

# UNIT IV – ENVIRONMENTAL STUDIES

## Question and Answer Bank in Simple English

The uploaded PDF covers environmental protection laws, wildlife protection, forest conservation, endangered and endemic species, biodiversity conservation, and Environmental Impact Assessment (EIA).

The following answers are arranged by question length. The 4-mark answers are short, while the 6-mark answers give more details. Questions are not repeated between the two sections.

### Part A – Short-answer questions

#### 1. What is the Environment (Protection) Act, 1986?

**Answer:**

The Environment (Protection) Act was passed in India in 1986 to protect and improve the environment.

Its main objectives are:

- To prevent environmental pollution.
- To protect air, water and land.
- To control harmful industrial activities.
- To protect human beings, animals and plants.
- To improve environmental quality.

The Act gives the Central Government powers to take measures to protect the environment.

#### 2. What are the objectives of the Wildlife (Protection) Act, 1972?

**Answer:**

The Wildlife (Protection) Act, 1972 was introduced to protect wild animals, birds and plants in India.

Its main objectives are:

- To prevent illegal hunting of wild animals.
- To protect endangered species.
- To establish national parks and wildlife sanctuaries.
- To control the illegal trade of wildlife products.
- To maintain ecological balance.

- To conserve India's wildlife diversity.

### 3. What is the Forest (Conservation) Act?

**Answer:**

The Forest (Conservation) Act was introduced in 1980 to protect forests and control deforestation.

Its main objectives are:

- To prevent the unnecessary cutting of trees.
- To conserve forest resources.
- To control the use of forest land for non-forest purposes.
- To maintain ecological balance.
- To protect wildlife habitats.
- To encourage forest conservation.

### 4. Define endangered species with examples.

**Answer:**

Endangered species are plants or animals that face a very high risk of extinction in the wild.

**Examples:** Bengal tiger, Asian elephant and gharial.

**Main causes:**

- Destruction of natural habitats.
- Illegal hunting and poaching.
- Pollution.
- Climate change.
- Overexploitation of natural resources.

Endangered species must be protected to maintain biodiversity.

### 5. Define endemic species with examples.

**Answer:**

Endemic species are plants or animals that are naturally found only in a particular geographical area and nowhere else in the world.

**Examples:**

- Nilgiri tahr of the Western Ghats.
- Lion-tailed macaque of the Western Ghats.
- Purple frog of the Western Ghats.

**Importance:**

- They contribute to biodiversity.
- They are important for ecological balance.
- They require special protection because of their limited distribution.

## 6. What is in-situ conservation?

**Answer:**

In-situ conservation means protecting plants and animals in their natural habitats.

**Examples:**

- National parks.
- Wildlife sanctuaries.
- Biosphere reserves.

**Advantages:**

- Protects organisms in their natural surroundings.
- Conserves many species together.
- Protects natural habitats and ecosystems.
- Allows species to reproduce naturally.

## 7. What is ex-situ conservation?

**Answer:**

Ex-situ conservation means protecting plants and animals outside their natural habitats.

**Examples:**

- Zoos.
- Botanical gardens.
- Seed banks.
- Gene banks.
- Captive breeding centres.

**Advantages:**

- Protects threatened species.
- Helps in breeding rare animals.
- Preserves seeds and genetic material.
- Supports the recovery of endangered species.

## 8. What is Environmental Impact Assessment (EIA)?

### Answer:

Environmental Impact Assessment is a process used to identify and study the possible environmental effects of a proposed project before it is carried out.

Its main purposes are:

- To identify possible environmental problems.
- To study the effects on air, water, land and wildlife.
- To suggest measures to reduce harmful effects.
- To support better project planning.
- To promote environmentally responsible development.

Examples of projects requiring environmental assessment may include industries, dams, mines and highways, depending on applicable rules.

## 9. What is the Red Data Book?

### Answer:

The Red Data Book is a record of species that are threatened with extinction. It provides information about the conservation status of plants, animals and other organisms.

### Importance:

- Identifies threatened species.
- Creates awareness about endangered organisms.
- Helps plan conservation activities.
- Supports research on biodiversity.
- Encourages the protection of rare species.

The International Union for Conservation of Nature (IUCN) publishes the Red List of Threatened Species.

## 10. Differentiate between in-situ and ex-situ conservation.

### Answer:

| In-situ conservation                      | Ex-situ conservation                            |
|-------------------------------------------|-------------------------------------------------|
| Protection in natural habitats.           | Protection outside natural habitats.            |
| Conserves natural ecosystems.             | Conserves selected species or genetic material. |
| Examples: national parks and sanctuaries. | Examples: zoos and seed banks.                  |

| In-situ conservation                          | Ex-situ conservation                           |
|-----------------------------------------------|------------------------------------------------|
| Organisms live in their natural surroundings. | Organisms are protected in managed conditions. |

Both methods are important for conserving biodiversity.

