Section A

I. Fill in the blanks

1. _____ Wind Farm in Tamil Nadu, _____ in Rajasthan, and _____ in Maharashtra are some of the leading windmill farms in our country

Answer: Muppandal Wind Farm in Tamil Nadu, **Jaisalmer Wind Park** in Rajasthan, and **Brahmanvel Wind Farm** in Maharashtra are some of the leading windmill farms in our country.

2. Most of the water is found in _____ and _____

Answer: Most of the water is found in **oceans** and **seas**.

3. Freshwater is present in the form of ice sheets or _____, _____, or _____ on the surface of the Earth, and underground

Answer: freshwater, which is present in the form of ice sheets or **snow, rivers** or **lakes** on the surface of the Earth, and underground.

4. _____ store rainwater and water seeping from nearby lakes, ponds and rivers.

Answer: Stepwells store rainwater and water seeping from nearby lakes, ponds, and rivers.

5. _____ is the main source of energy on the earth.

Answer: Sunlight is the main source of energy on the earth.

6. _____ and _____also become part of the soil as they decompose and decay.

Answer: Plants and **animals** also become part of the soil as they decompose and decay.

7. Petroleum along with natural gas and coal are commonly called _____.

Answer: Petroleum along with natural gas and coal are commonly called **fossil fuels**.

8. Over-dependence on fossil fuels for transportation and as domestic fuels have resulted in large-scale _____pollution

Answer: Over-dependence on fossil fuels for transportation and domestic fuels has resulted in large-scale **air** pollution.

9. The resources that get renewed, replenished, or restored within a reasonable period of time are called _____.

Answer: The resources that get renewed, replenished, or restored within a reasonable period of time are called **renewable resources**.

10. All living beings, including humans, depend on _____ for their survival

Answer: All living beings, including humans, depend on **natural resources** for their survival.

Section B

Q1. Explain the following observations very briefly.

(a) A firki does not rotate in a closed area.

(b) The arrow of the weather cock points towards a particular direction at a particular moment.

(c) An empty glass in fact is not empty.

(d) Breathing through the mouth may harm you.

Answer:

(a) Lack of air movement

(b) Shows the latest direction of the wind.

(c) Even the so-called empty glass is not empty. It is filled with air.

(d) You may inhale dust if present in the air which may prove harmful.

Q2. Explain Van-Mahotsav.

Answer: Van-Mahotsav is a week-long event celebrated across the country during July. It is a forest festival during which new plants and trees are planted and awareness about respecting forests is raised.

Q3. How does deforestation affect the balance between oxygen and carbon dioxide in the atmosphere?

Answer: Plants take up carbon dioxide exhaled by animals and release oxygen inhaled by animals. Thus, forests maintain a balance between the two gases in the atmosphere. Deforestation disturbs this balance and increases the amount of carbon dioxide in the atmosphere.

Q4. How is "deforestation" different from "reforestation"? Explain the reason for deforestation:

Answer: Deforestation means the clearing or removal of trees from a forested area, essentially destroying a forest, while reforestation is the act of replanting trees in a previously deforested area, aiming to restore a forest that was once present; essentially, deforestation is the destruction of a forest, and reforestation is the process of rebuilding a forest in a previously deforested area.

Removes trees, often for development or agricultural purposes.

Q5. Are forests a renewable resource do you agree?

Answer: Forest is an exhaustible renewable resource because it takes less time to grow plants and replenish in nature

Q6. Why forests are called green lungs?

Answer: The plants help to provide oxygen to animals for respiration. They also maintain the balance of oxygen and carbon dioxide in the atmosphere. That is why forests are called green lungs.

Q7. What is the Chipko movement?

Answer: The Chipko Movement started in the 1970's, was a non-violent movement aimed at the protection and conservation of trees and forests from being destroyed. The name of the Chipko moment originated from the word 'embrace' as the villagers used to hug the trees and protect them from wood cutters from cutting them.

Q8. State whether the soil is Silt, Sand, clay, or loam.

