

Social Studies

(Geography)

Chapter 2: Forest and Wildlife Resources



Forest and Wildlife Resources

Forests are an important resource for any country. They not only provide a habitat to various organisms but are also the primary producers of all resources on which all the other living beings depend.

Flora and Fauna in India

India is known for its rich biodiversity. The term 'biodiversity' is used to describe various life forms which are found on the Earth. This includes flora, fauna and various ecosystems in which species live or depend on one another.

Because of deforestation, the demand for hides and horns of animals and for medicinal plants, commercialisation etc., many species of plants and animals are on the verge of extinction at present. According to their present numbers, various species of plants and animals can be categorised into the following divisions:

Normal Species: Those species whose numbers are considered normal for their survival are known as normal species. Some examples are sal, pine, rodents and cattle.

Extinct Species: Extinct species are those species of plants and animals which cannot be found in the wild or in captivity in areas where they may occur. For example, the cheetah in India and the dodo bird in the world have become extinct.

Endangered Species: Species which are facing a grave threat to their lives and are in danger of becoming extinct are known as endangered species. Black buck and Indian rhino are examples of such species.

Vulnerable Species: These species can become endangered if positive steps are not taken to improve their numbers. Desert fox and Asiatic elephants are examples of such species.

Rare Species: Species which are very uncommon or scarce in numbers are called rare species. They can become vulnerable or endangered if their numbers continue to decline. Some examples of this species are wild Asiatic buffalo, hornbill and desert fox.

Endemic Species: These kinds of species are only found at a particular region, range or location in the world. Andaman wild pig and Nicobar pigeon are examples of such species.

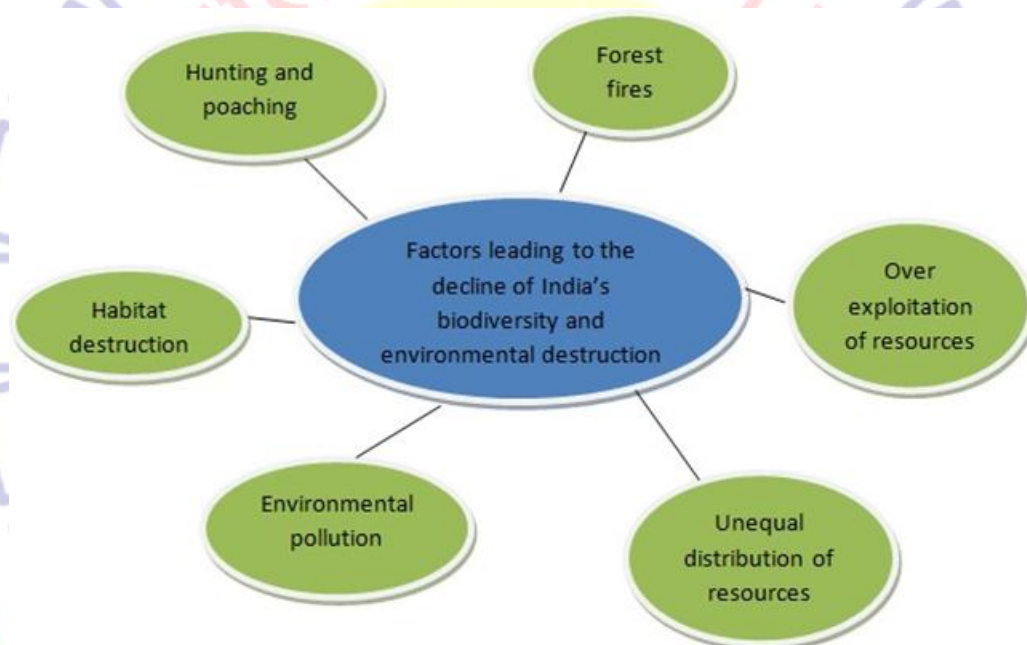
Factors Leading to the Depletion of Flora and Fauna

Factors which have contributed to the decline in various species of plants and animals:

- The Indian forests were greatly damaged during the colonial period. The British brought many areas under cultivation to earn revenues. The expansion of railways led to the destruction of huge chunks of forests. Reckless mining and commercial forestry have further led to the destruction of forests.
- In the post-independence period, the expansion of cultivation continued. This also led to

the destruction of forests and consequently the depletion of various species.

