

SCIENCE

Chapter 7: Conservation of Plants and Animals



Conservation of Plants and Animals

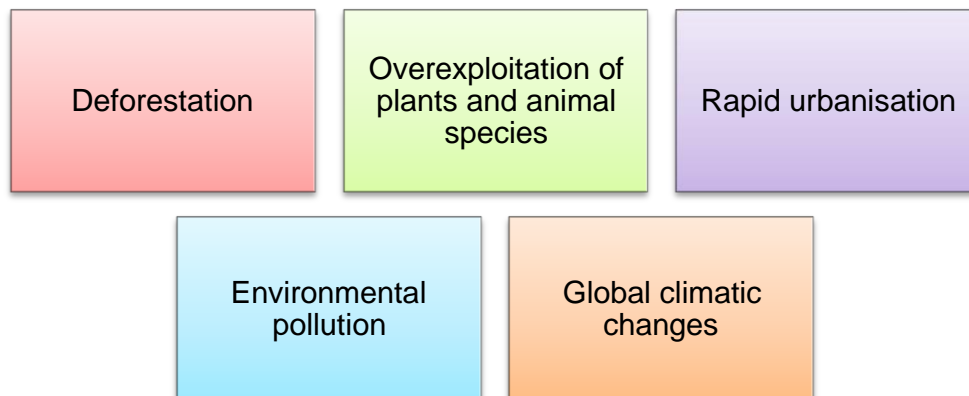
Biodiversity

- The variety in living organisms existing on the Earth is called **biodiversity**.
- The term biodiversity was coined by Walter G. Rosen in 1896.
- Biodiversity is important for the survival of all living beings.
- It is very important to conserve the vast biodiversity which exists on this planet because it helps us in many ways such as pollination, nutrient cycling and regulation of atmosphere and climate.

Causes for decline in Biodiversity

- Increasing human population
- Overexploitation of plant and animal species
- Deforestation
- Environmental pollution
- Global warming

Threats to Biodiversity



Deforestation

- Deforestation is cutting down of trees or destroying forests to use the land for some other purpose.

Causes of Deforestation

- For urban and construction purposes
- To obtain fuel
- To grow crops
- To create grazing land
- Forest fires

- Droughts
- Volcanic eruptions

Consequences of Deforestation Soil Erosion

- Alteration of local and global climate
- Frequent flooding
- Shortage of wood and other forest products
- Affects water cycle
- Extinction of wild plants and animals

Conservation of Biodiversity



Conservation of Forests

- Forests are cleared for agriculture, forestry, housing and other developmental activities such as construction of roads and building of hydro-electric plants.
- Protection of forest cover is the need of the hour.

A **species** is an organism of a particular kind whose members can interbreed among themselves to produce fertile young ones. Members of a species have common characteristics. All human beings belong to the same species *Homo sapiens*.

Ways to Protect Forests

Reforestation

- Reforestation is restocking of destroyed forests by planting new trees.
- It takes place on land where trees are recently removed either due to harvesting or due to a

natural disaster such as a fire, flood or volcanic eruption.

- Reforestation can occur naturally or through human efforts.
- If a deforested area is left undisturbed, then it can re-establish and mature itself naturally. However, planting of trees can reduce the length of time required for a forest to mature.

Conservation of Wildlife

- Preservation of forests and wildlife is a big challenge placed before us.
- Many wild species are either extinct or endangered.
- It is therefore essential to conserve the rich wildlife and prevent its extinction.

Overexploitation of Plant and Animal Species

- Numerous forests, fisheries and wildlife resources are overexploited because of their economic value.
- Overexploitation leads to a reduction in the number of certain species of plants and animals while others become rare or endangered and sometimes even extinct.

