

Natural Vegetation and Wildlife

Fastrack Revision

- ▶ Natural vegetation refers to a plant community which has grown naturally without human aid and has been left undisturbed by humans for a long time. It is also called **virgin vegetation**. Both natural vegetation and wildlife play an important role in sustaining the ecological balance and the economy of a country.

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There are about 15,000 flowering plants in India, which account for 6% of the world's total count.

- ▶ India is one of the twelve mega biodiversity countries of the world. India holds tenth position in the world and fourth position in Asia, in terms of plant diversity, having a total of 47,000 plant species.
- ▶ India possesses approximately 90,000 species of animals as well as rich variety of fish in its fresh and marine waters.
- ▶ The term **Flora** is used to denote plants of a particular region or period. The species of animals are referred to as **fauna**.
- ▶ The vegetation corresponding to different temperature levels is given in the table below:

Vegetation Zone	Mean Annual Average Temp. (In °C)
Tropical	Above 24°C
Sub-tropical	17°C to 24°C
Temperate	7°C to 17°C
Alpine	Below 7°C

- ▶ All the plants and animals in an area are interdependent and interrelated to each other in their physical environment, thus forming an ecosystem.
- ▶ Human beings are also an integral part of the ecosystem. They utilise the vegetation and wildlife.
- ▶ A very large ecosystem on land having distinct types of vegetation and animal life is called a biome.
- ▶ The following major types of vegetation are identified in our country:
 - **Tropical Evergreen Forests:** They are found in areas which receive heavy rainfall, i.e., of more than 200 cm and have a short dry season. They are mostly found in the areas of the Western Ghats and the island groups of Lakshadweep, and Andaman & Nicobar, also in the upper parts of Assam and Tamil Nadu coast. Some commercially relevant trees of this forest are ebony, mahogany, rosewood, rubber and cinchona. The common animals found here are elephants, monkeys, deer and lemur.

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On the slopes of the Himalayas and the hills of the Peninsula above the height of 915 metres, the fall in the temperature affects the types of vegetation and its growth, and changes it from tropical to sub-tropical temperate and alpine vegetation.

- ▶ **Tropical Deciduous Forests:** These are the most widespread forests of India and are also referred to as 'monsoon forests.' On the basis of the availability of water, these forests can be further divided as follows:
 - **Moist Deciduous Forests:** These forests are found in areas receiving rainfall between 200 to 100 cm. These forests are mainly found in North-eastern states, along the foothills of the Himalayas, Jharkhand, West Odisha, Chhattisgarh and on the Eastern slopes of the Western Ghats. Teak, bamboo, sal, shisham, sandalwood, khair, kusum, arjun and mulberry are the commercially important trees found in these forests.
 - **Dry Deciduous Forests:** These forests are found in areas receiving rainfall between 100 cm to 70 cm. These forests are found in the rainier parts of peninsular plateau and plains of Bihar and Uttar Pradesh. Teak, sal, peepal and neem are important trees of this forest.
- ▶ **The Thorn Forests and Scrubs:** In regions with less than 70 cm of rainfall, the natural vegetation consists of thorny trees and bushes. This type of vegetation is found in the North-western part of the country, including semi-arid areas of Gujarat, Uttar Pradesh, Madhya Pradesh, Haryana, and Rajasthan. Acacias, palms, euphorbias and cacti are the main plant species here.
- ▶ **Montane Forests:** In mountainous areas, the decrease in temperature with increasing altitude leads to the corresponding change in natural vegetation. Because of this there is a succession of natural vegetation in the following manner:
 - The **wet temperate type of forests** are found between the height of 1,000 metres to 2,000 metres.
 - The **temperate type of forests** are found between the height of 1,500 metres to 3,000 metres.

At still higher elevations, **temperate grasslands** are common.

At altitudes of above 3,600 metres, **alpine vegetation** is found.

- At still higher elevations **alpine grasslands** are found.
- At higher altitudes, mosses and lichens form part of **tundra vegetation**.
- **Mangrove Forests:** The mangrove tidal forests are found in the areas of coasts influenced by tides. The deltas of the Ganga, the Mahanadi, the Godavari, the Krishna, and the Kaveri are covered by mangrove forests.

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 There are about 15,000 flowering plants in India, which account for 6% of the world's total count.

- India has approximately 90,000 animal species and 2,000 species of birds. They constitute 13% of the world's total.

There are about 2,546 species of fish, which account for nearly 12% of the world's stock. It also shares 5-8% of the world's amphibians, reptiles and mammals.

- About 1,300 plant species are endangered and 20 species are extinct. Some animal species are also endangered. Hunting by greedy hunters for commercial purposes, pollution due to chemical and industrial waste, acid deposits, etc., introduction of alien species, and reckless cutting of forests has led to their extinction.
- India possesses 14 biosphere reserves for the protection of flora and fauna.
- The Sundarbans of West Bengal, Nanda Devi in Uttarakhand, the Gulf of Mannar in Tamil Nadu, and the Nilgiris have been included in the World Network of Biosphere Reserves.
- 103 national parks, 563 wildlife sanctuaries and zoological gardens have been set up to take care of the natural heritage.