- Many river valley projects have resulted in the loss of forest lands. For example, the Narmada Sagar Project in Madhya Pradesh has resulted in the reduction of forest cover of the region.
- Uncontrolled mining has resulted in deforestation. Mining not only disturbs the habitat of many species but also blocks the migration route of several animals. For example, dolomite mining has threatened the tigers in the Buxa Tiger Reserve in West Bengal.
- According to many environmentalists, the collection of fuel wood and the grazing of animals have also depleted the forest ecosystems.



Conservation of Forest and Wildlife in India

- Conservation is vital since it will help us to protect our environment and protect our ecosystem which in turn helps to preserve the genetic diversity that the ecosystem has.
- The Indian Wildlife (Protection) Act was implemented in 1972, which made various provisions for protecting habitats.



Rhino and deer in Kaziranga National Park

- The central government also announced several projects for protecting specific animals, which were gravely threatened, including the tiger, the one horned rhinoceros, the Kashmir stag or hangul, three types of crocodiles – fresh water crocodile, saltwater crocodile and the Gharial are some of the animals. Under the Wildlife Act of 1980 and 1986, several hundred butterflies, moths, beetles, and one dragonfly have been added to the list of protected species.
- The government has also provided partial or full legal protection to animals such as Indian elephants, black buck, snow leopard etc. to protect them from extinction.

Types of Forests in India

Forests in India are controlled by the Indian Forest Department, which has divided forests into

- **Reserved Forests:** In India, more than half of the total forest land has been declared as reserved forests.
- **Protected Forests:** Protected forests are protected from any further destruction of forest cover.
- **Unclassed Forests:** This class of forests include the forests and wetlands which are owned by the Government, privately or jointly by communities.

Reserved and protected forests are also known as permanent forest estates. Madhya Pradesh has the largest area under permanent forests.

Biodiversity is the variety of life found on the Earth. An ecosystem which has rich biodiversity has several species of plants and animals which are closely connected to each other through biotic and abiotic factors.

Biodiversity helps in boosting the productivity of the ecosystems in which each species plays an important role. For example, a large number of plant species results in greater varieties of crops. Similarly, many microorganisms play an important role in biodiversity. They fertilise the soil and play a role in recycling of many minerals (e.g. carbon) in the environment. This helps in sustaining and improving human lives.

Conservation of Forests and Wildlife in India


Efforts of the Government towards Protecting Forests and Wildlife in India

- In 1972, the Indian Wildlife Act was passed. In this Act, various provisions were made to preserve the endangered species of animals by banning hunting, restricting trade in wildlife and providing legal protection to wildlife habitats.
- As a result, many wildlife sanctuaries and national parks were established by the state and the Central Government to preserve the habitat of many wild animals.