SPECIES	DESCRIPTION
Rare species	<ul style="list-style-type: none">• Rare species exist in relatively low numbers but are not necessarily in immediate danger of extinction.• Examples: Black and white ruffed lemur, <i>Aloe polyphylla</i>
Endangered species	<ul style="list-style-type: none">• An endangered species is one in which the population of organisms is at the risk of extinction.• Examples: The Indian rhinoceros, the Great Indian bustard, Pink Butterfly Orchid
Vulnerable species	<ul style="list-style-type: none">• Species which exist in low numbers and may become endangered due to destruction of their habitat, overexploitation or due to some other environmental factor are called vulnerable species.• Examples: The Asian elephant, Rafflesia
Threatened species	<ul style="list-style-type: none">• Threatened species are any species which are vulnerable to endangerment in the near future.• Examples: Giant Panda, Monarch butterfly
Endemic species	<ul style="list-style-type: none">• Plant and animal species which are found only in a particular region and nowhere else in the world are called endemic species.• Examples: Nilgiri leaf monkeys found in the Nilgiri Hills of the Western Ghats; Asiatic lions of Gir National Park, Gujarat; Bengal tiger found in Sundarbans National Park, West Bengal
Extinct species	<ul style="list-style-type: none">• A species is considered extinct when no member of the species is still alive.• Examples: Dodo, Woolly Mammoth

Ways to Conserve Wildlife

Conserving a habitat

- Conservation of habitat refers to taking care of the habitat of wild animals so that they feel safe and secure.

Creating a habitat

- Protection of endangered species by creating protected areas such as national parks, sanctuaries and biosphere reserves.

Protection by law

- The Indian Government has implemented strict laws to protect wildlife.
- According to the Wildlife Protection Act 1972, poaching or killing of animals is punishable by law.

Organisations involved in wildlife conservation

- The International Union for Conservation of Nature (IUCN) provides information about endangered plant and animal species.
- In India, the Indian Board for Wildlife plays an important role in monitoring the endangered species.
- The World Wide Fund for Nature (WWF) also plays an active role in the conservation of natural resources.

Biosphere Reserves

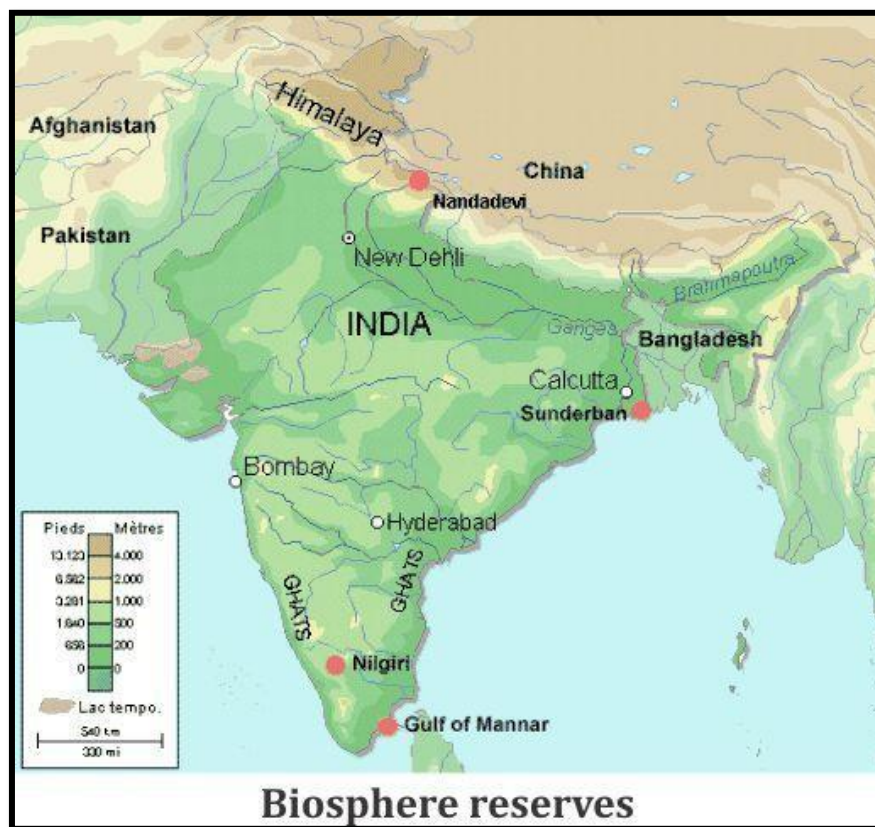
Biosphere reserves or biodiversity zones are large areas of protected land for the conservation of wildlife, plant and animal resources and the traditional life of tribal people living in the area.