Practice Exercise



Multiple Choice Questions

Q 1. To which of the following categories does India belong according to natural vegetation and wildlife?

- a. A country lacking in biodiversity cover
- b. One of the twelve mega biodiversity countries of the world
- c. The country with the greatest forest cover
- d. None of the above

Q 2. Which is not included in the group of non-flowering plants?

- a. Orchids
- b. Algae
- c. Fungi
- d. None of these

Q 3. Which type of vegetation does not belong to the category of natural vegetation?

- a. Horticulture
- b. Forests
- c. Mangroves
- d. All of these

Q 4. Which term is used for the original plant cover of an area which has grown naturally?

- a. Garden
- b. Agriculture
- c. Virgin Vegetation
- d. Indigenous species

Q 5. What is the position of India in the world with regard to plant diversity?

- a. First
- b. Tenth
- c. Twelfth
- d. None of these

Q 6. Which term is used for virgin vegetation, which have come from outside India?

- a. Indigenous plants
- b. Endemic species
- c. Exotic plants
- d. None of the above

Q 7. Which term is used for virgin vegetation which is purely Indian in origin?

- a. Normal species
- b. Endemic species
- c. Exotic species
- d. None of the above

Q 8. refers to a plant community which has grown naturally without any human aid and has been left undisturbed by human for a long time.

- a. Forest
- b. Natural vegetation
- c. National Park
- d. None of the above

Q 9. Which term is used to denote animal species of a particular region or period?

- a. Fauna
- b. Ferns
- c. Flora
- d. None of these

Q 10. Which of the following terms is being used to denote plants of a particular region or period?

- a. Fauna
- b. Diversity
- c. Flora
- d. Vegetation

Q 11. Which type of forests are restricted to heavy rainfall areas of the Western Ghats and the island groups of Lakshadweep, Andaman and Nicobar?

- a. Tropical Evergreen forests
- b. Tropical Deciduous forests
- c. Montane forests
- d. Mangrove forests

Q 12. Which type of vegetation is common in fertile, level lands?

- a. Forests
- b. Cultivated crops
- c. Grasslands
- d. None of these

The trees of which of the following forests reach the height up to 60 metres or even above?

- Montane forests
- Mangrove forests
- Tropical deciduous forests
- Tropical evergreen forests

Q 14. Which type of forest is also known as monsoon forest and spread over the region receiving rainfall between 200 cm and 70 cm?

- Tropical deciduous forests
- Tropical evergreen forests
- Tropical thorn forests and scrubs
- Mangrove forests

Q 15. Some of the commercially important trees like ebony, mahogany, rosewood, rubber and cinchona are found in which of the following forests?

- Tropical evergreen forests
- Montane forests
- Mangrove forests
- Tropical deciduous forests

Q 16. Which type of forests are restricted to heavy rainfall areas of the Western Ghats and the island group of Lakshadweep and Andaman and Nicobar?

- Tropical deciduous forests
- Tropical evergreen forests
- Mangrove forests
- Montane forests

Q 17. To which one of the following types of vegetation does rubber belong to?

- Tundra
- Tidal
- Himalayan
- Tropical evergreen

Q 18. In which one of the following regions the yak, shaggy-horned wild ox and the Tibetan antelope are found?

- Tibet
- Uttarakhand
- Himachal Pradesh
- Ladakh

Q 19. Cinchona trees are found in the areas of rainfall more than:

- 100 cm
- 50 cm
- 70 cm
- less than 50 cm

Q 20. Which among the following animals is a type of deer found in India?

- Chousingha
- Gazel
- Kashmir Stag
- All of these

Q 21. In which of the following states is the Simlipal bio-reserve located?

- Punjab
- Delhi
- Odisha
- West Bengal

Q 22. Yak is found in India in:

- Assam
- Ladakh
- Meghalaya
- Punjab

Q 23. One-horned rhinoceros is found in the jungles of:

- Jharkhand and Odisha
- Chhattisgarh and Madhya Pradesh
- Assam and West Bengal
- Uttar Pradesh and Haryana

