are often surrounded by highly degraded landscapes. They are found in several parts of India, *e.g.*, Karnataka, Maharashtra, Rajasthan (Aravalli), Madhya Pradesh (Sarguja, Bastar), Kerala, Meghalaya. Temples built by tribals are found surrounded by deodar forests in Kumaon region, Jaintias and Khasia in Meghalaya. Not a single branch is allowed to be cut from these forests. As a result, many endemic species which are rare or have become extinct elsewhere can be seen to flourish here. Bishnois of Rajasthan protect *Prosopis cineraria* and Black Buck religiously. Some water bodies are also held sacred in certain places. *e.g.*, Khecheopalri in Sikkim. Their aquatic flora and fauna are naturally preserved.

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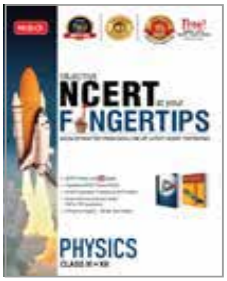

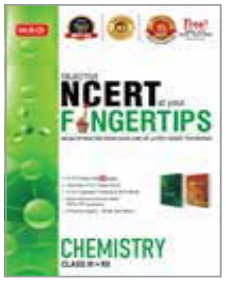

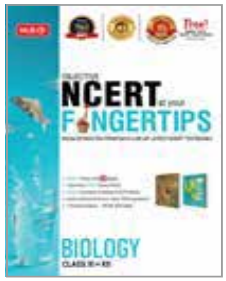

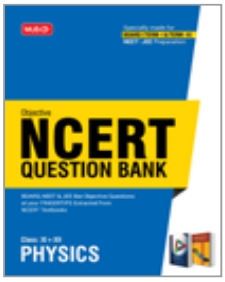

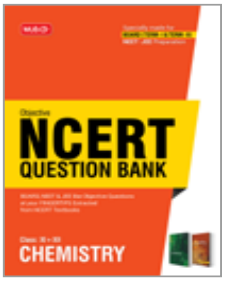

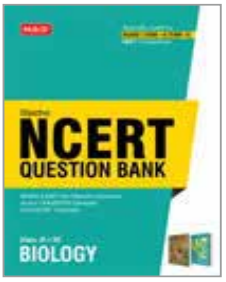

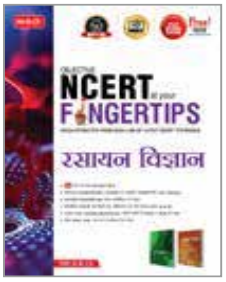

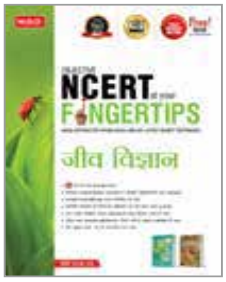

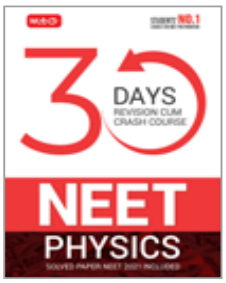

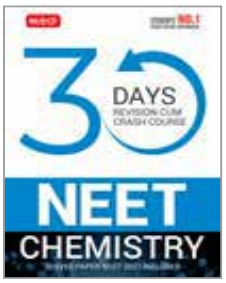

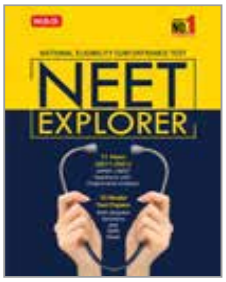

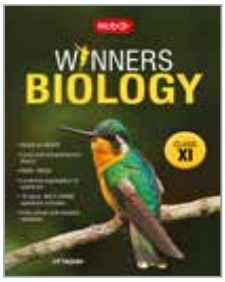

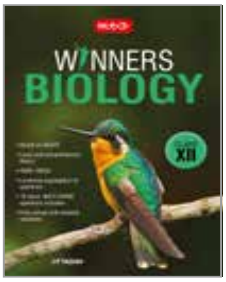

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