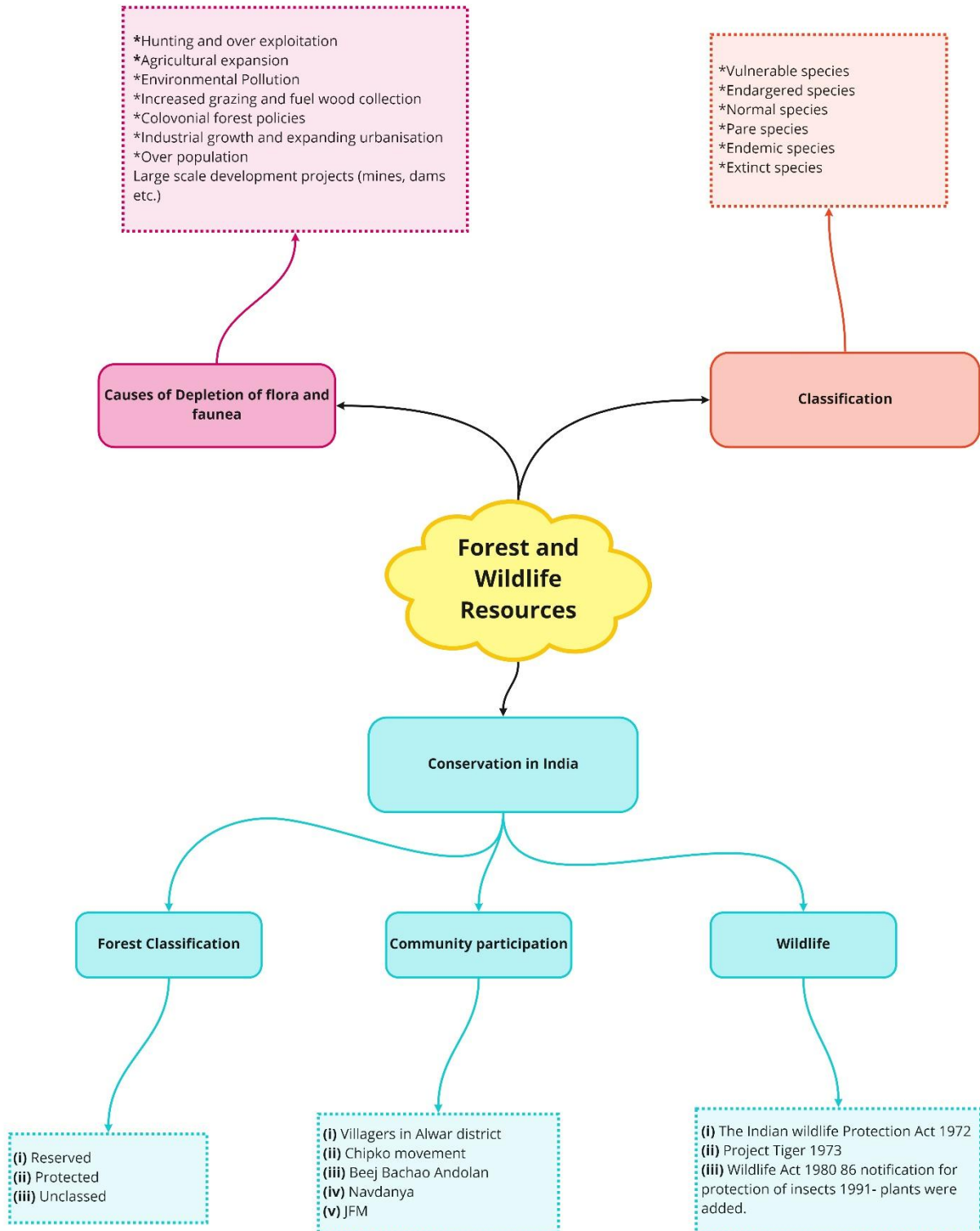


- Many animals such as tigers, one-horned rhinoceros, saltwater crocodile, black buck and snow leopard have been give protection against hunting and trading in the country.
- Many conservation projects of the Government are now focusing on the preservation of biodiversity of the country rather than just protecting certain species of plants and animals.

Role of Communities towards Conservation

- In India, apart from the Government and Forest Departments, various communities have played an important role in conserving and protecting forests. The Chipko Movement was an example of communities coming together to save forests from the reckless felling by private contractors.
- 
- Sacred groves are an example of the conservation of forests by tribal and village communities. Many forest areas are considered sacred by these communities, and any kind of activity or human interference in these patches of forests is banned.
 - Similarly, villagers of the five villages in the Alwar district have declared 1,200 hectares of forests protected and do not allow any kind of interference, hunting or poaching in the forest area.
 - In Sariska Tiger Reserve, Rajasthan, villagers have fought against mining by citing the Wildlife Protection Act.
 - Mahua is worshipped by the the Mundas and the Santhal of Chota Nagpur region while tamarind and mango are worshipped by the tribes of Odisha and Bihar during weddings. In Indian Hindu society, peepal trees is considered sacred.
 - Blackbuck, peacocks and nilgai are seen as an integral part of the Bishnoi villages in Rajasthan and aren't harmed or killed.
 - Beej Bachao Andolan in Tehri and Navdanya has promoted people to stop using synthetic chemicals as sufficient crop harvest can be produced even without the use of chemical fertilizers.
 - **Joint Forest Management** is a programme in India which involves local communities in the management of forest lands. In this programme, local village communities undertake management of degraded parts of forests which are managed by the Forest Department. In return for their help, the communities are allowed to have a share in non-timber and timber products which are harvested by the joint efforts of the local communities and the Forest Departments. Odisha was the first state in India to pass the Joint Forest Management programme.