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## Part B – Descriptive questions

1. Explain the Environment (Protection) Act, 1986, its importance and limitations.

**Answer:**

### Introduction

The Environment (Protection) Act was passed in 1986 to protect and improve the environment in India. It provides a framework for controlling pollution and protecting human beings, animals, plants and property from environmental harm.

### Objectives

- To protect and improve environmental quality.
- To prevent and control pollution.
- To regulate activities that may harm the environment.
- To coordinate environmental protection measures.
- To support the implementation of environmental standards.

### Important provisions

1. The Central Government can prescribe standards for emissions and discharge of pollutants.
2. It can regulate the location and operation of industries.
3. It can collect environmental samples for testing according to the prescribed procedure.
4. Environmental laboratories can analyse samples and provide reports.
5. Authorities can take action against violations under the Act.

### Importance

- Helps control industrial pollution.
- Protects natural resources.
- Promotes public health and environmental safety.
- Supports environmental management.

- Encourages responsible industrial development.

### **Limitations**

- Shortage of staff and technical experts can affect enforcement.
- Lack of funds may delay implementation.
- Weak enforcement can reduce the effectiveness of the law.
- Public awareness and participation may be insufficient.

### **Conclusion**

The Environment (Protection) Act, 1986 is an important law for environmental protection. Effective implementation, public awareness and strict enforcement are necessary for better results.

## **2. Explain the Wildlife (Protection) Act, 1972 and its major features.**

### **Answer:**

#### **Introduction**

The Wildlife (Protection) Act, 1972 was introduced to protect wild animals, birds and plants in India. It aims to prevent hunting, control illegal wildlife trade and conserve natural habitats.

#### **Objectives**

- To protect endangered wildlife.
- To prevent illegal hunting and poaching.
- To conserve natural habitats.
- To control trade in protected wildlife species.
- To maintain ecological balance.

#### **Major features**

##### **1. Protection of wildlife**

The Act provides legal protection to listed wild animals and plants.

##### **2. Control of hunting**

Hunting of protected wild animals is prohibited, subject to specific legal exceptions.

##### **3. Protected areas**

The Act provides for the establishment and management of national parks and wildlife sanctuaries, among other protected areas.

##### **4. Control of wildlife trade**

It regulates or prohibits the trade, possession and transfer of protected wildlife and their products.

### **5. Authorities for conservation**

The Act provides for wildlife authorities and advisory bodies to support protection and conservation.

### **6. Penalties**

Violations may result in legal punishment, including fines and imprisonment, as prescribed by law.

### **Importance**

- Protects rare and endangered animals.
- Reduces illegal hunting.
- Conserves habitats and biodiversity.
- Supports wildlife research and management.
- Helps maintain ecological balance.

### **Conclusion**

The Wildlife (Protection) Act, 1972 plays a major role in conserving India's wildlife. Public cooperation and effective enforcement are necessary for its success.

## **3. Describe the Forest (Conservation) Act, 1980 and its importance.**

**Answer:**

### **Introduction**

Forests provide food, timber, medicines and shelter for wildlife. They also help maintain rainfall patterns, conserve soil and absorb carbon dioxide. The Forest (Conservation) Act, 1980 was introduced to control deforestation and conserve forest land.

### **Objectives**

- To prevent unnecessary loss of forests.
- To conserve forest resources.
- To protect wildlife habitats.
- To maintain ecological balance.
- To regulate the use of forest land for non-forest purposes.

### **Major provisions**

1. Prior approval of the Central Government is generally required for specified uses of forest land for non-forest purposes.

2. The Act places restrictions on the dereservation of reserved forests.
3. It helps regulate the diversion of forest land for activities such as mining and infrastructure development.
4. It supports the conservation of forest ecosystems.
5. Its provisions help control activities that may lead to large-scale deforestation.

### **Importance**

- Protects forest cover.
- Prevents habitat destruction.
- Conserves biodiversity.
- Reduces soil erosion.
- Helps regulate the climate.
- Supports the livelihoods of forest-dependent communities.

### **Limitations**

- Enforcement may be affected by inadequate staff and resources.
- Development projects can create pressure on forest land.
- Local and tribal communities may be affected if their needs are not properly considered.
- Illegal activities can continue when monitoring is weak.

### **Conclusion**

The Forest (Conservation) Act, 1980 is important for preventing deforestation and protecting natural resources. Forest conservation must also consider the rights and needs of local communities.

## **4. Explain endangered and endemic species of India, their causes and conservation methods.**

**Answer:**

### **Introduction**

India has rich biodiversity, including many species of plants and animals. Some species are endangered because their populations have declined greatly, while endemic species are naturally restricted to particular geographical areas.