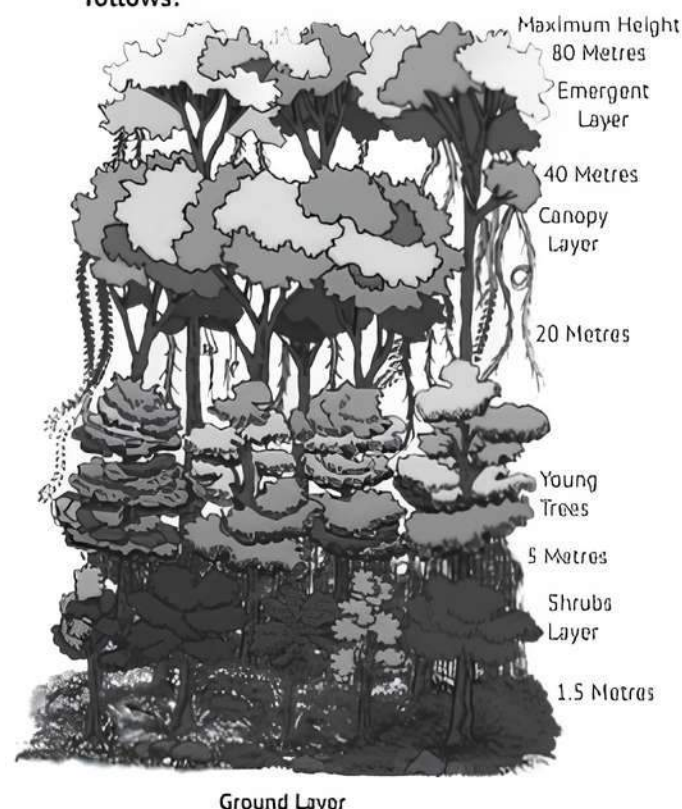
Q 24. is a rare animal found in montane forests.

- Wild sheep
- Yak
- Red panda
- Tiger

Q 25. What kind of forests are found in the areas with less than 70 cm annual rainfall?

- Tropical evergreen forests
- Tropical moist deciduous forests
- Thorn and scrub type of forests
- Mangrove forests

Q 26. Study the picture and answer the question that follows:



Identify the forest being depicted in the above picture:

- Tropical evergreen forests
- Montane forests
- Tropical deciduous forests
- Mangrove forests

Q 27. Match the following:

Types of Forest	Trees Found
1. Tropical evergreen forests	A. Acacia and Palm
2. Thorn forests	B. Sundari and Keora
3. Moist deciduous forests	C. Ebony and Mahogany
4. Mangrove forests	D. Teak and Bamboo

1	2	3	4	1	2	3	4
a. C	A	D	B	b. C	A	B	D
c. A	C	D	B	d. D	B	A	C

_____bett National Park in India is situated in:

- | | |
|------------|----------------|
| Assam | b. Jharkhand |
| Tamil Nadu | d. Uttarakhand |

Q 29. What is the term used for a species if it is introduced to another environment?

- | | |
|-----------------------|--------------------|
| a. Exotic species | b. Endemic species |
| c. Endangered species | d. Extinct species |

Q 30. In which of the following states is the Simlipal bio-reserve located?

- | | |
|-----------|----------------|
| a. Punjab | b. Odisha |
| c. Delhi | d. West Bengal |

Q 31. Which one of the following bio-reserves of India is not included in the world network of bio-reserve?

- | | |
|------------|-------------------|
| a. Manas | b. Gulf of Mannar |
| c. Nilgiri | d. Nanda Devi |

Q 32. Why is the Southern slopes in Himalayan region covered with thick vegetation?

- a. On account of more exposure to sunlight
b. On account of more precipitation
c. On account of less exposure to colder winds
d. All of the above

Q 33. Identify the incorrect statement regarding tropical evergreen forests.

- a. They are found in areas where the annual rainfall is over 200 cm with a short dry season.
b. These appear green throughout the year as the trees shed their leaves at different times.
c. Teak, sal, peepal and neem trees grow in these areas.
d. The vegetation occurred here is multilayered in structure.

Q 34. Identify the type of vegetation with the following clues:

- (i) These are found in coastal delta areas influenced by sea tides.
(ii) Palm, coconut, keora and agar trees are found here.
(iii) Animals include the Royal Bengal Tigers, snakes, turtles, *gharial*s and crocodiles.
a. Montane forests
b. Mangrove forests
c. Tropical deciduous forests
d. Tropical thorn forests

Q 35. Read the statements carefully and choose the correct option:

Statement (I): The tropical rainforests are mostly evergreen.

Statement (II): The regions of tropical rainforests get abundant rainfall and have low temperatures throughout the region.

- a. Statement (I) is correct and (II) is incorrect.
b. Statement (I) is incorrect and (II) is correct.
c. Both statements are incorrect.
d. Both statements are correct.

Q 36. Read the statements carefully and choose the correct option:

Statement (I): The mangrove tide forests are found in the area of coasts influenced by tides.

Statement (II): The deltas of the Ganga, the Mahanadi, the Godavari, the Krishna and the Kaveri are covered by mangrove forests.

- a. Statement (I) is correct and (II) is incorrect.
b. Statement (I) is incorrect and (II) is correct.
c. Both statements are incorrect.
d. Both statements are correct.



Assertion & Reason Type Questions

Directions (Q.Nos. 37-40): In the following questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:

- a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 37. Assertion (A): Human beings are also an integral part of the ecosystem.

Reason (R): A very large ecosystem on land having distinct types of vegetation and animals life is called a biome.

Q 38. Assertion (A): Forests are renewable resources and play a major role in enhancing the quality of environment.

Reason (R): Forests modify climate, control soil erosion, regulate stream flow and support a variety of industries.

