Geography – Questions
Natural Vegetation in India

I. Short answer questions:

Q. 1: What is meant by **natural vegetation**?

Ans.1: Natural vegetation refers to the plant cover that exists over a certain area consisting of several species that have adjusted themselves to the soil and climatic conditions.

Types of vegetation includes – Tropical evergreen (Rain), Tropical deciduous (Monsoon), Tropical deserts (Thorn), Literal (tidal) and Montane forests (Alpine).

Q. 2: Name the area where **tropical rain forests** are found.

Ans. 2: Tropical rain forests are distributed in areas which receive more than 250 cm rainfall, humidity exceeds 77% and temperature is between 25˚C. and 27 ˚C.

i. Western slopes of the Western Ghats
ii. North - East region
iii. Islands of Lakshadweep, Andaman & Nicobar Islands.

Q. 3: Mention two main characteristics of **Tropical Rain Forests**.

Ans. 3: Tropical Evergreen Forests or Tropical Rain Forests:

i. These are dense multilayered forests (Trees of varying heights)
ii. Forests occur in mixed stands and hence difficult to exploit.
iii. Trees reach heights of more than 60mtrs.
iv. Because of the dense canopy sunlight does not penetrate to the forest floor.
v. Forests are ever green because different species shed leaves at different times during the year.
vi. They provide hardwood which is heavy and difficult to transport.

Q. 4: Name two trees found in **Tropical Evergreen Forests** and give their economical value.

Ans. 4: **Rose Wood** – Making furniture, flow boards and wagon parts.
Ebony – For ornamental carving, musical instruments, sports goods.
Chaplas – Wood is strong, hard and durable, ship building and furniture.
Telsur – Wood is strong, hard and durable, bullock carts, bridges, boats and railway sleepers.
Sissoo – Wood is strong, hard and durable, bullock carts, agricultural implements, and railway sleepers.
Gurjan – Packaging boxes, Tea boxes, wagon parts.
Toon – Furniture, toys and tea boxes.

Q. 5: Mention two reasons why Tropical Evergreen Forests are difficult to exploit for commercial purposes

Ans. 5: **Tropical Evergreen forests** are difficult to exploit because,

i. They are very dense forests,
ii. Wood is heavy and difficult to transport.
iii. The trees occur in mixed stands.

Q. 6: Name two varieties of the **Tropical Deciduous Forests**.

Ans. 6: **Tropical (Monsoon) deciduous forests** include moist deciduous and dry deciduous forests.

i. They are found in pure stands and therefore easier to exploit for commercial purposes.
ii. They are 30 to 45 m tall; wood is hard and broad leaved and provides valuable timber and other forests products.
iii. They shed their leaves for six to eight weeks in the hot weather.
iv. The wood is not as heavy as tropical ever green forests and therefore easier to transport.

Moist deciduous forests	**Dry deciduous forests**.
Sal – Hard, heavy wood, Beams, Construction purposes, Bridges, Railway sleepers	**Sal** – Hard, heavy wood, Beams, Construction purposes, Bridges, Railway sleepers
Teak – Furniture, construction purposes, ship building, Railway sleepers, Bridges.	**Teak** - Furniture, construction purposes, ship building, Railway sleepers Bridges.
Palas – Leaves used for rearing of Shellac worms.	**Palas** - Leaves used for rearing of shellac worms.
Shisham – Hard, heavy wood, construction purposes, bullock carts, agricultural implements, railway sleepers, making furniture	**Khair** – For making handles of knives, daggers and swords, use for making charcoal.
Semul – Soft wood which is white for making toys, packing cases and match boxes, fruit yields, soft fibre for making pillows.	**Amaltas** – Fruit, pulp, roots and seeds used for relieving symptoms of Asthma, Leprosy, heart related diseases, ring worms.
Mulberry – Sports goods, rearing of silk worms.	**Tendu** – Leaves used as wrappers for Bidi making.
Sandal wood – Ornamental objects, making soaps, and extracting sandalwood oil.	**Axle wood** – Making furniture, Kitchen cabinets, TV cabinets.
Mahua – Fruit for extracting oil, flowers for making wine.	

Q. 7: Name any two trees that grow in the **Tropical Deciduous Forest** and provide timber.
Ans. 7: i. **Moist Deciduous –** Sal, Teak, Palas, Semul, Shisham, Mulberry, Mahua
ii. **Dry Deciduous –** Sal, Teak, Palas, Khair, Amaltas, Tendu, Axle wood.

Q. 8: Name a tree, **leaves** of which have commercial value.
Ans. 8: **Tendu –** Leaves are used as Bidi wrappers.
Palas – Leaves are used for rearing Shellac worms.
Mulberry – Leaves used for rearing silk worms.
Neem Oil & Leaves – are used for health products.

Q. 9: Give two characteristic features of **Alpine forests**.
Ans. 9: Characteristic features of **Alpine Forests** include:
i. Temperature 12 to 13˚C, rainfall 100-300 cm, humidity 55 – 65
ii. Distribution – entire Himalayan zone, Altitude of 1500 to 4000 M.
iii. Coniferous Trees – like Chir Pine between 1500 to 2000m and Blue Pine between 2000 to 3000m.
iv. Contained in these forests are a mix of species of broad leafed, ever green trees and coniferous trees. They also contain scrubs, creepers and ferns.