Role of biosphere reserves:

- Help in conservation of wildlife of the area
- Help to maintain the biodiversity of the area
- Preserve the natural ecological conditions in the area
- Help to maintain the lifestyle of the tribal people living in the area
- Prevent the commercial exploitation of the area
- Provide opportunities for scientific research, environmental education and tourism

Biosphere reserves in India:

Biosphere Reserve	State
Great Nicobar Biosphere Reserve	Andaman and Nicobar
Kaziranga Biosphere Reserve	Assam
Kanha Biosphere Reserve	Madhya Pradesh
Sunderbans Biosphere Reserve	West Bengal
Pachmarhi Biosphere Reserve	Madhya Pradesh



Flora and Fauna

- Plants naturally occurring in a particular area constitute the **flora**.
- Teak, Jamun, Fern, Mango and Arjun constitute the flora of Pachmarhi Biosphere Reserve.
- Animals naturally occurring in a particular area constitute its **fauna**.
- Cheetah, Wolf, Leopard, Chinkara, Blue bull, Barking deer and Wild dog constitute the fauna of Pachmarhi Biosphere Reserve.

Wildlife Sanctuary

- A **wildlife sanctuary** is an area where animals are protected from any kind of disturbance such as hunting, predation and competition.
- It is a protected area created by the government. The government lays down rules, methods and policies to protect and conserve the animals.
- Wildlife sanctuaries are mainly established to protect endangered species. They may also be established for preserving biodiversity.
- Threatened wild animals such as black buck, white eyed buck, golden cats, marsh crocodiles, python and rhinoceros are protected in the wildlife sanctuaries of India.
- There are around 441 wildlife sanctuaries in India.

SANCTUARY	STATE
Sanjay Gandhi Wildlife Sanctuary	Maharashtra
Mudumalai Wildlife Sanctuary	Tamil Nadu
Nagarjunsagar Wildlife Sanctuary	Andhra Pradesh
Bharatpur Bird Sanctuary	Rajasthan
Sultanpur Lake Sanctuary	Haryana
Dandeli Wildlife Sanctuary	Karnataka
Thattekad Bird Sanctuary	Kerala
Satkosia Basipalli Wildlife Sanctuary	West Bengal
Lockchao Wildlife Sanctuary	Manipur
Bori Wildlife Sanctuary	Madhya Pradesh

Differences between Wildlife Sanctuary and Zoo

WILDLIFE SANCTUARY	ZOO
1. The wild animals and birds live in their natural habitat in the forest.	1. The wild animals and birds live in artificial habitats such as cages and enclosures.
2. It contains wild animals and birds found locally.	2. It contains wild animals and birds brought from different parts of the country and from other countries.
3. It is not open to public freely. They can only visit when accompanied by a forest guard.	3. It is open to public for a fixed time every day.
4. Wild animals and birds are very comfortable in the natural environment of a wildlife sanctuary.	4. Wild animals and birds are not comfortable in the artificial environment of a zoo.

National Parks

- National parks comprise a large area of land owned by the government which is restricted from development and is protected for its landscape, flora, fauna and ecosystem on the whole.
- Some national parks are home to a particular animal species. Examples: Gir National Park in Gujarat for Asiatic lions, Kaziranga National Park for rhinoceros, Kanha National Park for tigers etc.
- There are almost 96 national parks in India.

NATIONAL PARK	STATE
Corbett National Park	Uttarakhand
Kanha National Park	Madhya Pradesh
Ranthambore National Park	Rajasthan
Gir National Park	Gujarat
Kaziranga National Park	Assam
Sunderbans National Park	West Bengal
Bandipur National Park	Karnataka
Dachigam National Park	Jammu and Kashmir
Sariska National Park	Rajasthan
Satpura National Park	Madhya Pradesh

Advantages of National Parks

Preserve wildlife as well as the important environmental heritage of a nation.

