MODULE 5 QB

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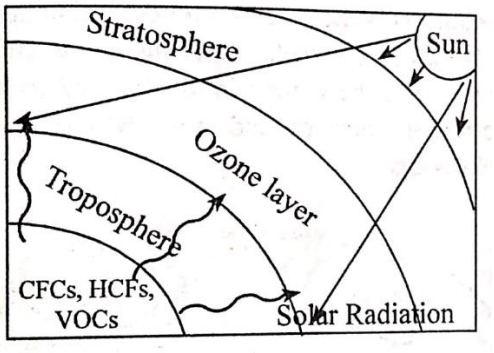
1) What is Ozone layer depletion? How is it caused, what are its effects?

Ans)



- Ozone is made by the action of Daylight on O_2.
- It forms a layer 20 to 50 km over the surface of the Earth.
- This action takes place naturally within the atmosphere however is extremely slow.
- Ozone gas is extremely toxic with powerful odour.
- It is a type of oxygen that has three particles in every atom
- Ozone protects the earth from the sun's harmful ultraviolet radiation.
- It absorbs the sun's ultraviolet radiation preventing it from reaching the earth surface
- This layer within the atmosphere protects life on earth from the harmful UV radiations from the Sun.

Cause:

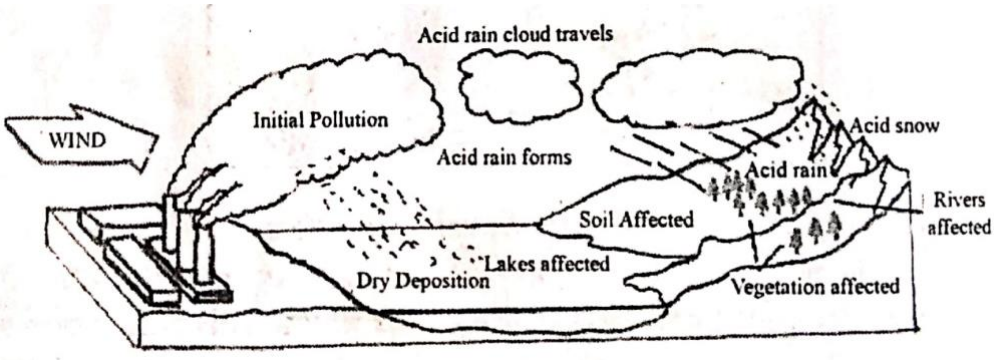
- Chlorofluorocarbons or CFCs that were used as refrigerants and aerosol spray propellants, expose threat to the ozonosphere.

Effects:

- It is taken into consideration as a pollutant at ground level.
- It causes respiratory problems and allergies.
- It also causes harm to vegetation and leads to a deterioration of certain materials like a plastic and Rubber.
- It is seen to cause increased cases of skin most cancers and cataracts.
- It also causes harm to positive vegetation and topline town accordingly.
- It has affected natural natures, food chains and food webs.
- This in turn causes an increase in carbon dioxide due to the decrease in vegetation.

2) Explain acid rain? How is it caused, what are its effects?

Ans)



- Acid rain is known to cause widespread environment damage.
- Acid rain dissolves and washes away vitamins in the soil which are essential for plants.
- Acid rain indirectly affects plants by removing nutrients from the soil during which they grow.
- Acid rain that falls or flows as H_2O to reach rivers, lakes and wetlands, causes the water in them to become acidic. This effects aquatic plants and animals.

- Acid rain also has far achieving effects on flora and fauna. The entire food chain will be affected.

Cause:

- When fossil fuels consisting of Coal Oil and natural gas are burnt chemical substances like a sulphur dioxide and nitrogen oxides are produced
- These Chemicals react with water and different chemical substances in the air to form sulphuric acid nitric acid and the other harmful pollutions like sulphates and nitrates.
- These acid pollutants unfold upwards into the atmosphere and are carried by via air currents to eventually returned to the ground in the form of acid rain fog or snow.