Q. 10: Name any three trees found in **monsoon deciduous forest** and state one use of each of these trees.

Moist deciduous forests	**Dry deciduous forests**.
Sal – Hard, heavy wood, Construction purposes, Railway sleepers , Beams, Bridges,	**Sal –** Hard, heavy wood, Construction purposes, Railway sleepers ,Beams, Bridges,
Teak – Furniture, construction purposes, ship building, Railway sleepers, Bridges.	**Teak** - Furniture, construction purposes, ship building, Railway sleepers Bridges.
Palas – Leaves used for rearing of Shellac worms.	**Palas** - Leaves used for rearing of shellac worms.
Shisham – Hard, heavy wood, construction purposes, Railway sleepers bullock carts, agricultural implements, musical instruments, making furniture	**Khair –** For making handles of knives, daggers and swords, use for making charcoal.
Semul – Soft wood which is white for making toys, packing cases and match boxes, fruit yields, soft fibre for making pillows.	**Amaltas –** Fruit, pulp, roots and seeds used for relieving symptoms of Asthma, Leprosy, heart related diseases, ringworms.
Mulberry – Sports goods, rearing of silk worms.	**Tendu –** Leaves used as wrappers for Bidi making.
Sandal wood – Ornamental objects, Handicrafts, making soaps, and extracting sandalwood oil.	**Axle wood –** Making furniture, Kitchen cabinets, TV cabinets.
Mahua – Fruit for extracting oil, flowers for making wine.	

Q. 11: What are '**Tidal Forests'**? Name two typical trees found there.
Ans. 11: **Tidal forests** or Literal forests are found in wet marshy areas, in river Deltas and in tidal and swampy areas along the sea coast. E.g. Sunderbans in West Bengal.
i. Aerial stilt like roots.
ii. Trees survive in brackish and fresh water.
iii. Can grow to a height of 30 m.
iv. Epiphytes are common in these trees. E.g. Sundari Trees, Gorjan, Hintal, Amur, Keora and Agar.

Q. 12: Name the type of forests found in the **western part of the Western Ghats**. Give two reasons why these forests are so named.
Ans. 12: **Tropical evergreen forests** or tropical rainforests.
Different species shed their leaves at different times of the year and hence they are evergreen.
These forests are dense and multi-layered (heavy leaf growth) because they receive rainfall of more than 250cm. from the south-west monsoon.

Q. 13: Give two characteristics of **tidal forests**.
Ans. 13: **Tidal forests** or Literal forests are found in wet marshy areas, in river Deltas and in tidal and swampy areas along the sea coast.
E.g. Sunderbans in West Bengal.
i. Aerial stilt like roots.
ii. Trees survive in brackish and fresh water.
iii. Can grow to a height of 30 m.
iv. Epiphytes are common in these trees.

Q. 14: Why are the **Sunderbans** so called?
Ans. 14: **Tidal forests** are found in the Saline swamps of the Sunderbans in West Bengal (Delta of Gangas). The forests have Sundari Trees after which the forests are called Sunderbans.
The Sundari Trees provide hard, durable timber for construction, boat making and building purposes.
Mangrove trees are also utilised for fuel.

Q. 15: Why are the **forests grown** around the cities having the **iron and steel industries**?

Ans. 15: Forests are grown around industries because,
The level of pollution is much higher around iron and steel industries and to prevent pollution trees are planted.
The trees act as a barrier for dust (Steel plants emit dust levels of 20kg. per metric tonne of steel).
The plants purify the air.

Q. 16. What is **Social Forestry**? 17. What is meant by **Agro-Forestry**?

Social Forestry	Agro Forestry
It refers to the management and protection of forests and afforestation to help environmental, social and rural development.	It is a part of Social Forestry and represents an intermediate stage between forestry and agriculture.
Social Forestry is also known as Extension forestry, Urban forestry etc.	It is a sustainable system through combined cultivation of agricultural crops and forests crops and animal rearing.
Social forestry aims to satisfy the needs of both the local people and the Government.	It ensures efficient use of land in keeping with the socio-cultural practices of the local people.

Objectives of Social Forestry	Objectives of Agro Forestry
1. Providing wood fuel, fodder minor forests products and timber to the rural people 2. Developing local cottage industry by providing raw materials. 3. Providing employment opportunities to rural people. 4. Providing efficient conservation of soil and water. 5. Fulfilling the recreational needs of the local people.	1. To reduce the pressure on natural forests for obtaining timber as well as other forest products. 2. To prevent soil erosion and maintain soil fertility 3. To ensure proper utilisation of farm resources and maintain the ecological balance. 4. The best use of resources like land, manpower and livestock to obtain a variety of forest products such as food, fuel, fodder, livestock etc. while ensuring sustainability from the land.

Features of Social Forestry	Features of Agro forestry
1. Afforestation & Re-afforestation with local people's participation. 2. Ensuring sustainable forestry by silviculture and short crop rotation. 3. Making use of all unused and fallow land to reduce pressure on forests. 4. Making use of easily implementable technology.	1. Agro Forestry is not vulnerable to population stresses unlike traditional forestry. 2. It is in keeping with socio-cultural practices of the local population. 3. It coordinates with the local population to ensure sustainable forestry.

Q. 18: Briefly explain two reasons for forests being an important **natural resource**.
Ans. 18: The importance of forests as a **natural resource/ direct uses of forest**. [Distinguish this from Q-20]

i. Forest provides valuable timber and other forests products.[Forests soft woods supply raw materials for wood pulp, paper, rayon industry]
ii. Provide raw material for the paper industry
iii. Forest products like gum, resin and rubber are used, material for tanning leather.
iv. Forests provide timber for domestic and commercial purpose [house building, furniture making, ship building].
v. Forests provide food requirements like wild fruits nuts and berries to tribal population.
vi. Forest wood is used as a fuel in houses and smelting industry.

Q. 19: Mention three methods for the **conservation** and development of **forests** in India.
Ans. 19: Methods for conservation and development of forests include,

i. Afforestation and stopping the indiscriminate felling of trees. Proper replacement of trees by planting saplings at least in the ratio of 1:10[one tree to ten saplings].
ii. Proper legislation and implementation to check deforestation.
iii. Using alternative sources of energy like solar energy, tidal energy, hydel energy, etc this ensures that trees are no longer felled for providing firewood.
iv. Prevention of over grazing, forest must be protected from fires.
v. Productivity of forest can be increased through silviculture.
vi. People's participation – local communities must be involved in Afforestation programmes and other forests conservation method, shifting, cultivation needs to be controlled.