Q 39. Assertion (A): Western slopes of the Western Ghats are covered with thick forests and not the Eastern slopes.

Reason (R): Western slopes of the Western Ghats receive more than 300 cm of rainfall while the Eastern slopes fall in the rain shadow area that receive only 50-60 cms of rainfall.

Q 40. Assertion (A): The flora and fauna found in India is diverse and rich.

Reason (R): The different regions of the country have different soil types, different types of climate with great variations in humidity and temperature across the country.

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Source 1

Our country, India, is one of the 12 mega bio-diversity countries of the world. With about 47,000 plant species India occupies tenth place in the world and fourth in Asia in plant diversity. There are about 15,000 flowering plants in India, which account for 6 per cent in the world's total number of flowering plants. The country has many non-flowering plants, such as ferns, algae and fungi. India also has approximately 90,000 species of animals, as well as, a rich variety of fish in its fresh and marine waters.

Natural vegetation refers to a plant community, which has grown naturally without human aid and has been left undisturbed by humans for a long time. This is termed as a **virgin vegetation**. Thus, cultivated crops and fruits orchards form part of vegetation but not natural vegetation.

- Q 5. How much natural is the natural vegetation of India today? Given reason.

- Various new species of plants are raised in laboratories and they are planted to have better results.
- Human Interference is continuously increasing day by day which is deteriorating the quality of nature.
- Both a. and b. are the reasons.
- The greed of human being leads to over-utilisation of natural resources.

- Q 6. There are two statements marked as Assertion (A) and Reason (R). Read them and choose the correct option:**

Assertion (A): India is rich in bio-diversity.

Reason (R): India has many species of non-flowering plants.

- Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true, but Reason (R) is false.
- Assertion (A) is false, but Reason (R) is true.

1. (c) 2. (d) 3. (c) 4. (c) 5. (c) 6. (b)

Source 2

Read the source given below and answer the questions that follow by choosing the most appropriate option:

In regions with less than 70 cm of rainfall, the natural vegetation consists of thorny trees and bushes. This type of vegetation is found in the North-western part of the country, including semi-arid areas of Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Haryana. Acacias, palms, euphorbias and cacti are the main plant species. Trees are scattered and have long roots penetrating deep into the soil in order to get moisture. The stems are succulent to conserve water. Leaves are mostly thick and small to minimise evaporation. These forests give way to thorn forests and scrubs in arid areas.

In these forests, the common animals are rats, mice, rabbits, fox, wolf, tiger, lion, wild ass, horses and camels.

- Q 1. Where are thorn forests and scrubs commonly found?**
- a. Western slopes of Western Ghats
 - b. North-western part of the country
 - c. North-eastern states
 - d. Coastal delta areas

Which of the following is not a characteristic feature of these forests?

Trees are scattered and have long roots.

- b. The stems are succulent to conserve water.
- c. They spread over the region receiving rainfall between 200 cm and 70 cm.
- d. Leaves are mostly thick and small to minimise evaporation.

Q 3. Which of the following is the main plant species found in these forests?

- a. Acacias b. Bamboos
- c. Sandalwood d. Mulberry

Q 4. In which of the following states the thorn forests and scrubs are found?

- a. Gujarat b. Rajasthan
- c. Madhya Pradesh d. All of these

Q 5. What is the amount of rainfall received in these areas?

- a. Between 100 cm and 200 cm
- b. Between 70 cm and 100 cm
- c. Less than 70 cm
- d. Over 200 cm

Q 6. How much of the total forested areas of India are covered by tropical thorn forests?

- a. 10% b. 5% c. 20% d. 12%

Answers

1. (b) 2. (c) 3. (a) 4. (d) 5. (c) 6. (b)

Source 3

Read the source given below and answer the questions that follow:

In mountainous areas, the decrease in temperature with increasing altitude leads to the corresponding change in natural vegetation. As such, there is a succession of natural vegetation belts in the same order as we see from the tropical to the tundra region. The wet temperate type of forests are found between a height of 1,000 and 2,000 metres. Evergreen broad-leaf trees, such as oaks and chestnuts predominate. Between 1,500 and 3,000 metres, temperate forests containing coniferous trees, like pine, deodar, silver fir, spruce and cedar, are found. These forests cover mostly the southern slopes of the Himalayas, places having high altitude in Southern and North-East India. At higher elevations, temperate grasslands are common. At high altitudes, generally, more than 3,600 metres above the sea level, temperate forests and grasslands give way to the Alpine vegetation. Silver fir, junipers, pines and birches are the common trees of these forests.

Q 1. What is montane vegetation?

Ans. The vegetation found on high altitudes is known as montane vegetation where the decrease in temperature with increasing altitude leads to the corresponding change in natural vegetation.

Q 2. What type of forests are found between 1,500 and 3,000 metres of height?

Ans. Between 1,500 and 3,000 metres, temperate forests containing coniferous trees are found that cover mostly the Southern slope of the Himalayas.

Q 3. What are the common animals found in montane forests?