Provide evidence of a prehistoric human life in the jungles.

Provide human recreation and enjoyment.

Protect whole sets of ecosystems.

Project Tiger

Project Tiger was launched by the Indian Government in 1973.

The main motive of this project was to protect tigers by providing them a safe place to flourish. Hence, special tiger reserves such as the Satpura Tiger Reserve and the Sariska Tiger Reserve were constructed throughout the country.

Red Data Book

- Red data book keeps a record of all the endangered animals and plants.
- Different red data books are maintained for plants, animals and other species.

Migration

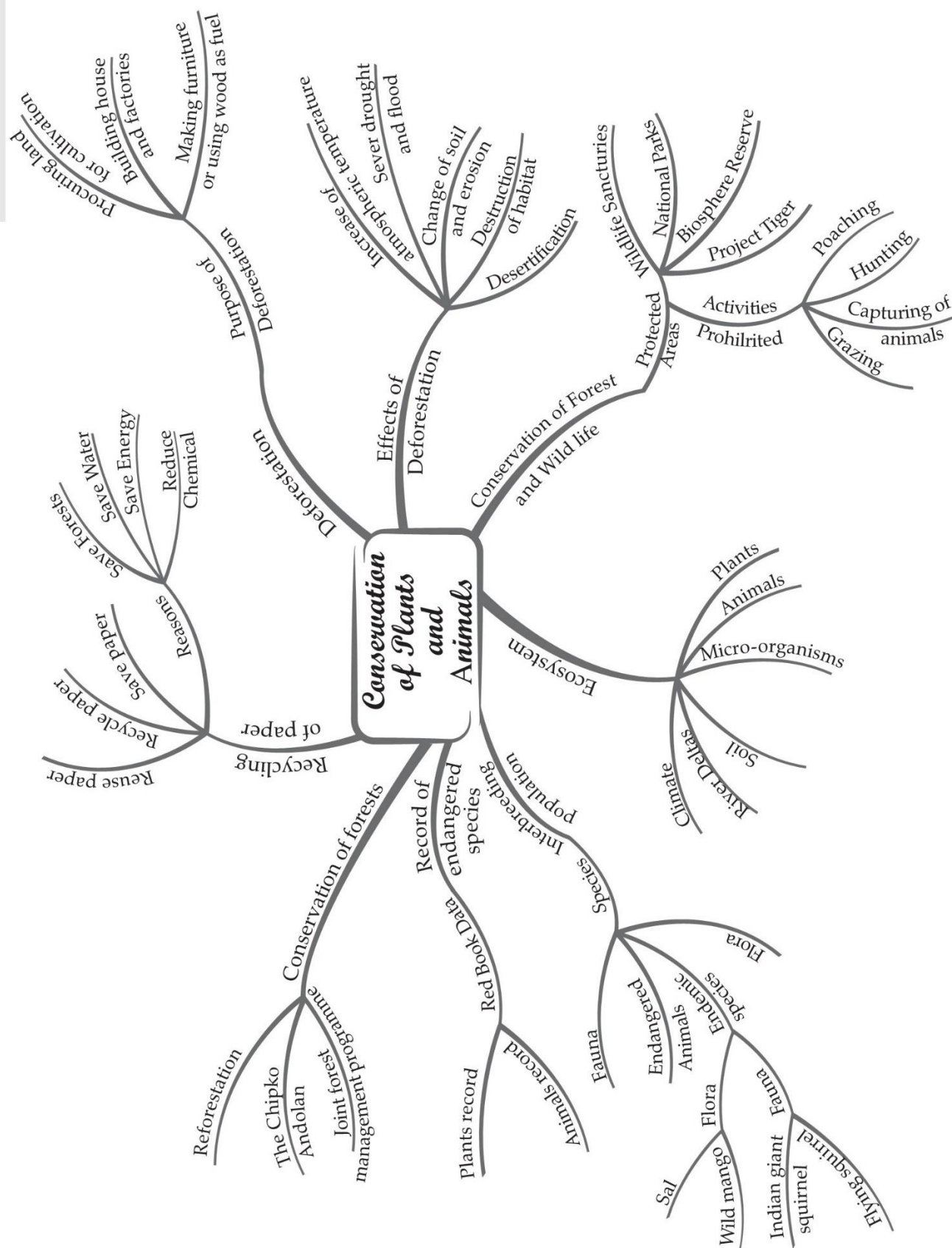
- The movement of animals in large numbers from one place to another to overcome unfavourable conditions is called **migration**.
- Migratory birds migrate due to changes in climatic conditions.
- Due to extreme cold, their natural habitat becomes unsuitable for the incubation of eggs and hence, they migrate to a location of suitable climate.
- Siberian cranes migrate to Bharatpur in Rajasthan because the environmental conditions there are more favourable as compared to Siberia, the place where they actually come from.