Q. 20: Mention three **reasons why forests must be conserved**. **[Alternate question**- What is the importance/ functions of forest/how do forest help the economy/ need for conservation of forests/ list the direct and indirect advantages/uses of forests]

Ans. 20: **Reasons for forests conservation include**:

i. Forests provide timber for domestic and commercial uses.
ii. Forests provide employment in forests based industries.
iii. It provides the raw material for paper industry.
iv. It provides the natural habitat for wild life.
v. It supports the tourism industry.
vi. It has a favourable influence on temperature and rainfall (lowers temperature and increases rainfall by capturing moisture in the air)
vii. Decreases the green house effect by absorbing carbon dioxide and controls atmospheric pollution.
viii. Controls soil erosion and helps in the prevention of floods and droughts. Soil erosion increases silt load of the rivers. Siltation causes floods which destroys property & crops. Lack of forests reduces precipitation that causes drought.
ix. Helps in water percolating and helps maintain groundwater levels.
x. They check the advance of deserts.
xi. They increase soil fertility [decay of plant leaves provides humus that adds to soil fertility] and prevent/control soil erosion.
xii. Forest provides many major and minor products like wood, gum, resin, fibre, fruits etc.

Q. 21: Name the tree the **timber** of which could be used for the following:

a) A soft and white timber used for making toys and match boxes.
b) A hard durable timber used for ship building and furniture making.
c) A sweet smelling timber which yields oil, used for making handicrafts.

Ans. 21: a. Semul, b. Teak, c. Sandalwood.

Q. 22: How does lack of forest cover lead to **floods and droughts**?

Ans. 22: Forest cover controls soil erosion and helps in the prevention of floods and droughts. Soil erosion increases silt load of the rivers. Siltation causes floods which destroys property & crops. Lack of forests reduces precipitation that causes drought.

Q.23: List **causes for the reduction in forest cover**. **[Alternate question**-What are the causes for deforestation] **[Some of the points in this answer can be used for the causes of soil erosion]**

Ans. 23: Causes for the reduction in forest cover are:

i. Rapid population growth has resulted in forest land being converted to agricultural land.
ii. Forest lands have been converted into pasture lands to support cattle ranching and dairy farming.
iii. Increasing demand for timber due to industrialization and urbanizations has led to deforestation.
iv. Construction of multi-purpose river valley projects has led to the submergence forest lands.
v. Overgrazing, faulty farming techniques like over cropping and shifting agriculture has destroyed forest lands.
vi. Soil erosion and forest fires have led to destruction of forest.
vii. Railway and road projects have also led to felling of trees.

Q. 24: What are the **consequences of deforestation**?

Ans. 24: The consequences of deforestation are:

i. It has led to the decline of forest productivity.
ii. The moderating influence on climate, rainfall maintaining soil fertility[decay of plant leaves provides humus that adds to soil fertility], preventing soil erosion and purifying air[plays a dominant role in the carbon cycle & absorbs carbon-dioxide] & controlling atmospheric pollution is lost.
iii. Leads to floods and droughts from soil erosion.
iv. Deforestation increases Green house effects.
v. Loss of habitat for a large variety of animals and birds.
vi. Soil erosion from hill slopes.
vii. Floods and silting of rivers.

Q. 25: Distinguish between **Afforestation and Re-afforestation**.

Afforestation	**Re-afforestation**
i) Afforestation refers to plantation of new forest in new areas. The newly planted forests are carefully supervised to protect against forest fires.	i) Reforestation of forest is the restoration of forests that have been indiscriminately destroyed.
ii) One sapling is planted to get one tree.	ii) Under this scheme two saplings are planted to replace every felled tree.

Q. 26: Name an **industrial use** of **timber**.

Ans. 26: Fuel for smelting industries.

Q. 27: Name four **products** gathered from **forest**.

Ans. 27: Resin, rubber, gum & tanning material.

Q. 28: List three **climatic factors** on which **forest growth** depends on.

Ans. 28: i) rainfall, ii) Altitude, iii) Relative humidity, iv) Temperature.

Q. 29: How do areal stilt like roots help in a **tidal forest**?
Ans. 29: Helps the trees to survive in soft and shifting mud.

Q. 30: What is the use of **Myrobalan trees**?
Ans. 30: It provides materials for tanning of leathers and dying cotton.

Q. 31: Give two uses of **reforestation**.
Ans. 31: i) Restores forests and their habitat.
ii) Prevents soil erosion and silting of rivers that leads to floods.

Q. 32: List two **indirect advantages** of forest.
Ans. 32: The indirect advantages of forest are:

i. A moderating influence on climate and rainfall [lowers temperature and increase rainfall]
ii. Purifies atmosphere and thereby controls pollution.

Q. 33: Name three **types of forest** lands from an administrative perspective.
Ans. 33: The three types of forest lands from an administrative perspective are:

i. Reserved forests-53% area.
ii. Protected forests- 30% area.
iii. Unclassified forests- 17% area.

Q. 34: List two **people's participation movements** to enhance forest cover.
Ans. 34: The Van Mahotsava and Chipko movement have been launched to grow more trees.

Q. 35: List the three main components of **social forestry**.
A: 35: **It has three main components**

a) **Farm forestry-** encourages farmers to plant trees in their own farms.
b) **Woodlots-** Planted by forest departments of the community along road side, canal banks etc.
c) **Community woods**- planted by the community themselves on community lands to be shared equally by them

Q. 36: State two **uses of bamboos** and **forest grass**.
Ans. 36: i) Paper making, ii) Synthetic fibres.

Q. 37: Name one region of India where **thorn and scrub forests** are found.
Ans. 37: Thar Desert.

Q. 38: What are indirect **advantages of forests**?
Ans. 38: Forests help in rainfall by capturing moisture in the air. These affect the climate of an area.

Q. 39: Why is India rich in both **flora and fauna**?
Ans. 39: India is rich in both flora and fauna. Because of varied relief, landforms, terrain, soil, range of temperature, amount and duration of rainfall, different types of flora are found here.