Class : 10th Geography
Chapter-2 : Forest and Wildlife Resources



Important Questions

Multiple Choice questions-

1. Which one of the following is not considered a sacred tree in India [CBSE 2011]

- (a) Peepal
- (b) Neem
- (c) Banyan
- (d) Mango

2. Which one of the following is an example of endemic species? [CBSE 2011]

- (a) Nicobar Pigeon
- (b) Asiatic Buffalo
- (c) Horn Bill
- (d) Black buck

3. Periyar Tiger reserve is located in

- (a) Rajasthan
- (b) Uttar Pradesh
- (c) Tamil Nadu
- (d) Kerala

4. The Buxa Tiger Reserve in West Bengal has been threatened about the loss of habitat of many species due to

- (a) Industrial development
- (b) Agricultural expansion
- (c) Port activities
- (d) Mining

5. Which one of the following statements is not true with regard to depletion of flora and fauna?

- (a) Land required for housing
- (b) Agricultural expansion
- (c) Mining activities
- (d) Shifting agriculture

6. What was the aim of Chipko movement? [CBSE 2011]

- (a) Human rights
- (b) Political rights
- (c) Agricultural expansion

(d) Forest conservation

7. Most of the forests in the North eastern states belong to the category of _____ .

- (a) Wastelands
- (b) Protected forests
- (c) Unclassed forests
- (d) Mangroves

8. The Mundas and Santhals of Chhota Nagpur region worship which one of the following trees?

- (a) Mahua
- (b) Mango
- (c) Peepal
- (d) Tamarind

9. Which of these statements is not a valid reason for the depletion of flora and fauna? (Textbook)

- (a) Agricultural expansion
- (b) Large-scale development projects
- (c) Grazing and fuel wood collection
- (d) Rapid industrialisation and urbanisation

10. Which of the following conservation strategies do not directly involve community participation? (Textbook)

- (a) Joint forest management
- (b) Beej Bachao Andolan
- (c) Chipko Movement
- (d) Demarcation of Wildlife Sanctuaries

11. The species which are in danger of extinction are called:

- (a) Vulnerable species
- (b) Rare species
- (c) Endangered species
- (d) Normal species

12. The forest cover in our country has recently increased due to:

- (a) Increase in natural forest growth
- (b) Increase in net sown area
- (c) Plantation by different agencies

(d) None of the above

13. The species whose population has declined to a level from where it is likely to move into the endangered category in the near future if the negative factors continue to operate are called:

- (a) Endemic species
- (b) Extinct species
- (c) Vulnerable species
- (d) Normal species

14. The Himalayan brown bear is an example of:

- (a) Vulnerable species
- (b) Rare species
- (c) Endemic species
- (d) Extinct species

15. Substantial parts of the tribal belts in north-eastern India, have been deforested by:

- (a) Shifting cultivation
- (b) Mining
- (c) Infrastructure development
- (d) None of the above

Very Short-

1. Name any four Normal Species.
2. Name any four Endangered Species
3. Name any four Vulnerable Species
4. Name any four Rare Species
5. Name any four Endemic Species.
6. Name any four Extinct Species.
7. When and in which state was the program of joint forest management first adopted?
8. Which species of India's flora and fauna are on the verge of extinction?
9. Which state has the largest area under permanent forests?
10. What is the share of India in the total number of species in the world?

