Pollution of Air and Water

1. **What is Air Pollution?**
   Ans. Air is a mixture of many gases that are present in a fixed ratio. When the ratio is disturbed for any reason, the air is said to be polluted.
   And the substances which cause pollution of air are called air pollutant.

2. **Air Pollutants are how many types?**
   Ans. Air Pollutants are two types:
   a. Gaseous air Pollutants
   b. Solid Air Pollutants

3. **What are Gaseous Air Pollutants?**
   Ans. The pollutants present in the gases, are called gaseous air pollutants.
   Ex: Carbon Monoxide, Oxides of Nitrogen and Sulphur etc.

4. **What are Solid Air Pollutants?**
   Ans. The pollutants in the form of solid are called solid air pollutants.
   Ex: Smoke, Dust, Suspended particles etc.

5. **Why Carbon Monoxide harmful?**
   Ans. It is a highly poisonous gas that is produced by incomplete combustion of fuels such as petrol and diesel. Carbon Monoxide combines with hemoglobin and decreases oxygen carrying capacity. As a result, blood becomes oxygen deficient and causes unconsciousness or death.

6. **What is Global Worming?**
   Ans. The concentration of Carbon Di Oxide is increasing day by day due to increasing automobile, burning of coal and other fossil fuel, deforestation etc. The increased concentration of CO_2 traps solar radiation which in turn increases atmospheric temperature called Global Worming.

7. **What are the harmful effects of Sulphur di oxides?**
   Ans. Fuels contain small amount of Sulphur. On burning these, Sulphur combines with oxygen to produce their oxides. Sulphur Di Oxide can cause respiratory problems including permanent lung damage.

8. **What is Smog?**
   Ans. Nitrogen present in fuels, on burning, reacts with oxygen to produce their oxides. These oxides combine with other air pollutants and fog to form Smog. This Smog causes breathing difficulties such as asthma, cough, and wheezing in children.

9. **What is Chlorofluorocarbon (CFC)?**
   Ans. Chlorofluorocarbon is one type of pollutant that are used in aerosol sprey and as refrigerant in the old model of refrigerators and air conditioners. CFC Damages the Ozone layer of the atmosphere, which absorb harmful ultraviolet rays come from sun and protects us.

10. **What is Acid Rain?**
    Ans. Burning of Coal, petrol and diesel produces carbon di oxide, carbon monoxide, oxides of nitrogen, oxides of Sulphur etc. all these pollutants remain in air. Oxides of nitrogen and Sulphur react with water vapor present in atmosphere to form nitric acid and sulphuric acid. This acids dropdown with rain makes rain acetic. This is called acid rain.

11. **What are the effects of Acid Rain?**
    Ans. Damaging effects of acid rain are:
    a. Acid rain is harmful to aquatic life because it kills fishes and other aquatic animals and plants
    b. Acid Rain decreases the soil fertility
    c. Acid Rain corrodes the marble of the historical monuments like Taj mahal. This phenomenon is called “Marble Cancer”.

12. **What is Marble Cancer?**
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13. **What is Greenhouse Effect?**
    Ans. Carbon dioxide is not directly harmful but its increasing percentage may create adverse effects in the long run. Excess Carbon dioxide in air has the property of trapping the heat of sunlight in the same way as the glass walls of greenhouse. Thus, trapping of heat by these gases is known as green house effect.
    The greenhouse effect leads to an increase in temperature of the earth. This is called global warming.
    In addition to carbon dioxide, methane, nitrous oxide and water vapor are the other gases that causes Global Worming.

14. **How can we control Air Pollution?**
    Ans. Air Pollution can be controlled by the following methods:
    a. Reduce the use of Fissile fuel by switching to alternative energy sources like solar energy, hydropower and wind energy.
    b. Scrubbing down industrial emission with water before releasing them into air helps to reduce air pollutions.
    c. Some cars have a special device called catalytic converter which can change harmful exhaust gases like carbon monoxide and nitrogen dioxide into harmless carbon di oxide and nitrogen and water.
    d. Switching to unleaded petrol or compressed natural gas has reduce air pollution in our metro cities considerably.
    e. Replacing wood, coal and kerosene with LPG for domestic use can reduce pollution.
    f. Composting of dead leaves and twigs is a better option rather than burning.
    g. Plantation of trees can reduce air pollution. Because trees absorb harmful carbon di oxides from the air and emits Oxygen.

15. **What is Water Pollutant?**
    Ans. Water Pollution may be defined as the adverse change in the composition or condition of water such that it becomes less suitable for which it would be suitable in its natural state. The substances that pollute water are called water pollutants.

16. **What are the main sources of water pollutions?**
    Ans. The sources of water pollutions are as below:
    a. Discharge of untreated domestic sewage into rivers leads to water pollution.
    b. Excessive use of fertilizers and pesticides in agriculture also causes water pollution.
    c. Discharge of toxic waste from factories and refineries etc. pollute water.
    d. Oil spills that that are accidental release of oil by tankers in oceans may cause marine water pollution.
    e. Inappropriate disposal of litter such as plastic bags, wrappers and bottles lead to water pollution.

17. **Which types of diseases can occur due to water pollution?**
    Ans. Water Born diseases like typhoid, diarrhea, jaundice, cholera, dysentery, hepatitis etc. can occur due to water pollution.

18. **What is Eutrophication?**
    Ans. Eutrophication is an increase in chemical nutrients containing nitrogen or phosphorus in an aquatic ecosystem.
    This nutrient pollution occurs due to the release of sewage effluent, urban waste water run-off or the run of carrying excess of fertilizers into natural water. This promotes excessive plant growth and decay, causes severe reduction in water quality.

19. **How can we prevent Water Pollution?**
    Ans. Water pollution can be prevented by the following ways:
    a. Laws for industrial units should be strictly implemented so that polluted water is not disposed off directly into the rivers.
    b. Industrial effluent should be treated chemically to remove toxic substances before being released in river.
    c. Avoid overuse of pesticides and fertilizers.
    d. Sewage should be treated before discharging in the river.
    e. At the individual level we should consciously save water and not waste it.
    f. Do not throw garbage into rivers or lakes. The rivers and lakes should be clean time to time.

20. **What is Potable Water?**
    Ans. The water should look clear without any smell, and should not contain microorganisms or air dissolved impurities. So, it is essential to purify water before drinking. Water which is suitable for drinking is called Potable Water.

21. **How can we purify water?**
    Ans. Purification of water involves both physical and chemical methods.
    a. **Filtration:** Suspended impurities present in water can be removed by filtering water through a fine muslin cloth.
    b. **Boiling:** Filtered water can be made germ free by boiling for 10-15 minutes.
    c. **Treatment with chemicals:** Filtered water can be made germ-free by adding certain chemicals e.g., potassium permanganate or chlorine tablets. Treatment of water that involves the use of chlorine tablets or bleaching powder is called Chlorination.

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