II.A. Complete the table: [done]

Vegetation type	**Climatic Conditions**	**Distribution**	**Important Trees**
1. Tropical evergreen			
2. Tropical Deciduous			
3. Tropical Desert			
4. Littoral			
5. Montane			

II B. List the uses of **Tropical Evergreen or Rain Forest**

Rain forest Trees	**Uses**
1. Rose wood	Furniture, floor boards, Wagon parts, ornamental carvings.
2. Gurjan	Furniture, floor boards, wagon parts, building construction, packaging boxes & tea boxes.
3. Ebony	Furniture, ornamental carvings, musical instruments, sports goods
4. Chaplas (hard, strong & durable)	Furniture, Building construction, ship building, packing cases
5. Telsur (hard, strong & durable)	Furniture, Building construction, Railway sleepers, Carts, Bridges, Boats.
6. Sissoo (hard, strong & durable)	Furniture, Building construction, Railway sleepers, Carts, Agricultural implements, musical implements.
7. Toon	Furniture, tea boxes

II.**C.** List the uses of **Montane forests/ mountain trees/ Alpine forest**

Montane Forest Trees	**Uses**

1. Deodar	Furniture, Railway Sleepers, Floor boards
2. Chir Pine	Furniture, Railway Sleepers, yields Resin & turpentine oil
3. Blue Pine	Furniture, Railway Sleepers, yields Resin & turpentine oil
4. Spruce (Soft white wood)	Furniture, Railway Sleepers, Packaging cases,
5. Walnut	Furniture, Musical instruments, Cabinets
6. Birch	Furniture, Cabinets,
7. Cypress	Furniture, Cabinets
8. Jamun	Furniture, Cabinets

II.D. List the use of **different parts of trees**

Use of Tree	**Uses of Trees**
Leaves	**Palas** for rearing shellac worms
	Mulberry for rearing silk worms
	Tendur Leaves as wrappers for Bidi making
	Neem Leaves are used for health and beauty products
Fruit	**Mahua** fruit for extracting oil
	Ber fruit is eaten raw and is rich in Vitamin C
	Amaltas fruit, pulp, seed and roots have medicinal value in ring worm infections, Asthma, Leprosy etc.
	Semul fruit yields, soft fibre for making pillows
Flowers	**Mahua** for making wine
Bark	**Neem** Bark & roots are medicinal value in treating skin infections, diabetics, and allergies.
	Babool bark & gum have medicinal value
Musical instruments	**Ebony, Sissoo, Shisham, Walnut**
Ship Building	**Chaplas, Teak**
Ornamental Carvings	Rose wood, Ebony, Shisham, Sandalwood, Walnut
Packaging cases	Gurjan, Semul, Spruce
Tea Boxes	Toon, Gurjan
Making Toys	Semul, Toon
Sports Goods	Ebony, Mulberry
Soft white wood	Semul, Spruce
Wagon Parts	Rose wood, Gurjan
Floor boards	Rosewood, Gurjan, Deodar
Agricultural implements	Shisham, Sissoo, Ber
Match boxes	Semul, Chir Pine
Hard, Heavy & Durable wood Construction purposes, Railway sleepers, Agricultural implements, Bridges, Bullock carts	Chaplas, Telsur, Sissoo, Sal, Shisham
Charcoal	Khair & Ber
Yields, Resin & Turpentine oil	Chir Pine & Blue Pine
Cabinets	Chir, Spruce, Birch, Cypress, Jamun, Axelwood

III. Distinguish between the following:

Q. a) **Vegetation and Forest**

Vegetation	**Forest**
Natural vegetation refers to the plant cover that exists over a certain area consisting of several species that have adjusted themselves to the soil and climatic conditions.	Forest refers to a tract of land covered by trees and shrubs.

Q. b) Tropical Evergreen and Tropical Deciduous Forests.

Ans. b) Refer table.

IV. Structured questions:

Q. 1: With reference to the **Tropical Evergreen Forests**, answer the following questions:

a) What are the climatic conditions under which these forests develop?

Ans. a) **Tropical Evergreen or Tropical Rain forests, Climatic Conditions:**

i. Temperature – 25^0 C to 27^0C.
ii. Rainfall – more than 250cm.
iii. Humidity – 77%.

b) Why are the **Western Ghats** covered with thick **evergreen forests** while the **Eastern Ghats** are covered by **deciduous forests**?

Ans: b) **i.** The Western Ghats receive more than 250cm of rainfall and hence the trees have heavy leaf growth (Dense, multi layered forests with dense canopy)

ii. The trees of different species shed their leaves during different times of the year and hence the forests are green throughout the year and hence called tropical evergreen forests.

iii. The Eastern Ghats receive less rainfall 100 to 200cm each year and the forests shed their leaves for six to eight weeks during the hot season to

conserve water therefore these regions have deciduous forests which occur in pure stands.

c) Why do these **forests appear green** all the year round?

Ans. c) i. The trees of different species shed their leaves during different times of the year and hence the forests are green throughout the year and hence called tropical evergreen forests.

ii. Dense leaf growth from heavy rainfall of more than 250 cm.

Q. 2: With reference to the **Tropical Deciduous forests**, answer the following questions:

a) Name the two types of deciduous forests and the trees found in each type.

Moist Deciduous Forests	Dry Deciduous Forests
Sal, Teak, Palas, Shisham, Mahua, Mulberry, Semul, Sandalwood,	Sal, Teak, Palas, Amaltas, Khair and Axle wood

b) What are the characteristics features of these forests?

Ans. b) The characteristics features of **Tropical Deciduous forests** are:

i. They are found in pure stands and therefore easier to exploit for commercial purposes.
ii. They are 30 m to 45 m tall; wood is hard and broad leaved and provides valuable timber and other forests products.
iii. They shed their leaves for six to eight weeks in the hot weather.
iv. The wood is not as heavy as tropical ever green forests and therefore easier to transport.

c) Why are these forests commercially the most exploited ones?