Recycling of Paper

- Paper recycling is the process of remaking new paper products from waste paper.
- Besides recycling, used sheets of paper can be used to make useful things such as paper bags, writing paper, greeting cards and wrapping paper.
- Recycling of paper helps to conserve energy as it uses 25% less energy than the energy used in making paper from trees.

MIND MAP : LEARNING MADE SIMPLE

CHAPTER-9



Important Questions

Multiple Choice Questions-

Question 1. WWF works in the field of:

- (a) water conservation
- (b) forest conservation
- (c) wildlife conservation
- (d) human resource conservation

Question 2. Wildlife is depleting due to:

- (a) soil erosion
- (b) hunting and poaching
- (c) loss of sunlight
- (d) loss of minerals

Question 3. Which of the following are responsible for extinction of a species?

- (a) clearing of land to plant crops and build road
- (b) loss of habitat
- (c) excessive use of chemical fertilisers and pesticides
- (d) providing habitats for animals in zoo

Question 4. Fauna means:

- (a) wild animals
- (b) domesticated animals
- (c) all types of plants
- (d) both (a) and (b)

Question 5. Endemic species are:

- (a) those which are facing the dangers of extinction
- (b) exclusively found in a particular area only
- (c) found every where
- (d) none of these

Question 6. Zoos are places:

- (a) where wild animals are protected and preserved

- (b) where animals are protected in artificial settings instead of their natural habitat
- (c) or reserves which are large and diverse enough to protect whole sets of ecosystems
- (d) none of these

Question 7. National parks are:

- (a) reserves which are large and diverse enough to protect whole sets of ecosystems
- (b) places where animals are protected in artificial setting instead of their natural habitat
- (c) some areas where wild animals are protected and preserved
- (d) none of these

Question 8. Biosphere is:

- (a) that part of the earth in which non-living organisms exist
- (b) that park of the earth in which living organisms exist or which support life
- (c) that part of the earth in which both living and non-living organisms exist
- (d) none of these

Question 9. Which of the following species is extinct:

- (a) great Indian Bustard bird
- (b) musk deer
- (c) cheetah
- (d) blue whale

Question 10. 'Project Tiger' was launched in:

- (a) 1983
- (b) 1973
- (c) 1987
- (d) 1976

Question 11. 'National Forest Policy' was implemented by Government of India in:

- (a) 1958
- (b) 1947
- (c) 1952
- (d) 1973

Question 12. 'Forest (Conservation) Act' was implemented in:

(a) 1952

(b) 1973

(c) 1958

(d) 1980

Question 13. The conversion of fertile land into deserts is:

(a) defertilisation

(b) desertification

(c) deforestation

(d) none of these

Question 14. Flora means:

(a) wild plant species

(b) domesticated plant species

(c) animals

(d) both (a) and (b)

Question 15. Environment in which an animal lives is called its:

(a) habitat

(b) home

(c) reservoir

(d) resort

Very Short :

1. Name some National Parks and sanctuaries.
2. What is the major threat to survival of organisms?
3. What do you mean by deforestation?
4. Write two natural causes of deforestation.
5. Name some products which we get from forests.
6. What is sanctuary?
7. What are National Parks?
8. Name the part of earth which supports the biodiversity.
9. Write the name of two wildlife sanctuaries hosted by Pachmarhi Biosphere Reserve.
10. What are flora?