Answer:

The poorest types of soil for growing plants – Sand

Soil particles are smaller than sand and larger than clay – Silt

The soil with the smallest particle - Clay

The soil with little or no space – Clay

The soil with very low nutrients and poor water holding capacity – Sandy

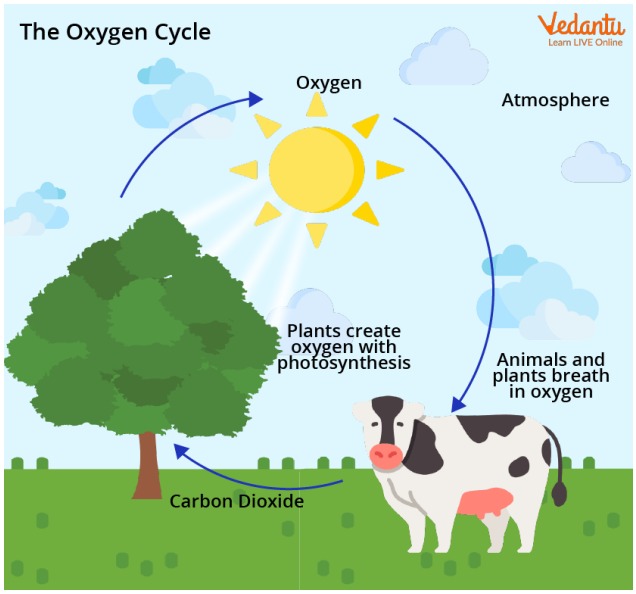
Mainly found near rivers, lakes, and other water bodies – Silt

The densest and heaviest type of soil – Clay

It is a combination of sand, silt and clay - Loamy

Suitable for farming - Loamy

Section C



Q. Explain the role of forests in maintaining the balance between oxygen and carbon dioxide in the atmosphere.

Answer: The green plants and trees present in the forest utilize carbon dioxide from the environment during the process of photosynthesis and release oxygen into the atmosphere. This oxygen is inhaled by the animals during respiration. Animals release carbon dioxide during respiration which is absorbed by plants.

Q2. Write five minerals and their uses.

Answer: The five minerals are

Quartz – Electronics

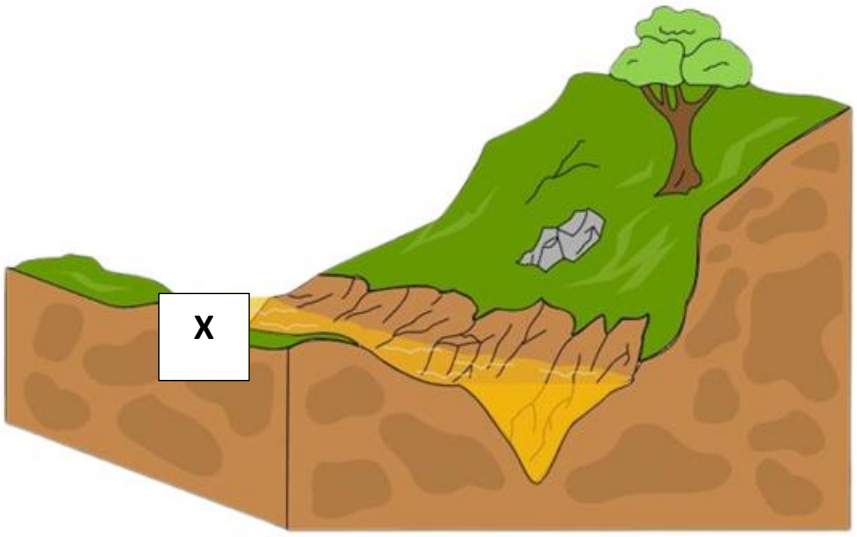
Mica – Cosmetics

Gold – Jewellery

Aluminum – Foil, utensils, and building

Iron – Construction, tools, utensils

Section E



Q1(a): Identify X

Q1(b): Define X

Q1(C): Explain the reason behind X in detail.

Answer:

1(a): Soil Erosion

1(b): Soil erosion is the gradual wearing away of the top layer of soil, or topsoil, by wind, water, or other natural or human-caused forces.

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Natural Soil Erosion: Natural soil erosion is a gradual process that occurs when wind and water remove soil particles from the land. It can happen on all continents and in all climates.

Factors that contribute to natural soil erosion include:

- **Water**

Heavy raindrops can destroy the surface of a field, and excessive rains can wash away topsoil. Running water during floods can also cause erosion.

