What is a Forest?

Forest is a dense land or a complex ecosystem consisting of rich biodiversity and supports a variety of life forms. The trees maintain the environment of the surroundings which in turn affects the plants and animals living in the forest. They are an important component of the environment that purify the air, cool the air during the day and act as excellent sound absorbers.

Importance of Forest

There is numerous importance of the forest as it helps us by providing all the useful products which are required for our lives. Some of them are listed here.

Forests provide us with – Firewood, Timber, Wood pulp, Honey, lac, medicinal plants and herbs, raisin, biofertilizers, etc. Forests also supply us with the different types of raw materials for industrial uses, fodder for the animal's feed, fuel, and fibres.

Along with these essential products, forests also play an important role in protecting our environment by:

- Promoting rainfall.
- Reduces noise pollution.
- Maintains the ecological balance.
- Acts as a wind barrier from heavy winds.
- Provide moisture and lower the temperature.
- Prevents flash floods by slowing down the movement of water.
- Preventing soil erosion and preserve the fertility of the soil.
- Maintains the balance of carbon dioxide and oxygen in the environment.
- Preserves the biodiversity by providing shelter for many creatures that depend on the forest for their survival

Geographical Distribution of Forest in India

- Around 20.6% of total Geographical area of the country is under forests
    - This is much below the world average of 30.4%
- According to **National Forest policy**, the desired percentage of forests is around 33% of the total area
- Madhya Pradesh has the largest area of forest cover in India
- As per percentage of forest area to total area, Andaman Nicobar islands, Arunachal Pradesh, Mizoram and Nagaland are very rich areas. These regions have over 80% of their geographical area under forests

Forests account for 75% of the gross primary production of the Earth's biosphere, and contain 80% of the Earth's plant biomass. Net primary production is estimated at

21.9 gigatonnes of biomass per year for tropical forests, 8.1 for temperate forests, and 2.6 for boreal forests.

Accordingly, the forests in India can be divided as:

1. **Moist Tropical Forest**
    1. **Tropical wet Evergreen Forests**
        - These are rain forests, which grow in dense areas where rainfall exceeds 250cm, and annual temperature is about 25-27 deg celsious
        - The average annual humidity exceeds 77% and dry season is distinctly short
        - These trees do not shed their leaves annually, at least not together and are termed as Evergreen Forests
        - These are lofty, layered and very dense
        - Due to the thick green canopy, the sunlight cannot reach the bottom, which supports luxuriant growth
        - These are found along western sides of Western Ghats, in Arunachal Pradesh, upper Assam, Nagaland, Manipur, Mizoram and Tripura, and in Andaman & Nicobar Islands
        - Important species of these forests are measua, cedar, bamboo, jamun, canes
        - Despite valuable commercial species, these have not been exploited due to dense undergrowth
2. **Tropical Semi Evergreen Forests**
    1. These are comparatively drier than the above
    2. Here annual rainfall ranges between 200-250 cm, mean annual temperature varies from 24-27 deg Celsius and relative humidity of around 75%
    3. These are found in Assam , lower slopes of Eastern Himalayas, Odisha and Andaman
    4. At places, these represent the **transition** from wet evergreen to deciduous forests
    5. Important species include semul, rosewood, kusum, Indian chesnut, champa, etc.
3. **Tropical Moist Deciduous Forests**

1. These are found in areas of moderate rainfall of 100-200 cm per annum, and mean annual temperature of about 27 deg Celsius, and the average annual relative humidity of 60-75 percent
2. These are found as a strip along western Ghats, a strip along Shiwalik range, most of Odisha, parts of West Bengal an in Andaman and Nicobar Islands
3. The trees of these forests drop leaves for about 6-8 weeks in a year, when moisture is not sufficient
4. These forests yield valuable timber, and hence are commercially often exploited
5. Main species include teak, Sal, lendi, bamboo, etc.

4. **Littoral and Swamp Forests**
    1. These occur in and around deltas, estuaries and creeks prone to tidal influences and hence are also called tidal/delta forests
    2. Swamp forests are confined to deltas of Ganga, Mahanadi, Krishna, Cauvery
    3. Peculiar feature of these forests is that they can grow both in fresh and brackish water
    4. Dense mangroves grow along coasts, tidal creeks, backwaters, salt marshes and mud flats
    5. These provide hard and durable timber, which is used for construction and building purpose as well as for making boats
    6. Important species include Sundri, agar, bhendi, Rhizopora, canes and palms

Dry tropical Forests

1. **Tropical dry Evergreen Forests**
    - Along coasts of Tamilnadu are areas which receive annual rainfall of about 100cm mostly from North Eastern monsoon winds in October-December
    - The mean annual temperature is about 28 deg Celsius, and mean humidity is around 75%
    - Important species include, jamun, ritha, tamarind, neem, etc.
2. **Tropical Dry Deciduous Forests**
    - These are similar to moist deciduous forests and shed their leaves in dry season
    - They receive rainfall of around 100-150 cm per annum
    - They represent a **transitional type** – on wetter side they give way to moist deciduous and on drier side they degenerate into thorn forests

- They occur from along foot of Himalayas to Kanniyakumari except in Rajasthan, Western Ghats and West Bengal
- Important species are teak, tendu, bamboo, sal, etc.
- These are the most commercially exploited of all types of forests in India

3. **Tropical thorn forests**
    - These occur in areas of low rainfall(less than 75cm), low humidity of less than 50% and high temperature of 25-30 deg Celsius
    - Trees are low and widely scattered
    - Acacias are prominent, Indian wild date is common in these forests
    - These are found in NW parts of country including Rajasthan, SW Punjab, western Haryana, Kuchch and parts of Saurashtra
    - They also grow along leeward side of western Ghats
    - Important species are neem, babul, etc.

Montane Sub-Tropical forests

- **Sub-tropical broad leaved Hill Forests**
    - These are found in Eastern Himalayas to the east of 88 deg E longitude at altitudes varying from 1000-2000m where mean annual rainfall is 75-125cm
    - Average annual temperature is 18-21 deg Celsius and the average humidity is 80%
    - Evergreen oaks and chestnuts predominate with some ash and beech
    - Sals and pines may occur on lower and higher margins respectively; climbers and epiphytes are common
    - They are found in Nilgiri and Palni Hills, Mahabaleshwar, summits of Satpura and Maikal range, highlands of Aravali range
- **Sub-tropical moist pine forests**
    - These are found at a height of 1000-2000m above sea level, in the western Himalayas between 73 deg East and 88 deg E longitudes
    - Parts of Arunachal Pradesh, Manipur, Naga Hills, Khasi Hills are covered with such forests
    - Chir or Chil is most dominant tree in this region
    - These forests produce timber and for producing resin & turpentine
- **Sub-tropical Dry Evergreen Forests**
    - These are found in the Bhabar belt, the Shiwalik and the western Himalayas up to 1000m above sea level
    - Here rainfall is 50-100cm, with summers sufficiently hot and winters cold enough for occurrence of frosts

- Olive, acacia, pistachio are most predominant species