

## EXERCISE QUESTIONS

### CHAPTER-16 ENVIRONMENTAL ISSUES

**1. What are the various constituents of domestic sewage? Discuss the effects of sewage discharge on a river.**

**Ans** - Domestic sewage is the wastewater that is discharged into sewer systems from toilets, kitchens, and washing machines. Faecal debris, colloidal particles, pathogens, small pieces of food left over, fibrous matter, grit, nitrates, phosphates, and other salts are all present in domestic sewage.

a river's response to sewage discharge

1. Sewage discharge increases biological oxygen demand, lowering river dissolved oxygen levels.
2. Fish and various other aquatic species in the river go extinct due to sewage discharge.
3. Water turns foul-smelling, muddy, and unsafe for human consumption.

**2. List all the wastes that you generate, at home, school or during your trips to other places. Could you very easily reduce the generation of these wastes? Which would be difficult or rather impossible to reduce?**

**Ans** - Plastic bags, paper napkins, toiletries, kitchen garbage (such peelings from fruits and vegetables and tea leaves), domestic sewage, glass, and other materials are among the wastes produced at home.

Wastes produced at schools include used paper, plastic, fruit and vegetable peels, food packaging, sewage, and more.

Plastic, paper, vegetable and fruit peels, disposable cups, plates, utensils, and other materials are among the waste produced during outings or picnics.

Yes, with careful use of the materials mentioned above, wastes can be eliminated quickly. By using recycled paper and writing on both sides of the page, paper waste can be reduced. By recycling and reusing, waste from plastic and glass can also be decreased. Additionally, replacing plastic bags with biodegradable jute bags helps cut down on the amount of garbage produced at home, at school, or while on vacation.

**3. Discuss the causes and effects of global warming. What measures need to be taken to control global warming?**

**Ans -** The burning of fossil fuels extensively in factories and automobiles is one of the causes of global warming.

i) The use of polluting automobiles.

Deforestation, third.

As a result of the explosive development of weeds and the rise in plant diseases and pest attacks brought on by global warming, agricultural productivity in tropical and subtropical regions is decreased.

ii) As a result of the temperature increase, glaciers and the polar ice caps are melting more quickly, raising the sea level.

iii) Due to abrupt changes in the weather and climate, there is an increase in the likelihood of cyclones and floods.

iv) The agricultural sector and country's general health are impacted by variations in the rainfall pattern.

**4. Match the items given in column A and B:**

**Column A**

**Column B**

**(a) Catalytic converter**

**(i) Particulate matter**

**(b) Electrostatic precipitator** **(ii) Carbon monoxide and nitrogen oxides**

**(c) Earmuffs**

**(iii) High noise level**

**(d) Landfills**

**(iv) Solid wastes**

**Ans -**

<b>Column A</b>		<b>Column B</b>
Catalytic converter	<b>(ii)</b>	Carbon monoxide and nitrogen oxides
Electrostatic precipitator	<b>(i)</b>	Particulate matter
Earmuffs	<b>(iii)</b>	High noise level
Landfills	<b>(iv)</b>	Solid wastes

**5. Write critical notes on the following:**

**(a) Eutrophication**

**(b) Biological magnification**

**(c) Groundwater depletion and ways for its replenishment**

**Ans -** (a) Eutrophication is the term used to describe the excessive growth of algae, plants, and animals in water bodies as a result of the nitrogen and phosphorous nutrient enrichment of the water body. Eutrophication can occur naturally or quickly. Natural ageing results in the enrichment of the water

body with nutrients in the case of natural eutrophication. In a human lifetime, this sluggish progress cannot be noticed. A youthful body of water has cool, pure water that isn't enriched with nutrients. Runoff and streams that drain into it contribute nutrients to the environment. The water warms up and gets shallower with time. This causes it to grow marsh plants and produce floating plants. The aquatic body progressively transforms into a land mass as it is surrounded by coastlines.

(b) Biological amplification is the process through which dangerous compounds are concentrated at each trophic level in a food chain that follows. Insecticides and other dangerous chemicals are employed to eradicate pests in fields, but plants absorb these substances along with other nutrients from the soil.

(c) The water table has dropped by 10 to 30 metres as a result of the massive amount of groundwater that is being pumped out for usage in urban and agricultural regions.

methods for replenishing groundwater

1. Rainwater harvesting - By preserving the rainwater, groundwater can be refilled.
2. Sprinkler and subsurface irrigation methods—Using these methods results in less groundwater being used for irrigation.
3. Tree planting

## **6. Why does ozone hole form over Antarctica? How will enhanced ultraviolet radiation affect us?**

**Ans -** The ozone hole is a localised decrease in the ozone layer's thickness. It was initially found above Antarctica. The natural wind circulation known as the Polar vortex completely isolates Antarctic air from the rest of the planet. A steady release of CFCs from the atmosphere into the stratosphere is pushed

toward the poles by clouds. The environment in Antarctica is conducive to the creation of ozone holes throughout the winter. Low temperatures and a lack of sunlight make it easier for ice clouds to form, which then act as a catalyst for the chlorine reaction.