### **1. Endangered species**

Endangered species face a very high risk of extinction in the wild.

Examples include:

- Bengal tiger.

- Asian elephant.
- Gharial.

## 2. Endemic species

Endemic species naturally occur only in a particular geographical region.

Examples include:

- Nilgiri tahr.
- Lion-tailed macaque.
- Purple frog of the Western Ghats.

## Causes of species endangerment

1. **Habitat destruction:** Forests and other natural habitats are cleared for development.
2. **Poaching:** Animals are killed illegally for their skin, horns, meat or other products.
3. **Pollution:** Pollutants damage habitats and affect the survival of organisms.
4. **Climate change:** Changes in temperature and rainfall can affect species and their habitats.
5. **Overexploitation:** Excessive hunting, fishing or collection reduces populations.

## Conservation methods

- Protect forests and other natural habitats.
- Establish and manage national parks and wildlife sanctuaries.
- Prevent poaching and illegal wildlife trade.
- Promote captive breeding where appropriate.
- Restore damaged habitats.
- Create public awareness.
- Enforce wildlife protection laws.

## Conclusion

Endangered and endemic species are valuable parts of India's biodiversity. Protecting their habitats and preventing illegal exploitation are essential for their survival.

## 5. Explain in-situ and ex-situ conservation methods in detail.

**Answer:**

### Introduction

Biodiversity conservation means protecting plants, animals and other organisms, along with their genetic diversity and habitats. The two major approaches are in-situ conservation and ex-situ conservation.

## 1. In-situ conservation

In-situ conservation protects species within their natural habitats.

### Methods and examples

- **National parks:** Protect wildlife and natural ecosystems.
- **Wildlife sanctuaries:** Provide protected habitats for wild animals.
- **Biosphere reserves:** Support conservation of large natural areas and sustainable use of resources.
- **Habitat restoration:** Repairs damaged ecosystems and helps native species recover.

### Advantages

- Protects entire ecosystems.
- Conserves many species together.
- Allows natural breeding and adaptation.
- Maintains ecological relationships.

## 2. Ex-situ conservation

Ex-situ conservation protects species outside their natural habitats.

### Methods and examples

- **Zoos:** Provide managed care for selected animals.
- **Botanical gardens:** Grow and conserve plant species.
- **Seed banks:** Store seeds for future use.
- **Gene banks:** Preserve genetic material.
- **Captive breeding:** Breeds threatened animals under managed conditions.

### Advantages

- Provides special protection for threatened species.
- Supports breeding and recovery programmes.
- Preserves valuable genetic material.
- Can support the reintroduction of species into the wild.

### Difference

In-situ conservation protects organisms in their natural environment, whereas ex-situ conservation protects them outside that environment.

### Conclusion

Both methods are important. In-situ conservation protects natural ecosystems, while ex-situ conservation provides additional protection for species that need special care.

## 6. Explain Environmental Impact Assessment (EIA), its objectives and steps.

**Answer:**

### **Introduction**

Environmental Impact Assessment (EIA) is a process used to identify and evaluate the likely environmental effects of a proposed project before major decisions are made. It helps decision-makers consider environmental protection along with development needs.

### **Objectives of EIA**

- To identify possible environmental impacts.
- To protect air, water, soil, plants and animals.
- To study possible risks to human health.
- To suggest ways to reduce harmful impacts.
- To improve project planning and decision-making.
- To encourage sustainable development.

### **Steps in EIA**

#### **1. Screening**

Determines whether a project requires an environmental assessment under the applicable rules.

#### **2. Scoping**

Identifies the main environmental issues that need to be studied.

#### **3. Baseline study**

Collects information about existing environmental conditions, such as air quality, water quality, land and wildlife.

#### **4. Impact prediction**

Estimates the likely positive and negative effects of the proposed project.

#### **5. Mitigation measures**

Suggests ways to prevent, reduce or manage harmful environmental effects.

#### **6. Preparation of the EIA report**

Presents the findings, predicted impacts and proposed protective measures.

## **7. Public consultation and appraisal**

Where required, concerns from affected people and expert assessments are considered.

## **8. Decision and monitoring**

The competent authority makes a decision according to the applicable process. If the project proceeds, environmental conditions and impacts may be monitored.

### **Example**

Before constructing a large dam, an EIA may study its effects on forests, wildlife, nearby villages, water resources and people who may need to relocate.

### **Conclusion**

EIA helps identify environmental problems before a project begins. It supports better planning, reduces harmful impacts and promotes environmentally responsible development.

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These questions and answers cover the main Unit IV topics in your syllabus. Learn the definitions and key points first, then practise writing the descriptive answers with headings and examples.