Ans. The common animals found in montane forests are the Kashmir stag, spotted deer, wild sheep, jack rabbit, Tibetan antelope, yak, snow leopard, squirrels, shaggy horn wild ibex, bear and rare red panda, sheep and goats with thick hair.



Very Short Answer Type Questions

Q 1. What does natural vegetation refer to?

Ans. Natural vegetation refers to a plant community which has grown naturally without human aid and has been left undisturbed by human beings for a long time.

Q 2. What are the three forms of natural vegetation?

Ans. The three forms of natural vegetation are:
(i) Forests (ii) Grass
(iii) Shrubs and bushes.

Q 3. What is an ecosystem?

Ans. The interdependence and interrelation of species of plants and animals in a given physical environment forms an ecosystem.

Q 4. What is a biome?

Ans. A very large ecosystem on land having distinct types of vegetation and animal life is called a biome.

Q 5. What is meant by 'virgin vegetation'?

Ans. Virgin vegetation refers to a plant community which has grown naturally without human aid and has been left undisturbed by humans for a long time.

Q 6. Name some of the commercially important trees that grow in the tropical evergreen rainforests.

Ans. Ebony, mahogany, rosewood, rubber and cinchona are the commercially important trees that grow in the tropical evergreen rainforests.

Q 7. Name one important tree each of the moist deciduous forests and the dry deciduous forests.

Ans. Moist Deciduous Forest— Teak
Dry Deciduous Forest— Sal

Q 8. Name the dominant type of forest found in India.

Ans. Tropical deciduous forests or monsoon forests are the dominant type of forests found in India.

The Southern slopes in Himalayan region are covered with thick vegetation as compared to Northern slopes. Justify the statement with two reasons.

Ans. It is because the Southern slopes receive more sunlight. The Southern slopes in Himalayan region are covered with thick vegetation as compared to Northern slopes of the same hills on account of:

- (i) These slopes are covered with thick cover of coniferous forests.
- (ii) A wide range of flora and fauna can be found in these woods.

Q 10. Western slopes of the Western Ghats are covered with thick forests and the Eastern slopes are not. Why?

Ans. It is because the Western slopes receive higher amount of precipitation.

Q 11. Name the forests which are the most widespread in India.

Ans. Tropical deciduous forests are the most widespread in India.

Q 12. What are the climatic conditions of tropical evergreen forests?

Ans. The climatic conditions of tropical evergreen forests are high temperature and heavy rainfall (above 200 cm per year).

Q 13. What kinds of forests are found in the areas with less than 70 cm annual rainfall?

Ans. Thorn and scrub type of forests are found in areas with less than 70 cm annual rainfall.

Q 14. What are the common animals found in thorn and scrub forests?

Ans. In thorn and scrub forests, the common animals found are rats, mice, rabbits, foxes, wolves, tigers, lions, wild ass, horses and camels.

Q 15. Which trees out of coconut, cactus, acacia and cinchona are found in mangrove forests?

Ans. Only coconut trees are found in mangrove forests, cactus and acacia are found in thorn forests, while cinchona trees are found in tropical evergreen forests.

Q 16. What is the main medicinal use of the sarpagandha plant?

Ans. The main medicinal use of the sarpagandha plant is to treat high blood pressure.

Q 17. In which regions are mangrove forests found?

Ans. The mangroves are found in the deltas of the Ganga, the Mahanadi, the Krishna, the Godavari and the Kaveri.

Q 18. Name the biosphere reserves which have been included in the World Network of Biosphere Reserves.

Ans. The Sundarbans, Nanda Devi, Nilgiri, Gulf of Mannar are the biosphere reserves which have been included in the World Network of Biosphere Reserves.

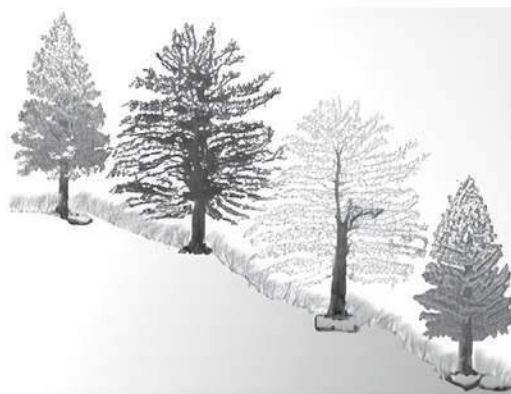
Q 19. What is the term used for a species if it is introduced to another environment?

Ans. It refers to exotic species. They are natural vegetation which is originally from foreign countries.

Q 20. Where is the Bengal Tiger found in India?

Ans. Bengal Tiger is found in India in the Sundarbans of the Ganga-Brahmaputra Delta.

Q 21. Identify and explain the forests which are shown in the following image:



Ans. Above image shown Montane Forests. Montane Forest is ecosystem found in mountains. It gets affected by colder climate at moderate elevations. For example, pine, deodar, silver etc.



Short Answer Type Questions

Q 1. Give the meaning of ecosystem. Why should it be conserved?