Ans. c) **Tropical Deciduous forests** are commercially the most exploited ones, because:

i. They are found in pure stands and therefore easier to exploit for commercial purposes.
ii. The wood is hard and broad leaved and provides valuable timber and other forests products.
iii. The wood is not as heavy as tropical ever green forests and therefore easier to transport.

Q. 3: With reference to the **Tropical Desert vegetation**, answer the following questions:

a) Mention the areas where this type of vegetation thrives?

Ans. a) **Tropical Desert Forests (Tropical Thorn Forests)**

Semi arid areas of Rajasthan, Gujarat and Madhya Pradesh where the rainfall is less than 50 cm.

b) What are the characteristic features of **Tropical Desert Vegetation**?

Ans. b) The characteristic features of **Tropical Desert Vegetation** are:

i. The forests have xerophytic vegetation
ii. The trees are stunted with large patches of coarse grasses.
iii. The plant remains leaf less for the most of the year and resembles scrub vegetation.

Q. 4: In the context of **Littoral Forests**, answer the following questions:

a) Under what climatic conditions do these forests develop?

Ans. a) **Littoral Forests (Mangrove/Tidal)** Mangrove forests grow in wet, marshy areas in River Deltas and along the coast in salt marshes.

b) What are the characteristic features of these forests?

Ans. b) The characteristic features of **Littoral Forests** are:

i. Aerial stilt like roots.
ii. Trees survive in brackish and fresh water.
iii. Can grow to a height of 30 m.
iv. Epiphytes are common in these trees.

c) Name the important trees found in these forests and mention their economical value.

Ans. c) Mangrove trees are utilized as fuel.

The Sundari trees provide hard durable timber for construction, building purposes & boat making.

E.g. Sundari Trees, Gorjan, Hintal, Amur, Keora and Agar

Q. 5: Describe the **methods of protecting forests** under the following:

a) Increasing the area under forest.

Ans. a) Methods of protecting forests are:

i. Through Afforestation - Planting new forests through Government programmes & local community participation.
ii. Through Re-afforestation - restoration of destroyed forests by planting two saplings for every felled tree.
iii. Preservation of forests through social forestry and agro forestry.

b) **Afforestation**

Ans. b) Afforestation is the plantation of new forests to increase forests/trees cover area in new areas through social forestry, Government programmes like the national forest policy, proper legislation to protect forests and community participation.

c) Using **alternative sources of energy**.

Ans. c) Using renewable energy like solar energy, tidal energy, hydel energy. Stopping the felling of trees for fire wood.

Q. 6: With regards to **social forestry**, answer the following questions:

a) What is **socio forestry**?

Ans. a) i. It refers to the management and protection of forests and afforestation to help environmental, social and rural development.
ii. Social Forestry is also known as Extension forestry, Urban forestry etc
iii. Social forestry aims to satisfy the needs of both the local people and the Government.
iv. **It has three main components** a) **Farm forestry-** encourages farmers to plant trees in their own farms. b) **Woodlots-** Planted by forest departments of the community along road side, canal banks etc. c) **Community woods**- planted by the community themselves on community lands to be shared equally by them

b) Give any three features of **socio forestry**.

Ans. b) Features of Social Forestry are:

i. Afforestation and Re-afforestation with local people's participation.
ii. Ensuring sustainable forestry by silviculture and short crop rotation.
iii. Making use of all unused and fallow land to reduce pressure on the forests.
iv. Making use of easily implementable technology.

c) Give any four of its objectives.

Ans. c) Objectives of **social forestry** are:

i. Providing wood fuel, fodder minor forests products and timber to the rural people
ii. Developing local cottage industry by providing raw materials.
iii. Providing employment opportunities to rural people.
iv. Providing efficient conservation of soil and water.
v. Fulfilling the recreational needs of the local people.

Q. 7: With regard to **agro-forestry**, answer the following questions:

a) What is agro-forestry?

Ans. a) **Agro Forestry**

i. It is a part of Social Forestry and represents an intermediate stage between forestry and agriculture.
ii. It is a sustainable system through combined cultivation of agricultural crops and forests crops and animal rearing.
iii. It ensures efficient use of land in keeping with the socio-cultural practices of the local people.

b) What are the objectives of **agro-forestry**?

Ans. b) The objectives of agro-forestry are:

i. To reduce the pressure on natural forests for obtaining timber as well as other forest products.
ii. To prevent soil erosion and maintain soil fertility
iii. To ensure proper utilization of farm resources and maintain the ecological balance.
iv. The best use of resources like land, manpower and livestock to obtain a variety of forest products such as food, fuel, fodder, livestock etc. while ensuring sustainability from the land.

c) What is the difference between **agro-forestry** and **traditional forestry**?

Ans. c) The difference between agro-forestry and traditional forestry are:

i. Agro Forestry is not vulnerable to population stresses unlike traditional forestry.
ii. It is in keeping with socio-cultural practices of the local population unlike traditional forestry.
iii. It coordinates with the local population to ensure sustainable forestry unlike traditional forestry.

Q. 8: **Montane forests**

a) List the climatic conditions,

Ans. a) Temperature - 12^0C -13^0C.
Rainfall – 100-300cm.
Relative humidity 55 - 65%.

b) Relief

Ans. b) Altitude between 1000- 4000 m.

c) Distribution

Ans. c) Entire Himalayan zone from Kashmir to Sikkim & Arunachal Pradesh.
Vindhyas, Nilgiris [South] and Western Ghats.

d) Characteristic features.

Ans. d) Characteristic features are:

i. Contains mixed species of broad leafed evergreen trees & conifers also contain scrubs, creepers & ferns.
ii. Tropical wet Deciduous forests [Sal] are found at the foot hills of the Himalayas [up to 1200 M].
iii. Moist temperate forests at an altitude of 1000-2000 m. [Oak & chestnut]

iv. Evergreen broad leafed trees like chestnut and oak in the hilly areas of west Bengal & Uttarkhand.
v. Coniferous trees like Chir Pine between 1500-1700m.
vi. Blue pine & spruce between 2250-3000m.
vii. At high altitudes Alpine forests pastures mosses & lichens found. [beyond 3500m]
viii. Tropical to temperate forests in peninsular regions where the height is about 1500 m.

e) Important trees.