Short Questions :

1. Define sanctuary and national parks with examples.
2. Explain deforestation and its causes.
3. What are the consequences of deforestation?
4. What are the effects of deforestation on soil?
5. What is draught and desertification?
6. What do you mean by biosphere reserves?
7. What are the efforts of government regarding taking care of forests and animals?
8. Name the national park and wildlife sanctuaries of Pachmarhi biosphere reserves.
9. What is flora and fauna?
10. List the factors disturbing biodiversity of a particular area.

Long Questions :

Question 1. How does deforestation lead to frequent floods and droughts?

Question 2. Explain how deforestation associated with global warming.

Question 3. What do you mean by Biosphere Reserve?

Question 4. How can we protect wildlife?

Question 5. Why is the conservation of biodiversity important?

Question 6. What are 'rare species'? Give examples.

Question 7. What is Van Mahotsav? Who started it and when?

Answer

MCQ

Answer

(c) wildlife conservation

WWF works in the field of wildlife conservation.

Answer

(b) hunting and poaching

Wildlife is depleting due to hunting and poaching.

Answer

(a) clearing of land to plant crops and build road

Clearing of land to plant crops and build road is responsible for extinction of a species

Answer

(d) both (a) and (b)

Fauna includes both wild and domesticated animals.

Answer

(b) exclusively found in a particular area only

Endemic species are exclusively found in a particular area only.

Answer

(b) where animals are protected in artificial settings instead of their natural habitat

Zoos are places where animals are protected in artificial settings instead of their natural habitat.

Answer

(a) reserves which are large and diverse enough to protect whole sets of ecosystems

National parks are reserves which are large and diverse enough to protect whole sets of ecosystems.

Answer

(b) that part of the earth in which living organisms exist or which support life

Biosphere is that part of the earth in which living organisms exist or which support life.

Answer

(c) cheetah

Cheetah species is extinct whereas great Indian Bustard Bird, Musk Deer and Blue Whale are endangered species.

Answer

(b) 1973

'Project Tiger' was launched in 1973.

Answer

(c) 1952

National Forest Policy' was implemented by Government of India in 1952.

Answer

(d) 1980

'Forest (Conservation) Act' was implemented in 1980.

Answer

(b) desertification

Desertification is the conversion of fertile land into deserts. Deforestation means clearing of forest.

Answer

(d) both (a) and (b)

Flora are all types of plant species, including wild and domesticated animals.

Answer

(a) habitat

Environment in which an animal lives is called habitat.

Very Short-

1. **Answer:** Bharatpur Sanctuary, Lockchao Wildlife Sanctuary Kaziranga National Park and Satpura National Park.
2. **Answer:** Deforestation.
3. **Answer:** The clearing (cutting) of forests and using that land for other purposes is called deforestation.
4. **Answer:** (i) Forest fire (ii) Severe droughts.
5. **Answer:** Fruits, vegetables, timber, fodder and medicines.
6. **Answer:** The areas where animals are protected from any disturbance to them and their habitat are called sanctuary.
7. **Answer:** The areas reserved for wildlife where they can freely use the habitats and natural resources are called national parks.
8. **Answer:** Biosphere Reserve.
9. **Answer:** Bori and Pachmarhi
10. **Answer:** The plants typically belonging to a particular area are called flora.

Short Answer-

1. **Answer:** A wildlife sanctuary is an area where animal habitats and their surroundings are protected from any sort of disturbance. The capturing, killing and poaching of animals is strictly prohibited in these regions. For Examples: Sanjay Gandhi Wildlife Sanctuary, Asola Bhatti Wildlife Sanctuary, etc.

National Park is an area reserved for wildlife where they can freely use the habitats and natural resource. National park contains extremely important habitats and species. This is protected areas in which human interference are not allowed. For Examples: Corbett National Park, Sunderban National Park, etc.

2. **Answer:** Deforestation means clearing the forest or stands of trees, and using that land for other purposes.