Ans. **Meaning of Ecosystem:** The interdependence and interrelation of species of plants and animals in a given physical environment forms an ecosystem.

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A very large ecosystem on land having distinct types of vegetation and animal life is called a biome.

Ecosystem should be conserved due to the following reasons:

- (i) It is the ecosystem which helps man to survive and lead a comfortable life.
- (ii) It provides man with food, raw material for industries and clothing.
- (iii) It also helps in maintaining the ecological balance of a region.

Q 2. What is the importance of various species in the ecosystem?

Ans. The importance of various species in the ecosystem can be understood with the help of the following points:

The animals, known as the milk animals, provide us milk and various food items can be prepared by using milk. They also provide us help in cultivating and ploughing the fields.

- (ii) The fish is nutritive and provides rich proteins.
- (iii) Many Insects help in pollination of crops and fruit trees.

So, every species has a role to play in the ecosystem.

Q 3. Differentiate between flora and fauna.

Ans. Difference between flora and fauna are:

S. No.	Basis of Difference	Flora	Fauna
(i)	Form of life	The <u>automatically or naturally grown greenery of a region or an area</u> is called flora.	Fauna includes <u>all types of organisms ranging from tiny bacteria to the giant elephants</u> .
(ii)	Origin	It was the first form of life that appeared on the Earth.	It appeared on Earth after flora.
(iii)	Characteristic	It is able to convert solar energy into food energy.	It is dependent on the flora for its survival.

COMMON ERROR

Students do not mention the difference in tabular form and hence they lose their marks.

Q 4. Name the different types of forests found in our country and what is the vegetation found at high altitudes.

Ans. In our country, the following forests are found:

- (i) Tropical evergreen forests
- (ii) Tropical deciduous forests
- (iii) The thorn forests and shrubs
- (iv) Montane forests
- (v) Mangrove forests

The type of vegetation found at high altitudes is montane forest.

Q 5. What is a bio-reserve? Give two examples.

Ans. The forest area where all types of flora and fauna are preserved in their natural (physical) environment are termed as bio-reserves.

Two examples of these bio-reserves are Nilgiri (at the tri-junction of Karnataka, Tamil Nadu and Kerala), and Nanda Devi (Uttarakhand).



TIP

Learn the examples of bio-reserve thoroughly along with its definition.

Q 6. What will happen if plants disappear from the Earth's surface?

Ans. If the plants disappear from the Earth's surface, then the ecological balance will be disturbed. Without plants, there will be no oxygen available for breathing and after some time, all the animals and even human beings will die. Life will be wiped out from the surface of Earth.

Q 7. Name any three medicinal plants along with their use.

Ans. The following are the medicinal plants:

- (i) **Neem:** It has high antibiotic and anti-bacterial properties.
- (ii) **Tulsi Plant:** It is used to cure cough and cold.
- (iii) **Kachnar:** It is used to cure asthma and ulcers. The buds and roots are good for digestive problems.



Long Answer Type Questions

Q 1. How are forests useful to human beings?

Ans. Forests are useful in the following ways:

- (i) Forests provide us timber, fuelwood, furniture wood, bamboo, medicinal herbs, spices, etc.
- (ii) They maintain an ecological balance which is vital for the sustenance of all life forms, be it human beings, animals or plants.
- (iii) They provide a natural environment for wildlife, which is one of the biggest assets of India.
- (iv) Forests provide livelihood to many forest communities and tribes.
- (v) Forests help in the prevention of soil erosion.

Q 2. Natural vegetation zones differ with differences in relief and climatic conditions. Explain.

Ans. Natural vegetation zones differ with differences in relief and climatic conditions. This can be explained with the help of the following points:

- (i) Tropical rainforests are located on the rainy slopes of Western Ghats, and Andaman and Nicobar Islands and in areas which receive rainfall of 200 cm or above, with a short dry season.
- (ii) Tropical deciduous forests are located where rainfall is 70 cm to 200 cm. In India these forests are found on the Eastern slopes of Western Ghats, West Odisha and Chhattisgarh.
- (iii) The thorn forests and shrubs are located where rainfall is less than 70 cm. This type of vegetation is found in Rajasthan, Haryana, Madhya Pradesh, and Uttar Pradesh.

(iv) Montane forests are found in the mountainous regions. With the decrease in temperature, there is a succession of different natural vegetations. Alpine vegetation like silver fir, junipers, etc., are found at 3,600 metres above sea-level. Above the snow-line, shrubs and alpine grasslands are located.

(v) Mangrove forests are found in the areas of coasts influenced by tides. The deltas of the Ganga, the Mahanadi, the Krishna, the Godavari, and the Kaveri are covered by such vegetation. Sundari trees are found in the Ganga-Brahmaputra delta.

Q 3. Write a note on tropical evergreen forests.

Ans. Tropical evergreen forests are found in areas which receive heavy rainfall, i.e., of more than 200 cm and have a short dry season.