Ans. e) Magnolia, laurel, cinchona, wattle jamun, plum etc.

Q. 9: List the aims of the **National Forest Policy**.
Ans. 9: i) Conservation, regeneration and development of forest to maintain biological diversity and genetic resources.
ii) To ensure stable environment and the maintenance of ecological balance.
iii) To check soil erosion, mitigate floods and droughts and to reduce the siltation of rivers and reservoirs.
iv) To check the extension of sand dunes in desert areas [Rajasthan and along the coastal tracts]

Q. 10: What **steps/methods** are being **taken to preserve/ conserve forests**?
Ans. 10: The **steps/methods** being **taken to preserve/ conserve forests** are:

i. Afforestation and reforestation is being introduced in many areas.
ii. Afforestation means planting one sapling to obtain one tree in new areas to extend and enhance forest cover to new areas.
iii. Reforestation refers to planting two saplings for each felled tree to restore forests in previous forest lands that have been destroyed.
iv. Grass lands are been regenerated.
v. Silviculture is being used and fast growing plant species are being planted.
vi. Measures to check forest fires, social forestry and agro forestry are being introduced to reduce pressure on forest.
vii. A forest research institute has been established in Dehra Dun.
viii. The Van Mahotsava and Chipko movement have been launched to grow more trees.

V. Answer the following questions:
Q. 1: Specify two environmental factors which affect the **Natural Vegetation** of India.
Ans. 1: The natural vegetation of India depends mainly on rain and relief. The type of vegetation corresponds to the amount of rainfall received. There are two factors: a) Variation in the amount of rainfall. b) Variation in relief, and c) Soil.

Q. 2: What types of vegetation are found in the **central parts of the plateau**?
Ans. 2: Tropical dry forest and the Arid forest are found in the central parts of the plateau.

Q. 3: Name the type of natural vegetation found in the **western part of the Sahyadris.** Name two commercially valuable trees that grow here.
Ans. 3: Natural vegetation found in the western part are the Tropical Evergreen forests/Tropical Rain forests.
Rosewood and Sisam are the two commercially valuable trees.

Q. 4: What is **community forestry**?
Ans. 4: this forestry involves the raising of trees on public or community lands aimed at providing benefit to the community as whole community forestry is famous in Gujarat, Tamil Nadu, Rajasthan, and Kerala etc.

Q. 5: What do you mean by **urban forestry**?
Ans. 5: Urban forestry pertains to raising and management of trees on public and privately owned lands in and around urban centers. It includes green belts, roadside avenues, recreational parks, wildlife parks etc. Its main objectives are reduction of environment pollution, recreation and improving aesthetic values.

Q. 6: Name three different species of the **tropical rain forests**. Their uses and where they found?
Ans. 6: Sisam – i) It is hard wood.
ii) It is used for making expensive furniture.
Gurjan – i) It is used for house building, railways sleepers and furniture.
ii) It is found in West Bengal, Andaman and Nicobar and Himalayan Region.
Rosewood – i) These are hard fine grained and durable.
ii) They are used for making expensive furniture.
iii) They are found in parts of Kerala, Tamil Nadu and Karnataka [Western parts of Western Ghats]

Q. 7: What is **'Van Mahotsav'**?
Ans. 7: Van Mahotsav was a great movement which was launched in 1950 to make people aware of the importance of planting trees. Every year million of trees are planted in the rainy season. This is the season

Q. 8: Distinguish between **Flora and Vegetation**.

Flora	Vegetation
i) It refers to plant of a particular	i) It refers to the assemblage of plant

region or period listed by species and considered as a group.	species living in association with each other in a given environmental frame.
ii) Different flora can be found in different types of environment.	ii) Similar plants and trees are found in a given ecological frame.
iii) Flora can be put in a category. For example, Indian species brought from Indo-Tibet are known as boreal.	iii) It includes trees, plants and grasses in a particular environment. Forests, shrubs and grasslands are examples of vegetation.

Q. 9: Distinguish between **Vegetation and Forests**.

Vegetation	Forests
i) It includes trees, plants and grasses which grow in a particular environment.	i) This term is generally used to denote a large area covered by trees and shrubs.
ii) Trees shrubs, and grasses grow in a given ecological frame.	ii) Forests are thick with dense growth of trees.
iii) vegetation provides distinct landscape, such as woodland, grass etc.	iii) Forests provide just one landscape.

Q. 10: Write short note on **Tropical Rain Forests**.
Ans. 10: The main features of the tropical rainforests are:

i. These are Evergreen Forests found in **warm and wet regions**.
ii. These are found where the rainfall is more than 250 cm with a **short dry season**.
iii. Trees grow very vigorously, reaching height of above 60 m and above.
iv. Dense leaf growth from heavy rainfall of more than 250 cm.
v. Forest occurs in mixed stands and is difficult to exploit.
vi. They provide hard wood which is heavy and difficult transport.

Q. 11: Short note on **Tropical Deciduous Forests**.
Ans. 11:

i. These forests are found in areas receiving 100cm-200 cm rainfall.
ii. Most wide spread forests in India.
iii. The tree shed their leaves for about six-eight weeks during summer due to water shortage and is called deciduous forests.
iv. Monsoon forests grow over the Sahyadris the north eastern part of the peninsular middle and lower Ganga valley and long the foothills of the Himalayas in the Shiwaliks, The Bhabar and the Tarai.
v. They occur in pure stands and are therefore easier to exploit for commercial purposes.
vi. The wood is not as heavy as tropical evergreen forest and therefore easier to transport.