Effects:

- Acid rain dissolves and washes away vitamins in the soil which are essential for plants.
- Acid rain in directly affects plants by removing nutrients from the soil during which they grow
- Acid rain that falls or flows as H_2O to reach rivers lakes and wetlands causes the water in them to become acidic this effects of plant and animal life in aquatic ecosystems.
- Acid rain also has a far-reaching effects on flora and fauna. The entire food chain is disrupted in the end endangering the whole atmosphere
- Acid rain and dry acid deposition damages buildings vehicles and other systems made from stone or steel.

3) When was Environment Protection act implemented? What are its salient features?

Ans) Environmental Protection Act:- Passed in March 1986, it came into force on 19 November 1986.

The salient features of the act are:

- The central government shall have the power to take all such measures as it deems necessary or useful for the purpose of protecting and improving the quality of the environment and preventing controlling and decreasing environmental pollution.
- No person carrying on any industry operation or process shell discharge Amity any environmental pollutants are permitted to do so in excess of such standard as may be prescribed.
- No person shall handle or cause to be handled any hazardous substances except in accordance with such procedure and after complaining with such safeguards as may be prescribed.
- The central government or any officer empowered by it, shall have power to take, for the purpose of analysis, sample of air, water, soil or other substances from any premises, factory etc.as may be prescribed.
- Whoever fails to comply with or violate any of the provisions of this act will be punishable with imprisonment or with fine or with both.

4) What is Climate change? How is it caused, what are its effects?

Ans) Today climate change is an accepted fact unlike a few decades ago when the scientist and government argued about its existence.

Cause:

- Increase in global concentration of carbon dioxide.
- The gas released through human activities such as a deforestation and burning of fossil fuels.
- Natural processes such as respiration and volcanic eruptions.

Effects:

- Reduces the supply of water for consuming and washing in the course of drought and floods.
- Water can be infected and sewage systems can be damaged.
- The danger of increased spread of infectious diseases increases.
- Food and water shortages leads to conflicts the practical implications for public health.
- Changes in climate will boom the spread of sickness including Malaria.

- The frequency of weather extremes is likely to increase floods or drought.
- All these are signs that are the earth is unwell.

5) What is nuclear holocaust? Explain with a case study.

Ans) A nuclear holocaust is a theoretical scenario where the mass detonation of nuclear weapons causes globally widespread destruction and radioactive fallout.

The use of nuclear energy in war has had a devastating effect on man and earth.

Case Study:

- Hiroshima and Nagasaki incident in the course of World War 2 is one of the worst disasters.
- These atomic bombs killed a lot of people.
- It left hundreds of people injured and devastated for miles around.
- Within the first few months after the bombing, it is estimated that between 90,000 and 1,66,000 people died in Hiroshima, while another 60,000 to 80,000 died in Nagasaki.
- These deaths include those who died due to the force and excruciating heat of the explosions.
- There were also deaths caused by acute radiation exposure.
- The results of the radiation from the nuclear bombs can be visible nowadays too.
- It is in the shape of most cancers and genetic mutations in the affected children and survivors of the incident.

6) When was Wildlife Protection Act implemented? What are its salient feature?

Ans) The wildlife act came into effect in 1972.

Salient Features:

- This act considers national parks and wildlife sanctuaries as protected areas to conserve wildlife.
- Wildlife populations are regularly monitored and management strategies are formulated to protect them.
- The act covers the rights of forest dwellers.
- The act permits restricted grazing in sanctuaries but prohibits the same in national parks.
- The act also prohibits collection of non Forest Timber which might not harm the system.
- The act provides a comprehensive list of endangered species and prohibits the hunting of the same.
- The act provide for setting up National Park, wildlife sanctuary etc.
- The act provides for construction of Central zoo authority.
- The act imposes a ban on trade or commerce of commercial animals.
- The act provides legal powers to officers to punish offenders.
- Under this act, captive breeding programes for endangered species have been initiated.

7) Enumerate the impact of Global warming on our mother nature.

