

Chapter-16

Biodiversity and Conversation

1. Multiple choice questions.

Question 1(i).

Conservation of biodiversity is important for:

- (a) Animals**
- (b) Animals and plants**
- (c) Plants**
- (d) All organisms.**

Answer:

- (d) All organisms**

Question 1(ii).

Threatened species are those which:

- (a) Threaten others**
- (b) Lion and tiger**
- (c) Are abundant in number**
- (d) Are suffering from the danger of extinction.**

Answer:

- (d) Are suffering from the danger of extinction**

Question 1(iii).

National parks and sanctuaries are established for the purpose of:

- (a) Recreation**
- (b) Hunting**
- (c) Pets**
- (d) Conservation.**

Answer:

(d) Conservation

Question 1(iv).

Biodiversity is richer in:

(a) Tropical Regions

(b) Polar Regions

(c) Temperate Regions

(d) Oceans.

Answer:

(a) Tropical Regions

Question 1(v).

In which one of the following countries, the 'Earth Summit' was held?

(a) The UK

(b) Mexico

(c) Brazil

(d) China.

Answer:

(c) Brazil.

2. Answer the following questions in about 30 words.

Question 2(i).

What is biodiversity?

Answer:

Biodiversity itself is a combination of two words, Bio (life) and diversity (variety). In simple words, biodiversity is the number and variety of organisms found within a specified geographic region. It refers to the varieties of plants, animals and microorganisms, the genes they contain and the ecosystems they form. It relates to the variability among living organisms on the earth, including the variability within and between the species and that within and between the ecosystems.

Question 2(ii).

What 'are the different levels of biodiversity?

Answer:

Biodiversity itself is a combination of two words, Bio (life) and diversity (variety).

In simple words, biodiversity is the number and variety of organisms found within a specified geographic region. It is a result of hundreds of millions of years of evolutionary history. Biodiversity can be discussed at three levels:

1. Genetic diversity;
2. Species diversity;
3. Ecosystem diversity.

1. Genetic diversity: Genetic diversity refers to the variation of genes within species.

2. Species diversity: Species diversity refers to the variety of species. It relates to the number of species in a defined area. The diversity of species can be measured through its richness, abundance and types.

3. Ecosystem diversity: The broad differences between ecosystem types and the diversity of habitats and ecological processes occurring within each ecosystem type constitute the ecosystem diversity.

Question 2(iii)

What do you understand by 'hotspots'?

Answer:

Some areas are richer in species than others. Areas rich in species diversity are called hotspots of diversity. Hotspots are defined according to their vegetation. Plants are important because these determine the primary productivity of an ecosystem. Most, but not all, of the hotspots rely on species-rich ecosystems for food, firewood, cropland, and income from timber. In Madagascar, for example, about 85 per cent of the plants and animals are found nowhere else in the world.

Question 2(iv).

Discuss briefly the importance of animals to human kind.

Answer:

The earth, its ecosystems, and its creatures are all deeply connected. Thus, the existence of many species depends on the survival of others, and don't think human beings are an exception. As disconnected from nature as many of us humans have become, there are many animals we rely on for our benefit and wellbeing. Many animals actually help people just by performing their natural roles in their environment. And we're benefiting from their services for free.

Question 2(v).**What do you understand by 'exotic species'?****Answer:**

Species which are not the natural inhabitants of the local habitat but are introduced into the system, are called exotic species. There are many examples when a natural biotic community of the ecosystem suffered extensive damage because of the introduction of exotic species. During the last few decades, some animals like tigers, elephants, rhinoceros, crocodiles, minks and birds were hunted mercilessly by poachers for their horn, tusks, hides, etc. It has resulted in the rendering of certain types of organisms as endangered category.

3. Answer the following questions in about 150 words.**Question 3(i).****What are the roles played by biodiversity in the shaping of nature?****Answer:**

Species of many kinds perform some function or the other in an ecosystem. Nothing in an ecosystem evolves and sustains without any reason. It implies that every organism, besides extracting its needs, also contributes something of useful to other organisms. Human beings contribute a great deal to the sustenance of ecosystems.

1. Species capture and store energy, produce and decompose organic materials, help to cycle water and nutrients throughout the ecosystem, fix atmospheric gases and help regulate the climate. These functions are important for ecosystem function and human survival.
2. The more diverse an ecosystem, better are the chances for the species to survive through adversities and attacks, and consequently, is more productive.
3. Hence, the loss of species would decrease the ability of the system to maintain itself. Just like a species with a high genetic diversity, an ecosystem with high biodiversity may have a greater chance of adapting to environmental change.
4. In other words, the more the variety of species in an ecosystem, the more stable the ecosystem is likely to be.

Question 3(ii).**What are the major factors that are responsible for the loss of biodiversity? What steps are needed to prevent them?****Answer:**

Major causes for loss of biodiversity are as follows:

1. Since the last few decades, growth in human population has increased the rate of consumption of natural resources. It has accelerated the loss of species and habitation in different parts of the world.
2. Over-exploitation of resources and deforestation have become rampant to fulfil the needs of large population. As these tropical rain forests contain 50 per cent of the species on the earth, destruction of natural habitats have proved disastrous for the entire biosphere.
3. Natural calamities such as earthquakes, floods, volcanic eruptions, forest fires, droughts, etc. cause damage to the flora and fauna of the earth, bringing changes to the biodiversity of respective affected regions.
4. Pesticides and other pollutants such as hydrocarbons and toxic heavy metals destroy the weak and sensitive species.
5. Conservation strategy has suggested the following steps for biodiversity conservation:
 - a. Efforts should be made to preserve the species that are endangered.
 - b. Prevention of extinction requires proper planning and management.
 - c. Varieties of food crops, forage plants, timber trees, livestock, animals and their wild relatives should be preserved;
 - d. Each country should identify habitats of wild relatives and ensure their protection.
 - e. Habitats where species feed, breed, rest and nurse their young ones should be safeguarded and protected.
 - f. International trade in wild plants and animals be regulated.