Some of the characteristics of these forests are:

- (i) These forests have tremendously tall trees which reach upto 60 metres or above. There is no definite time for trees to shed their leaves. As such, these forests appear green all through the year.
- (ii) They are mostly found in the areas of the Western Ghats and the island groups of Lakshadweep, and Andaman & Nicobar, also in the upper parts of Assam and Tamil Nadu coast.
- (iii) Since, the region remains warm and wet throughout the year, it bears all types of vegetation, viz., trees, shrubs, and even creepers. Some commercially relevant trees of this forest are ebony, mahogany, rosewood, rubber and cinchona.
- (iv) The common animals found here are elephants, monkeys, deer and lemur. Besides these animals, birds, bats, sloth, scorpions and snails are also found in these jungles.



TIP

Do not be confused between the types of trees and animals found in tropical evergreen forests with other type of vegetation.

Q 4. Briefly discuss tropical deciduous forests.

Ans. Tropical deciduous forests are the most widespread forests of India and are also referred to as 'monsoon forests.' They are found in regions receiving rainfall between 70 cm to 200 cm. Trees of these forests shed their leaves for about 6-8 weeks in dry summer. On the basis of the availability of water, these forests can be further classified as follows:

(i) **Moist Deciduous Forests:** These forests are found in areas receiving rainfall between 200 cm to 100 cm. These forests are mainly found in North-eastern states, along the

foothills of the Himalayas, Jharkhand, West Odisha, Chhattisgarh and on the Eastern slopes of the Western Ghats. Teak, bamboo, sal, shisham, sandalwood, khair, kusum, arjun and mulberry are the commercially important trees found in these forests.

(ii) **Dry Deciduous Forests:** These forests are found in areas receiving rainfall between 100 cm to 70 cm. These forests are found in the rainier parts of peninsular plateau and plains of Bihar and Uttar Pradesh. Teak, sal, peepal and neem are important trees of this forest.

Q 5. Differentiate between tropical evergreen and deciduous forests.

Ans. Difference between tropical evergreen and deciduous forests are:

S.No.	Basis of Difference	Tropical Evergreen	Deciduous Forests
(i)	Location	<u>They are found where the average rainfall is more than 200 cm.</u>	<u>They are found where the average rainfall is between 75 cm to 200 cm.</u>
(ii)	Types	<u>Tropical evergreen forests are divided into two groups, viz., the moist evergreen and the dry evergreen forests.</u>	<u>These forests are also of two types, viz., the moist deciduous and the dry deciduous forests.</u>
(iii)	Shedding of leaves	<u>These do not have a distinct season of shedding leaves.</u>	<u>They shed their leaves once a year to minimise evaporation.</u>
(iv)	Height	<u>The trees in these forests exceed 60 metres in height.</u>	<u>The trees here are less than 50 metres in height.</u>
(v)	Trees found	<u>Ebony, mahogany, rosewood, cinchona, cedar are the representative trees of these forests.</u>	<u>Sal, teak, shisham, bamboo, sandalwood, arjun and mulberry trees represent these forests.</u>

Q 6. 'In mountain areas, there is a change in natural vegetation due to decrease in temperature'. Discuss.

Ans. In mountainous areas, the decrease in temperature with increasing altitude leads to the corresponding change in natural vegetation. Because of this, there

succession of natural vegetation in montane forests in the following manner:

The wet temperate type of forests are found between the height of 1,000 metres to 2,000 metres. Evergreen broad-leaf trees such as oaks and chestnuts are found here.

- (ii) The temperate type of forests are found between the height of 1,500 metres to 3,000 metres. Coniferous trees like pine, deodar, silver fir, spruce and cedar are found here.
- (iii) At still higher elevations, temperate grasslands are common.
- (iv) At altitudes of above 3,600 metres, alpine vegetation is found. Silver fir, junipers, pines and birches are the common trees found here.
- (v) At still higher elevations alpine grasslands are found.
- (vi) At higher altitudes, mosses and lichens form part of tundra vegetation.

Q 7. Mention the steps taken by the Indian government to protect the flora and fauna of the country.

Ans. The following steps have been taken by the Indian government to protect the flora and fauna of the country:

- (i) Wildlife Protection Act has been implemented in 1972.
- (ii) Fourteen biosphere reserves have been set up in the country to protect flora and fauna.
- (iii) Financial and technical assistance is provided to many botanical gardens by the government since 1992.
- (iv) Project Tiger, Project Rhino, Project Great Indian Bustard and many other eco-developmental projects have been introduced.
- (v) 89 national parks, 490 wildlife sanctuaries and zoological gardens have been set up to take care of the natural heritage.

Knowledge BOOSTER

Four biosphere reserves, viz., the Sundarbans in West Bengal, Nanda Devi in Uttarakhand, the Gulf of Mannar in Tamil Nadu and the Nilgiris, have been included in the world network of biosphere reserves.

Q 8. Explain briefly the different zones of biosphere reserves.