Short Questions-

1. How does deforestation affect eco system? Give two reasons.

2. Depletion of forests leads to disappearance of wild life as well as many wild varieties of plants. How is Afforestation helpful in maintaining ecological balance?
3. What is a National Park? Name any two national parks of India?
4. What is Wildlife Sanctuary? How is it different from National Park?
5. What are Biosphere Reserves?
6. Why is the Himalayan Yew in trouble?
7. What steps have been adopted under the Indian Wildlife Act to protect endangered species of animals?
8. What are the three types of forests as identified by Forest Department?
9. Large scale development projects have significantly to the loss of forests. Give reasons to support this statement.
10. How mining is responsible for the loss of forests. Give reasons.

Long Questions-

1. What were the views of foresters and environmentalists regarding the degrading factors behind the depletion of forest resources?
2. Write down the features of JFM.
3. What steps must be taken to preserve the natural vegetation?
4. What are the steps taken by Government to conserve flora and fauna of the country?
5. Highlight the trees and animals which are worshiped by Indian societies in different parts of India?
6. Write a short note on Beej Bachao Andolan in TehriNavdanya.
7. Mention the negative factors which since pre-independence to present period have contributed significantly to the fearful depletion of flora and fauna in India.
8. The destruction of forests and wildlife is not just a biological issue. The biological loss is strongly correlated with the loss of cultural diversity. Elucidate.

Assertion and Reason Questions-

1. In these questions, a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.
 - a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
 - b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
 - c) Assertion is correct statement, but reason is wrong statement.

d) Both assertion and reason are wrong statements.

Assertion (A): Forests play a key role in the ecological system.

Reason (R): Forests are the primary producers on which all other living beings depend.

2. In these questions, a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

- Assertion and reason both are correct statements and reason is correct explanation for assertion.
- Assertion and reason both are correct statements but reason is not correct explanation for assertion.
- Assertion is correct statement but reason is wrong statement.
- Both assertion and reason are wrong statements.

Assertion (A): Neglect of our environment has led to the destruction and extinction of many species of animals and plant life.

Reason (R): Decreasing Forest cover area is a major reason of destruction of species.

MCQ Answers-

- Answer: b
- Answer: a
- Answer: d
- Answer: d
- Answer: a
- Answer: d
- Answer: c
- Answer: a
- Answer: d
- Answer: d
- Answer: c
- Answer: c
- Answer: c
- Answer: b
- Answer: a

Very Short Answers-

- Ans. Cattle, Sal, Pine and Rodent

2. Ans. Black Buck, crocodile, Indian Ass, Indian Rhino
3. Ans. Blue Sheep, Asiatic Elephant, Gangetic Dolphin.
4. Ans. Himalayan Brown Bear, Wild Asiatic Buffalo, desert Fox and Hornbill.
5. Ans. Andaman Teal, Nicobar Pigeon, Andaman Wild Pig, Mithun in Arunachal Pradesh.
6. Ans. . Asiatic Cheetah, Pink head Duck
7. Ans. . In 1988, in Odisha the program of joint forest management was first adopted.
8. Ans. Among the animals, the cheetah, Pink Headed Duck, Mountain Quail, Forest Spotted Owl etc. And among the plants, wild variety of Mahua (Madhuca Insignies), a wild species of grass (Hepaneuron) is on the threatened list.
9. Ans. . Madhya Pradesh
10. Ans. 8 per cent

Short Answers-

1. Ans.

1. Deforestation or cutting of trees affecting the eco system in many ways. It is responsible for climatic change.
2. It accelerates soil erosion and affects underground flow of water deforestation.

2. Ans.

1. Afforestation plays a major role in enhancing the quality of environment. They modify local climate. They influence air temperature and reduce wind forces.
2. Afforestation helps in controlling soil erosion.
3. It provides natural environment for wild life.
4. Afforestation helps in enhancing the quality of rainfall.