- **Wind**

Wind can carry off tiny particles, and larger particles can damage vegetation and dislodge soil. Wind can also push particles larger than sand along the ground.

Human activities that can cause soil erosion include:

- **Deforestation**: Removing trees and plants disrupts the soil's stabilizing root systems, making it more vulnerable to erosion.
- **Overgrazing**: Livestock can compact the soil, making it less able to absorb water and more prone to erosion.
- **Plowing fields**: Disrupts the soil's stabilizing roots.
- **Excessive tilling**: Weakened soil structure makes it more susceptible to erosion.
- **Monoculture farming**: Weakened soil structure makes it more susceptible to erosion.

Other human activities that can contribute to soil erosion include: Logging, Mining, and Construction.

Q1(D). Identify Y. How does Y help farmers?

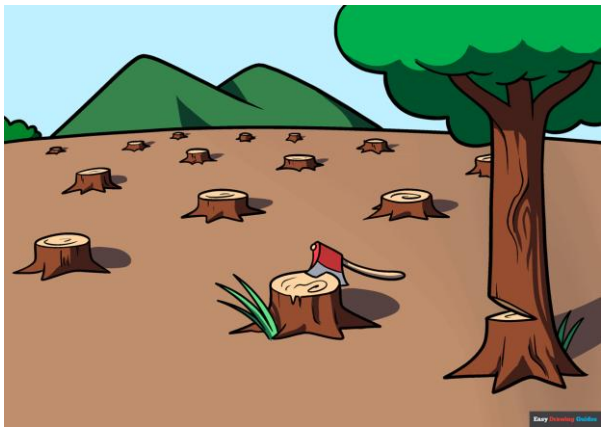
Answer: Terrace Farming.

Terrace farming has many advantages, including:

- **Increased land productivity**: Terrace farming makes sloped fields more productive and easier to farm.
- **Water conservation**: Terrace farming improves rainwater collection and reduces water runoff, which helps conserve water.

- **Soil conservation**: Terrace farming prevents soil erosion by reducing rill formations.
- **Reduced sedimentation and water pollution**: Terrace farming reduces sedimentation and water pollution by keeping water in place long enough for heavy particles to settle.
- **Increased crop yield**: Terrace farming can increase crop yields.

Q1(E): Identify and define the diagram below and its effect.



Answer: Deforestation

Definition: Deforestation, the clearing of trees from forests, has many negative effects on the environment and human life, including

Effect of deforestation:

Climate change: Deforestation contributes to climate change by:

- Releasing carbon dioxide (CO2) into the atmosphere

Soil erosion: Deforestation can lead to soil erosion, which can impact food production and lead to food insecurity.

- **Rainfall patterns**: Forests influence rainfall patterns, and deforestation can disrupt these patterns
- **Water and soil quality**: Forests influence water and soil quality
- **Habitat loss**: Deforestation can lead to habitat loss for countless plant and animal species

- **Desertification**: Deforestation can lead to desertification
- **Fewer crops**: Deforestation can lead to fewer crops
- **Flooding**: Deforestation can lead to flooding

Q1(F): Identify and define the diagram below and its effect on farming.

Answer: Planting rows of trees on one side of an area prevents the wind from eroding the soil. They are also called **shelter belts**.

Soil and water protection: Shelterbelts can help protect soil and water resources from erosion.

Wind protection: Shelterbelts can reduce wind speed for a distance that is many times the height of the shelterbelt itself.

Q2. Identify the diagram below and write its advantages (Hint – formed by decaying matter)

Answer: Manure has many advantages for soil, including:

- Improves soil fertility: Manure is a good source of nutrients like potassium, phosphate, and nitrogen, which help plants grow and develop.
- Increases water retention: Manure improves the soil's ability to hold water, which can help crops produce larger yields.
- Improves soil structure: Manure improves the physical properties of soil, which can help with aeration and drainage.
- Reduces soil erosion: Manure can help reduce soil erosion.
- Helps kill weeds and pests: Manure can help kill weeds and pests.
- Environmentally friendly: Manure is an organic substance that doesn't cause water pollution. It's also a sustainable farming practice and eco-friendly gardening option.
- Cost-effective: Manure is a cost-effective way to improve soil fertility.
- Can be used to produce biofuels: The carbon content and other elements in manure can be used to produce biofuels