Environmental Issues

- **Air pollution**

  - The major cause of air pollution is the burning of fossil fuels in industries and automobiles.

  - **Electrostatic precipitator:** It is used for the removal of particulate matter produced in the exhaust of factories. Scrubber can be used for removing gases like sulphur dioxide.

  - According to CPCB, particulate size 2.5 micrometer and less in diameter (PM 2.5) are harmful to human health.

  - **Catalytic converter:** It is used for removing un-burnt hydrocarbons produced in automobiles.

- **Measures for preventing air pollution –**
  - Planting more tree
  - Using clean, renewable sources of energy such as CNG and bio-fuels
  - Minimising the use of fossil fuels
  - Using catalytic converters in automobiles and electrostatic precipitators in thermal power plants.

- **Global warming**
  - It is defined as the increase in the average temperature of earth's surface.
  - It occurs due to increased concentration of greenhouse gases in the atmosphere.
  - The greenhouse gases include carbon dioxide, methane and water vapour.
  - The maximum contribution towards global warming is caused by carbon dioxide and methane.
  - Global warming is mainly a result of industrialisation, the burning of fossil fuels and deforestation.

- **Effects of global warming:**

  - It disturbs the natural water cycle, which results in changes in the patterns of rainfall.
  - It also results in the melting of polar ice caps and mountain glaciers, thereby resulting in the rise in sea level.

Solid wastes:

- Municipal solid wastes are generated from schools, offices, homes and stores. They are generally rich in glass, metal, paper, food, leather, etc.

- A method for the safe disposal of solid wastes is a **sanitary land fill**.

- **Biodegradable wastes** can be either aerobically on anaerobically broken down using microbes.

- **Non-biodegradable waste** can be recycled, reused, or dumped in landfills.

- **Electronic wastes** include electronic goods such as computers. Such wastes are rich in metals such as copper, iron, silicon.

Agrochemical wastes

- Agrochemicals are the chemical substances like fertilizers, pesticides, weedicides etc used to increase the crop yield.

- The prolonged use of these chemicals have led to the soil and water pollution.

- To check the adverse effects of agrochemicals, organic farming is used.

- It involves use of natural materials and techniques such as organic manure (cow dung manure), compost, biological pest control, and crop rotation.

Radioactive waste

- It is produced during the process of generation of nuclear energy from radioactive materials.
- It is recommended that nuclear wastes be stored for pre-treatment in suitable shielded containers, which are then buried within rocks.

- **Degradation of natural resources** occurs due to improper resource utilisation practices.
- Excessive irrigation of crops increases the concentration of salts in soil (soil salinity).

- **Ozone depletion**

  - Ozone can be classified as good ozone and bad ozone.

  - Good ozone is present in the stratospheric region of the atmosphere while bad ozone is produced by the interaction between the various primary pollutants in the tropospheric layer.

  - The thickness of ozone is measured in terms of Dobson units (DU).

  - The thinned layer of ozone over Antarctica region is referred to as the ozone hole.

    Chlorofluorocarbons or CFCs have caused damage to the stratospheric layer, leading to the formation of the ozone hole.

- High dose of UV-B radiations causes corneal cataract and inflammation of cornea in human beings. The inflammation of cornea is known as snow blindness or sunburn of cornea.

- **Montreal Protocol** is an international treaty signed for controlling the emission of ozone-depleting substances. It was signed in the year 1987.

- **Deforestation** leads to the loss of the top fertile soil, which contains humus. It also leads to the gradual transformation of an inhabitable land into desert **(desertification)**.

- **Reforestation** is the process of restoring a deforested area.

- **Role of people and communities in the conservation of forests:**

- **Chipko movement** was started in the Garhwal region, in the Himalayas, when the local women prevented trees from being cut by hugging them.

- **Bishnoi Community** in Rajasthan showed the courage to move forward and stop soldiers from cutting down trees.