3. Ans.

1. A national Park is relatively a large area where several ecosystems exist freely and are not disturbed materially by human exploitation and occupation, and where plants and animal species, aesthetic sites and habitats are of special scientific, educational and recreational interest.
2. There are 89 National parks in the country. The Corbett national Park in Uttarakhand.
3. Dudwa National Park in U.P.

4. Ans.

1. A wildlife sanctuary is like a national park but the difference is that in a sanctuary certain types of activities might be permitted. Livestock grazing and collection of forest produce, for instance, may be allowed.
2. In a national park, conservation of species is mostly left to nature, with the least human activities, but in a sanctuary conservation of species is affected by manipulative management.

5. Ans.

1. Biosphere Reserves are multipurpose protected areas created to deal with the issue of conservation of bio-diversity and sustainable use.
2. In a biosphere reserves, local communities, management agencies, scientists, cultural groups and non government agencies work together to manage and substantially develop the area resources.
3. Here even agricultural activities are allowed to the local communities and bonafide employment is provided to them. Tourism is allowed to boost revenue.

6. Ans.

1. The Himalayan Yew, locally known as the Thuner is a medicinal plant. Its biological name is *Taxus wallachiana*.
2. It is found in certain parts of Himachal Pradesh and Arunachal Pradesh.
3. This wonder plant has a chemical compound taxol which is extracted from its twigs, roots, bark and needles. This chemical is used to manufacture a drug which is used to manufacture a drug which is the largest anti-cancer drug in the world today
4. Over the past 10 years this plant has been over-exploited resulting in drying up of trees which could have survived and served their use for more years.

7. Ans.

1. In response to the conservationist's demand for national wildlife protection program in 1960s and 1970s, the Indian Wildlife Protection Act was implemented in 1972.
2. It contained many provisions for protecting habitats. The main focus was on protecting the remaining population of certain endangered species.
3. For this to be accomplished hunting was banned, legal protection was given to their habitats and trade in wildlife was restricted.
4. National parks and wildlife sanctuaries was setup.

8. Ans.

1. Reserved Forests: These are the forests which are permanently earmarked for production of either timber or other forest produce.

2. Protected Forests: As the name indicates these forests are protected from further depletion.
3. Unclassed Forests: This consists of inaccessible forests or unoccupied wastes.

9. Ans.

1. Large-scale development projects have also contributed significantly to the loss of forests.
2. Since 1951, over 5,000 sq km of forest was cleared for river valley projects.
3. Clearing of forests is still continuing with projects like the Narmada Sagar Project in Madhya Pradesh, which would inundate 40,000 hectares of forests.

10 Ans.

1. Mining is important factor behind deforestation.
2. The Buxa Tiger Reserve in west Bengal is seriously threatened by the ongoing dolomite mining.
3. It has disturbed the natural habitat of many species and blocked the migration route of several others, including the great Indian Elephant.

Long Answers-**1. Ans.**

1. Many foresters and environmentalists hold the view that the greatest degrading factors behind the depletion of forests resources are grazing and fuel wood collection.
2. Though there may be some substance in their argument, yet, the fact remain that a substantial part of the fodder demand is met by lopping rather than by felling entire trees.
3. The forest ecosystems are repositories of some of the country's most valuable forest products, minerals and other resources that meet the demands of the rapidly expanding industrial-urban economy.
4. These protected areas, thus mean different things to different people, and therein lays the fertile ground for conflicts.

2. Ans.

1. In India Joint Forest Management program furnishes a good example for involving local communities in the management and restoration of degraded forests.
2. The program has been in formal existence since 1988 when the state of Orissa passed the first resolution for joint forest management.
3. JFM depends on the formation of local (village) institutions that undertake

protection activities mostly on degraded forest land managed by the forest department.

4. In return, the members of these communities are entitled to intermediary benefits like non timber forest produces and share in the timber harvested by successful protection.