Following are the main causes of deforestation:

- Procuring land for cultivation

- Building houses and factories
- Making furniture or using wood as fuel.
- Some natural causes of deforestation are forest fires and severe droughts.

3. Answer: Consequences of deforestation:

- Soil erosion
- Loss of biodiversity
- Floods and droughts
- Climate change due to global warming
- Disruption of water cycle

4. Answer: Deforestation causes soil erosion. Because the roots of trees hold soil tightly and prevent the soil from erosion. If we cut trees the roots leave the soil and so that the soil will erode. When forest is cut down, nothing is there to protect the soil. Once the forests are cut down, the erosive effects are much worse than on flat land. Erosion and rainfall in such places can cause huge mudslides. This can cause serious land degradation. Loss of trees and other vegetation may cause soil erosion.

5. Answer: Because of deforestation the temperature on earth may increase, and this may disturb the natural water cycle and may reduce rainfall, this condition is called draught.

Removal of the top layer of the soil exposes the lower, hard and rocky layers. This soil has less humus and is less fertile. Gradually the fertile land gets converted into deserts. It is called desertification

6. Answer: Biosphere reserves are the large areas of protected land meant for conservation of wild life, plants and animals resources and traditional life of the tribal residing in that area. It helps to maintain biodiversity and culture of that area.

Example: Pachmarhi biosphere reserves

7. Answer: The government lays down various rules, methods and policies for protection and conservation of wild life. Government are focussing on wildlife sanctuaries, national park, and biosphere reserves for conservation of plants and animals present in that area.

8. Answer: National park named Satpura and two wildlife sanctuaries named as Bori and Pachmarhi

9. Answer: The plants and animals found in a particular area are termed flora and fauna of that area. Sal, teak, mango, etc. are the flora and barking deer, cheetah, leopard, wild dog, wolf, etc. are examples of the fauna.

10. Answer: Factors disturbing the biodiversity of a particular area are:

- Deforestation
- Air pollution (poisonous gases, smoke from vehicles)

- Industrialisation
- Poaching of animals

Long Answer-

1. Answer:

Deforestation results in decreased water holding capacity of soil. This reduces the infiltration of water into the ground which causes floods. On the other hand, deforestation leads to higher level of carbon dioxide in the atmosphere which causes global warming. Scarcity of trees disturbs the water cycle and may reduce rainfall leading to droughts.

2. Answer:

Plants absorb carbon dioxide from the atmosphere for photosynthesis. Deforestation results in decreased number of trees leading to accumulation of carbon dioxide in the atmosphere. Carbon dioxide in the atmosphere traps heat rays reflected by the earth which results in global warming.

3. Answer:

Biosphere Reserve is a large area of protected land for the conservation of wildlife, plant and animal resources and traditional life of the tribals living in that area.

4. Answer:

Wildlife plays a significant role in maintaining a balance in the environment. They can be protected by establishing secured and protected area, which are restricted for human activities that are against the protection of wildlife. Cutting of trees, hunting, poaching are strictly banned there. Many of these areas are national parks and wildlife sanctuaries.

5. Answer:

Because of the following reasons, the conservation of biodiversity is important:

- It boosts tourism and thus, plays a significant role in enhancing the economy of the country.
- It maintains the fertility of soil.
- It helps in maintaining the ecological balance on the earth.
- Biodiversity is a rich source for the study of genetics and evolution.
- It helps in maintaining the weather by regulating climatic changes, rainfall, etc.

6. Answer:

Rare species are uncommon and scarce, that is to say, their population is very small. Major steps are to be taken for their conservation and protection so that they may not fall under the category of endangered or extinct species; e.g., wild buffalo, Bengal fox, gaur, marbled cat, etc.

7. Answer:

Van Mahotsav is an annual tree-planting festival in India. This movement was initiated in the year 1950 by India's Union Minister for Agriculture, Kulapati Dr K. M. Munshi. It has gained immense national importance and every year, millions of saplings are planted all across India in observation of the Van Mahotsav week. It is expected that every citizen of India has to plant a sapling in the Van Mahotsav week. It helps spread awareness amongst people about the harm caused by the cutting down of trees.