Ans)

- About 75% of the solar energy reaching the Earth is absorbed on the earth's surface which increases its temperature.
- The rest of the heat radiates back to the atmosphere.
- Some of the heat is trapped by greenhouse gases, mostly carbon dioxide.
- As carbon dioxide is released by various human activities, it is rapidly increasing. This is causing global warming.
- The average surface temperature is about $15° C$.
- This is about $33° C$ higher than it would be in the absence of the greenhouse effect.
- Human activities during the last few decades of industrialisation and population growth have polluted the atmosphere to the extent that it has seriously began to affect the climate.
- Carbon dioxide in the atmosphere has increased by 31% since pre-industrial times, causing more heat to be trapped in the lower atmosphere.

8) What are the regulations governing water pollution prevention act?

Ans)

- The Government has formulated this Act in 1974.
- The main objectives of the Water Act are to provide for prevention, control and reduction of water pollution and the maintenance or restoration of water.
- It is designed to assess pollution levels and punish polluters.
- The Central Government and State Governments have set up Pollution Control Boards that monitor water pollution.
- The act empowers the board to take

  - Water samples for analysis

  - Govern discharge of sewage

  - Revision of policies

- The act empowers the board to set minimum and maximum penalties.
- The act empowers the board to publish the names of offenders.

9) Discuss Forest Conservation Act. What are its salient features?

Ans)

- The Indian Forest Act was started in 1927.
- The Act gave the Government and Forest Department the power to create Reserved Forests and the right to use Reserved Forests for Government use alone.
- It also created Protected Forests, in which the use of resources by local people was controlled.
- Some forests were also to be controlled by a village community, and these were called Village Forests.

The salient features of the act are as follows:

- The state government has been empowered under this act to use the forests only for forestry purposes.
- It makes provision for conservation of all types of forests.
- Any illegal non forest activity within a forest area can be immediately stopped under this act.

Reserved forests:

These forests are under the direct supervision of the government and no public entry is allowed for collection of timber or grazing of cattle.

Protected forests:

These forests are looked after by the government, but the local people are allowed to collect fuel wood/ timber and graze their cattle without causing serious damage to the forests.

Village forests:

Reserved forests assigned to a village community are called village forests.

Private protected forests:

These forest lands refer to protected areas inside India whose land rights are owned by an individual or a corporation/ organization.

10) What are the issues involved in enforcement of environmental legislation?

Ans)

- Environmental legislation is evolved to protect our environment as a whole, our health, and the earth's resources.

- The presence of a legislation to protect air, water, soil, etc. does not necessarily mean that the problem is addressed.
- Once a legislation is made at the global, National or State level, it has to be implemented.
- For a successful environmental legislation to be implemented, there has to be an effective agency to collect relevant data, process it and pass it on to a law enforcement agency.
- If the law or rule is broken by an individual or institution, this has to be punished through the legal process.
- The interested concerned individual must file a Public Interest Litigation (PIL) for the protection of the environment.
- People need to keep an eye and inform the concerned and see to it that actions are taken against offenders.

11) Write a short note on Environment Impact Assessment (EIA).

Ans)

- For all development projects, whether Government or Private, the MoEF requires an impact assessment done by a competent organisation.
- EIAs are expected to indicate what the likely impacts could be if the project is passed.
- The EIA must look into physical, biological and social parameters.
- The EIA must define what impact it would have on water, soil and air.
- It also requires that a list of flora and fauna identified in the region is documented.
- It needs to specify if there are any endangered species whose habitat or life could be adversely affected.
- The Ministry of Environment and Forests (MoEF) has identified a large number of projects that need clearance on environmental grounds.
- After the Environmental Protection Act of 1986 was passed, an EIA to get an environmental clearance for a project became mandatory.
- To get an environmental clearance the proposer of the project is expected to apply to the State Pollution Control Board.
- The PCB checks and confirms that the EIA can be initiated.
- The Agency that does the assessment submits a Report to the proposer.
- This may take several months.