3. Ans.

1. Cutting of the trees in the forests must be stopped. The government has taken adequate steps in this direction. Forest department has been created for this purpose. Laws have been implemented to punish the persons who are found guilty of cutting of trees. Awareness among the people is more important. Without this awareness result cannot be satisfactory.
2. The people must cooperate to check the feeling of trees. Their active participation is most important in this regard. Many persons have must come forward for this task.
3. Necessary wood for industrial purposes and for other activities must be acquired in a well planned manner, so that industrial growth and environment protection both can be achieved.
4. Wherever the trees have been cut for any reason, new saplings of trees must be planted to maintain the ecological balance.
5. Festivals like Vanmahotsava should be celebrated everywhere. It would help in growing the awareness.

4. Ans.

1. To protect flora and fauna, the Indian wildlife protection Act was implemented in 1972, with various provisions for protecting habitats.
2. An all-India list of protected species was also published. The thrust of the program was towards protecting the remaining population of certain endangered species by banning hunting, giving legal protection to their habitats and restricting trade in wildlife.
3. Central and many state governments established national parks and wildlife sanctuaries.
4. The central government announced several projects for protecting specific animals, which were gravely threatened, including the tiger, the one horned rhinoceros, the Kashmir stag or hangul, three types of crocodile-freshwater crocodile, saltwater crocodile and the Gharial, the Asiatic lion, and others.
5. Most recently, the Indian elephant, black buck, the great Indian bustard and the snow leopard, etc. have been full or partial legal protection against hunting and trade throughout India.

5. Ans.

1. The Mundas and the Santhals of Chhota Nagpur region worship the mahua and kadamba tree.
2. The tribals of Orissa and Bihar worship the tamarind and mango trees during auspicious occasions such as weddings.
3. The peepal and banyan tree are considered sacred all over the country.
4. Certain animals such as macaques and langurs are treated as a part of temple devotees.
5. In Rajasthan nilgai, peacock and chinkara are an important part of the community and no one can think of harming them

6. Ans.

1. Beej Bachao Andolan in Tehri and Navdanya-Save the seed movement searches, reintroduces, collects, tests, distributes and popularizes every indigenous variety of mountain crops available.
2. It has also been able to successfully revive the free exchange of seeds within the community and has proved to be a lifeline of traditional mountain agriculture.
3. It advocates the discontinuation of the use of chemical dependent seeds and synthetic chemicals.
4. These measures, they argue, are also economically viable as diversified crop production in adequate quantities have been achieved.

7. Ans.

1. Colonial forest policies were responsible for depletion of forests, as enrichment plantation which promoted a few favoured species eliminated the others.
2. Between 1951 and 1980 large areas of forests were transformed into agricultural land. It is estimated that more than 26,200 sq. km of forest area was used for this purpose.
3. Expansion of railways, commercial and scientific forestry, mining activities and agriculture have contributed toward depletion of flora and fauna.
4. Agricultural practices such as slash and burn popular in the tribal belts have also contributed towards depletion of flora and fauna.
5. Development projects such as the Narmada Sagar Project in Madhya Pradesh have also led to the loss of forests.

8. Ans.

1. Deforestation and destruction of wildlife is not just a simple problem. It has other related issues. This biological loss correlates highly with the loss of cultural diversity.

2. These losses have had a deep and lasting impact on the forest dependent communities. These indigenous communities are directly dependent on forests for their food, medicines, spirituality and other needs. Due to deforestation these communities have become marginalized and impoverished.
3. Here again women are more affected than man. In most societies women shoulder the responsibilities of collection of basic substance needs such as fuel, fodder, water, etc.
4. Women faces sever drudgery if their resources get depleted or scare and their health deteriorates as they have to traverse long distances to collect these resources.
5. Deforestation also leads to floods and drought which hits the economically backward strata very hard. This includes more poverty.

Assertion and Reason Answers-

1. a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

Explanation: The plants, animals and micro-organisms re-create the quality of the air we breathe, the water we drink and the soil that produces our food without which we cannot survive. Thus, we are very much dependent on this system for our own existence.

2. a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

Explanation: Vanishing forests are the major reason for the extinction of species of animals and plant life. Thus, neglecting our environment has led to dire consequences.