Q. 12: Short note on **Tropical Dry Deciduous Forests**.
Ans. 12:

i. They are found in areas receiving 50-100cm of rainfall.
ii. These trees shed their leaves completely with the advance of the summer season and give the forests a look of vast grassland with naked trees.
iii. Trees are less dense and small in size. Their normal height 6-9 mts. Their roots are thick and long so that they can use the underground water. They have thick bark to avoid undue evaporation.

Q. 13: Characteristics of the **Arid/Desert Forests**.
Ans. 13: The characteristics of the **Arid/Desert Forests** are:

i. This forest is found in areas receiving less than 50 cm of annual rainfall.
ii. Trees are scattered, and have long roots penetrating deep into the soil in order to get moisture. They have small leaves and thick bark too.
iii. The forests have xerophytic vegetation.
iv. Trees are stunted with large patches of coarse grasses. The plant remains leafless for the most of the year and resembles scrub vegetation.
v. Small needle shape leaves.
vi. Thorny bushes are found.
vii. Thick fleshy stems are found [cactus].
viii. Thorns of sharp pines are found [cactus].
ix. They have long roots that penetrate deep in arid lands for water.

Q. 14: What are **Tidal forests**? Name of major area of the Tidal Forests and name the most important tree found there.
Ans. 14: These forests occur in and around the deltas, estuaries and creeks prone to tidal influences and as such are also known as delta or tidal forests. These forests occur at several places along the coast and confined deltas of the Ganga, Mahanadi, the Godavari, the Krishna and the Cauvary.

i. Mangrove vegetation is characterized by breathing roots or phenmatophores which act as respiratory organs.
ii. It's still like roots remain submerged under water but can be seen at low tide.
iii. This tangled mass of the root helps the plant to survive in the shifting mud of coastal region.
iv. Can grow to a height of 30m.

v. Epiphytes are common in these trees.
vi. Trees survive in brackish and fresh water.

Q. 15: What is Mangrove forest?
Ans. 15: The Mangrove forests occur in and around the delta regions, estuaries and creeks and prove to tidal influence. Mangrove vegetation is characterized by breathing roots or phenmatophores which act as respiratory organs. It's still like roots remain submerged under water but can be seen at low tide. This tangled mass of the root helps the plant to survive in the shifting mud of coastal region. Can grow to a height of 30m. Epiphytes are common in these trees. Trees survive in brackish and fresh water.

Q. 16: With reference to **Mountainous Forests** answer the following.
i) "The vegetation on the Himalayas is up to higher attitude on the Southern slope than on the Northern slopes." Give reason.
Ans. i) In the Himalayan region, the northern slopes usually receive the sunrays only for a few hours that too at a low angle where as in contrast, the southern slopes receive comparatively vertical rays during the middle of the day.
ii) The altitude is the most important factor controlling the type of vegetation in the Mountain Region – Discuss.
Ans. ii) a- The wet temperate forests are found between a height of 1,000-2,000 metres. Evergreen broad leaved trees such as Oak chestnut predominate.
b- Between 1,500-3,000 metres, temperature 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 elevation temperate grassland are common.
c- At high altitude, generally more than 3,600 metres above sea level, temperate forests and grassland gives way to the Alpine vegetation.

Q. 17: What are the main planks of the **revised forest policy** of 1988?
Ans. 17: The main planks of revised forest policy of 1988 is protection, conservation and development of forests are:
i. Maintenance of environment stability through preservation and restoration of ecological balances.
ii. Conservation of natural heritage.
iii. Check on soil erosion and denudation in catchment area of Rivers Lake and reservoirs.
iv. Check on extension of sand dunes in desert areas and coastal regions.
v. Substantial increase in forest/tree cover through marine afforestation and social forestry programmes.
vi. Steps to meet requirements of fuel wood, fodder, minor forest produce and soil timber of rural and tribal population.
vii. Increase in productivity of forests to meet the national needs.
viii. Encouragement of efficient utilization of forest produce and optimum substitution of wood.
ix. Steps to create massive peoples movement with involvement of women to achieve the objectives and minimize pressure on exiting forest.

Q. 18: What is the **Chipko Movement**?
Ans. 18: The Chipko Movement (literally "to stick" in Hindi) was a women movement in the Uttarkhand region which acted to prevent the cutting of trees and reclaim their traditional forests rights that were threatened by the contractor system of the state Forest Department.
One of Chipko most salient features was the mass participation of female villagers. As the backbone of Uttarkhand agrarian economy, women were directly affected by environmental degradation and deforestation and thus connected the issues most easily.

Q. 19: What are the major components of the **Integrated Forest Protection Scheme**?
Ans. 19: The major components of the scheme are:
- Forest fire control and management.
- Strengthening of Infrastructure.
- Survey demarcation and working plan preparation.
- Protection and conservation of sacred groves.
- Conservation and Restoration of unique vegetation and eco-system.
- Control and eradication of forest invasive species.
- Preparedness for meeting challenges of bamboo flowering and improving management of Bamboo forests.

Q. 20: How does Vegetation vary according to the altitude in the **mountain forests**?
Ans. 20: Mountain forests are the forests that are found in the mountain areas of India. According to their altitude Himalayan range shows a succession of vegetation from the tropical to the Alpine.
The table below shows the forest vegetation according to their altitude:
Himalayan [Montane vegetation]:

Vegetation	Altitude
1) Deciduous type	At the foot hills

2) Wet temperate type (dense forest)	1,000 to 2,000 metres.
3)Pine type (oaks, chestnut, sal)	1,500 to 1,750 metres.
4) Temperate grasslands	1,750 to 2,000 metres.
5) Temperate type (broad leafed) evergreen trees of oak, laurels and chestnuts.	2,000 to 3,000 metres
6) Alpine type vegetation transition to Alpine forests and pastures.	Above 3,000 metres.
7) Silver firs, Junipers, pines, birches	3,000 to 4,000 metres.
8) They get stunted as they approach snow line	Snow lines
9) No vegetation above snow line.	Above Snow lines.