Ans. Bio-reserves aim to achieve three interconnected functions, i.e., conservation, development and logistic support. To fulfil these functions, they contain three interconnected zones, which are as follows:

- (i) Core zone is a securely protected site for conserving biological diversity, monitoring minimally disturbed ecosystems and undertaking non-destructive research and other low-impact uses, like education.
- (ii) Buffer zone surrounds or adjoins the core area and is used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism and applied basic research.
- (iii) Transition/development zone may contain diversity of agricultural activities, settlements and other uses in which local communities, management agencies, scientists, NGOs, cultural groups, economic interest groups and other stakeholders work together to manage and sustainably develop the area's resources.

Q 9. Quite a few species of plants and animals are endangered in India. Why?

Ans. Nearly 1,300 species of plants are endangered. Quite a few animal species are also endangered. They are endangered because of the following reasons:

- (i) The greatest danger to wildlife is the destruction of the habitat. The clearing of land for homes, farmland, dams and highways destroys the habitat of wildlife.
- (ii) Hunting has been another major cause of extinction. Animals and birds are killed for their skin, feathers and in some cases, for laboratory specimen.
- (iii) The use of pesticides and the pollution of the environment threaten many birds and animals species throughout the world.
- (iv) Pollution due to chemical and industrial waste is also causing a great threat to the natural environment.



Chapter Test

Multiple Choice Questions

Q 1. Which type of vegetation zone is found in the higher reaches of the Himalayas?

- a. Tropical
- b. Alpine
- c. Temperate
- d. None of the above

Q 2. Which type of forest is also known as monsoon forest and spread over the region receiving rainfall between 200 cm and 70 cm?

- a. Tropical deciduous forests
- b. Tropical evergreen forests
- c. Tropical thorn forests and scrubs
- d. Mangrove forests

Which type of forests are restricted to heavy rainfall areas of the Western Ghats and the island group of Lakshadweep and Andaman & Nicobar?

- Tropical deciduous forests
- Tropical evergreen forests
- Mangrove forests
- Montane forests

Q 4. Match the following:

Types of Forest	Trees Found
1. Tropical evergreen forests	A. Acacia and palm
2. Thorn forests	B. Sundarl and keora
3. Moist deciduous forests	C. Ebony and mahogany
4. Mangrove forests	D. Teak and bamboo

- | | | | | | | | |
|------|---|---|---|------|---|---|---|
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| a. C | A | D | B | b. C | A | B | D |
| c. A | C | D | B | d. D | B | A | C |

Q 5. Which one of the following animals lives in the swampy and marshy lands of Assam and West Bengal?

- One-horned rhinoceros
- Tiger
- Lion
- Elephant

Assertion and Reason Type Questions

Directions (Q.Nos. 6-7): In the following questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:

- Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true, but Reason (R) is false.
- Assertion (A) is false, but Reason (R) is true.

Q 6. Assertion (A): The mangrove forests are known for their distinct quality.

Reason (R): They are able to survive in saline water and are found in the Sundarbans and Andaman and Nicobar Island.

Q 7. Assertion (A): Like its flora, India is rich in its fauna.

Reason (R): India constitute about 13% of the world's total birds species.

Source Based Question

Q 8. Read the source given below and answer the questions that follow:

Tropical evergreen forests are restricted to heavy rainfall areas of the Western Ghats and the Island groups of Lakshadweep, Andaman and Nicobar, upper parts of Assam and Tamil Nadu coast. They are at their best in areas having more than 200 cm of rainfall with a short dry season. The

trees reach great heights up to 60 metres or even above. Since, the region is warm and wet throughout the year, it has a luxuriant vegetation of all kinds — trees, shrubs and creepers giving it a multilayered structure. There is no definite time for trees to shed their leaves. As such, these forests appear green all the year round.

Some of the commercially important trees of this forest are ebony, mahogany, rosewood, rubber and cinchona.

The common animals found in these forests are elephant, monkey, lemur and deer. One-horned rhinoceroses are found in the jungles of Assam and West Bengal. Besides these animals, plenty of birds, bats, sloth, scorpions and snails are also found in these jungles.

- In which areas of India the tropical evergreen forests are found?
- Name the commercially important trees and animals found in these forests.
- Mention any two characteristics of tropical evergreen forests in the context of rainfall and climate.

Very Short Answer Type Questions

- What is meant by 'virgin vegetation'?
- Western slopes of the Western Ghats are covered with thick forests and the Eastern slopes are not. Why?
- Which trees out of coconut, cactus, acacia and cinchona are found in mangrove forests?
- What are the climatic conditions of tropical evergreen forests?

Short Answer Type Questions

- How have the vegetation of thorn forests adapted to the climate?
- What are bio-reserves? Why are they created?
- What are the major steps taken by the Indian government to conserve our flora and fauna?
- Suggest some ways to control exploitation of plant and animal resources by human beings.

Long Answer Type Questions

- 'In mountain areas, there is a change in natural vegetation due to decrease in temperature'. Discuss.
- "The main reason for the dwindling wildlife resources in India is hunting by greedy hunters." Support the statement and suggest some steps to overcome this threat.