Effects of UV radiation

- i. Skin cancer is brought on by UV rays
- ii. The likelihood of blindness and cataract in the eyes is raised.
- iii. Ineffectiveness of immune system

**7. Discuss the role of women and communities in protection and conservation of forests.**

**Ans -** Environmental conservation movements have benefited greatly from the contributions of women and communities.

(i) Case study of the community in Bishnoi: The community of Bishnoi in Rajasthan firmly adheres to the idea of coexisting harmoniously with nature. The Maharaja of Jodhpur instructed his officials to gather wood in 1731 so that his magnificent palace could be built. The minister and the workers visited the village of Bishnoi for this reason. There, a Bishnoi woman by the name of Amrita Devi bravely intervened to stop them from felling trees alongside her daughter and hundreds of other Bishnois. They died at the hands of the king's warriors while embracing the trees.

(ii) Chipko movement: In the Garhwal region of the Himalayas, the Chipko movement was founded in 1974.

**8. What measures, as an individual, would you take to reduce environmental pollution?**

**Ans -** The following actions can be made to lessen pollution in the environment:

1. Growing the quantity of trees planted
2. By forgoing the use of our own vehicles for short trips, we can limit the consumption of fossil fuels.
3. Clean fuel like CNG, which is economical and beneficial to the environment, should be used in our cars.
4. Wastes must be divided into biodegradable and non-biodegradable categories. in order to make garbage sorting simple
5. Promote the usage of reduce, reuse, and recycle
6. Vehicles must have catalytic converters.
7. We shouldn't light fireworks on fire.

**9. Discuss briefly the following:**

**(a) Radioactive wastes**

**(b) Defunct ships and e-wastes**

**(c) Municipal solid wastes**

**Ans -** (a) radioactive waste produced by nuclear power facilities that discharge radioactivity from their element's nuclides. Depending on the intensity of radioactivity, there are three different forms of radioactive waste: low level, moderate level, and high level. High-level radiations are the most harmful of them and are released when nuclear reactors accidentally leak. Tumors, malignancies, and genetic abnormalities are brought on by these radiations.

In addition to chilling, high-level wastes require specific safeguards during handling and transportation.

(b) Defunct ships are those that are no longer in operation. In some nations, old ships can be dismantled for scrap metal. Heavy metals including asbestos, lead, mercury, and other substances can be found on defunct ships. E-wastes, also known as electronic wastes, are wastes produced by electronic devices including computers, televisions, and refrigerators, among others.

(c) Solid municipal wastes include: Municipal solid trash is produced by businesses, residences, workplaces, and retail outlets. Glass, metal, paper scraps, food, rubber, leather, and textiles are typically abundant. Open landfills for municipal waste provide as a haven for mosquitoes, flies, and other pathogen-carrying bacteria. Therefore, it is essential to properly dispose of municipal solid trash.

#### **10. What initiatives were taken for reducing vehicular air pollution in Delhi? Has air quality improved in Delhi?**

**Ans** -The Delhi State Government implemented the following actions to enhance air quality:

- (i) Using unleaded gasoline.
- (ii).Buses powered by CNG are utilised for public transportation
- (iii).Utilizing low-sulfur diesel is
- (iv) Phase-out of outdated automobiles.
- (v) The use of vehicle Euro-II standards.
- (vi)Using catalytic converters in automobiles

#### **11. Discuss briefly the following :**

**(a) Greenhouse gases**

**(b) Catalytic converter**

**(c) Ultraviolet B**

**Ans** – (a) greenhouse gases -The gases known as greenhouse gases include carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, and others. Long wave radiations are able to enter the atmosphere through greenhouse gases but are unable to exit, being stuck there. The greenhouse effect is a result of this. Methane, carbon dioxide, and chlorofluorocarbons all play a role

1. Carbon dioxide is the primary cause of both the increased burning of fossil fuels and the clearing of forests.
2. Methane: incomplete combustions, anaerobic decomposition, chimneys, paddy fields, etc. are the main causes of the rise.
3. Chlorofluorocarbons: These are carbon and halogen compounds that are utilised as propellants in a variety of products, including plastic foams, aerosols, refrigerants, fire extinguishers, and jet fuel.
4. Nitrous oxide is produced during the burning of fuels high in nitrogen.

(b) catalytic convertor-They are installed in cars to lower the emission of dangerous gases. As catalysts, platinum, palladium, and rhodium are present. Here, because the exhaust travels through the catalytic converter, unburned hydrocarbons are converted to carbon dioxide and water, and carbon monoxide and nitric oxide are changed to carbon dioxide and nitrogen gas, respectively. This helps to reduce the emission of polluting gases by cars.

(c) ultraviolet B: The electromagnetic radiation known as ultraviolet-B has a shorter wavelength than visible light. It is a dangerous radiation that enters the Earth's atmosphere through the ozone hole from sunlight. It presents numerous health risks to people. DNA is damaged by UVB, which also starts the ageing process. In addition, it causes skin cancer and skin browning.