Q. 21: Indian **forests classified** based on climate, soil, relief and structure:
Ans. 21: i) The Tropical Evergreen Forests.
ii) The Tropical Deciduous or Monsoon Forests [Moist and dry].
iii) Arid/ tropical desert Forests.
iv) Tidal/ littoral forests.
v) Montane/Alpine/ Himalayan forests.

Q. 22: Mention two reasons to explain why there is a higher percentage of forest cover in **North-East India**.
Ans. 22: High concentration of forest found in North East India are:
i) Climate (temperature 25^0C -27^0C, rainfall more than 200cms).
ii) Due to dense undergrowth, lack of transport facilities.

Q. 23: Give three reasons by various **Social Forestry Programmes** were started in India.
Ans. 23: Three reasons for starting various social forestry programmes are:
i. To reduce pressure on traditional forest by developing plantation of fuel wood fodder and grasses.
ii. Agro forestry involves the raising of trees and agricultural crops either on same land or in close association in such a way that all land including waster patches are put to good use.
iii. Community forestry involves raising of trees on public or community lands aimed at providing benefit to the community as a whole.

Q. 24: What is meant by **Virgin Vegetation**? Name any two regions in India where such vegetation occurs.
Ans. 24: The part of the natural vegetation which remained undisturbed by humans is called virgin vegetation.
The two regions are:
i) In remote and inaccessible parts of Himalaya.
ii) Thar Desert.

Complete the table:

Q. 25: Write any two objectives of **Urban Forestry**.
Ans. 25: Two objectives of India are:
i) Reduction of environmental pollution.
ii) Recreation and improving aesthetic values.

Q. 26: Distinguish between the terms **flora and forests**.

Flora	Forests
1. It refers to plants of a particular region or period listed by species and considered as a group.	1. This term is generally used to denote a large area covered by trees and shrubs.
2. Different flora can be found in different types of environment.	2. Forests are tick with dense growth of trees.
3. Flora can be put to a category. E.g. Indian species from Indo-Tibet known as boreal.	3. Forest provides just one landscape.

	Tropical Evergreen (Rain Forest)	**Tropical Deciduous (Monsoon Deciduous Forests)**	**Tropical Desert (Tropical thorn Forests)**	**Littoral (Tidal Forests, Mangrove Forests)**	**Montana (Alpine Forests)**
Climatic Conditions a. Temperature b. Rainfall c. Humidity	 25 to 27˚ More than 250cm 77%	 25 to 27˚ 100 to 200cm 50 to 80%	 25 to 27˚ Less than 50cm Less than 47%	 Tidal marshy areas More than 100cm of rainfall	Altitude 1000 to 4000mtr. 12 to 13˚ 100 to 300cm 55 to 65%
Distribution	1. Western slopes (Windward) of the Western Ghats Maharashtra, Karnataka & Kerala] 2. Hills of the Northeast 3. Islands of the Lakshadweep, Andaman and Nicobar	1. Eastern Slopes (Leeward) of the Western Ghats, 2. Eastern Ghats 3. UP, Bihar, Karnataka and Tamil Nadu. 4. Terai region.	1. (Semi arid areas)Eastern Rajasthan and Gujarat, Madhya Pradesh.	1. Saline swamps of Sunderbans in West Bengal. 2. Coastal areas of Andhra Pradesh, 3. Andaman & Nicobar Islands. 4. Mahanadi(Odisha), Godavari, Krishna Delta(Andhra Pradesh) 5. Himalayan regions (J&K), Himachal, Uttaranchal, Nepal, Bhutan, Arunachal.	1. Himalayan zone from Kashmir to Sikkim 2. Nilgiris and Vindhyas
Important Features	i. These are dense multilayered forests (Trees of varying heights) ii. Forests occur in mixed stands and hence difficult to exploit. iii. Trees reach heights of more	i. They are found in pure stands and therefore easier to exploit for commercial purposes. ii. They are 30 to 45 m tall, wood is hard and broad leaved and provides valuable timber and other forests products. iii. They shed their	i. The forest have Xerophytic vegetation ii. The trees are stunted with large patches of coarse grasses. iii. The plant remain leaf less for the most of the year and resemble scrub vegetation. iv. Small needle shape	i. Aerial stilt like roots which remains submerged in high tide and seen during low tide. ii. Tangle root system to help tree survive in soft and shifting mud. iii. Trees survive in brackish and fresh water. iv. Can grow to a height of 30m. v. Epiphytes are	i. Distribution – entire Himalayan zone, Altitude of 1500 to 4000 mts. ii. Coniferous Trees – like Chir Pine between 1500 to 2000 mts and Blue Pine and spruce between 2000 to 3000 mts.

	than 60mtrs. iv. Because of the dense canopy sunlight does not penetrate to the forest floor. v. Forests are ever green because different species shed leaves at different times during the year. vi. They provide hardwood which is heavy and difficult to transport.	leaves for six to eight weeks in the hot weather. iv. The wood is not as heavy as tropical ever green forests and therefore easier to transport.	leaves. v. Thorny bushes are found vi. Thick fleshy stems are found[cactus] vii. Thorns of sharp pines are found [cactus] viii. They have long roots that penetrate deep in arid lands for water.	common in these trees. vi. Mainly evergreen species of varying density and height.	iii. Forests contain mixed species of broad leafed (Chest nut, Walnut) evergreen trees and conifers (Chir Pine and Blue Pine). They also contain scrubs, creepers and ferns.
Trees	Rose Wood, Ebony, Chaplas, Telsur, Sissoo, Gurjan, Toon	Sal, Teak, Palas, Shisham, Mahua, Mulberry, Semul, Sandalwood, Amaltas, Khair and Axle wood	Ber, Babool, Neem, Date Palm	Sundari Trees, Gorjan, Hintal, Amur, Keora and Agar.	Deodar, Chir Pine, Blue pine, Spruce, Walnut, Cypress, Birch