

Not For Drink - Not For Breath

Improve your learning

Q. 1. How does air pollution lead to water pollution?

Answer : Air pollution leads to water pollution in the following listed ways:-

- i.) Major pollutants in the air are Carbon, nitrogen and sulfur oxides.
- ii.) These oxides dissolve with the rain water during precipitation.
- iii.) Mixing of these oxides leads to the formation of Acids like nitric acid, sulphuric acid, carbonic acid etc.
- iv.) These acids mix with pure water of the river and goes deep inside soil to mix with ground water and hence lead to water pollution.
- v.) Polluted air also contains mercury as a major pollutant. This mercury is dissolved into the water during rain. Bacteria in water transform it into harmful methyl mercury which makes survival of aquatic life difficult.

Q. 2. What steps can be taken up to control air pollution and water pollution?

Answer : Steps that can be taken to control air and water pollution are as follows:-

- i.) Preventing harmful substances like harmful gases, particulates and chemical wastes produced in industries to be released directly into the air and pure water sources.
- ii.) We should check if our vehicles are properly serviced or not. Incomplete combustion of fuels generates very harmful gases like carbon mono oxide which cause air pollution. Industries should also use updated machinery.



Fig-4 Burning fuel

iii) Focusing our life on the principles of 3 R's i.e. Reuse, Reduce and Recycle. For example: using bicycles for shorter distances (reducing the use of fuel) etc.

Q. 3. Why does the increased level of nutrients in the water affect the survival of aquatic organisms?

Answer : Increased level of nutrients in water leads to more growth of algae and plants inside the water. For example nitrogen supports the plant life in the sea.

But problem is that water at a given temperature and pressure can only dissolve a limited amount of gases like oxygen and there is then a competition between newly grown plants and algae with aquatic organisms for consuming this limited oxygen.

In these ways increased the level of nutrients in the water affect the survival of aquatic organisms.

Q. 4. Road side plants cannot grow properly - Find your own reasons and explain your argument.

Answer : There are numerous factors which cause road side plants to not grow properly:-

i) Poor care taking and less watering.

ii) High pollution around plants. Though this factor is in much sense favorable for plant life certain plants cannot bear the excessive pollution. Recall plants do require oxygen to breathe.

iii) They are generally also destroyed by the stray animals or environmental hazards like heavy raining etc.

Q. 5. Sudheer is a traffic constable. What do you think about his health. Give some suggestions to protect his health during duty period.

Answer : The health of Sudheer isn't fine as he is exposed to a vast amount of harmful gases on roads. Following diseases can happen :-

i) A cough

ii) Blocked nose

iii) Watering of eyes

iii) Breathlessness, wheezing and chest tightness.

Protecting Sudheer :-

- i) He must wear a mask on his duty to keep harmful gases away.
- ii) He should frequently wash with fresh water. This helps to keep skin infection away.
- iii) He should have a frequent health checkup so that any problem can be treated without it being large.

Q. 6. Write a short note on the effects of water pollution in your village suggest precautions

Answer : Effects of water pollution in my village:-

- i) Many people are suffering from problems like diarrhea, jaundice, typhoid, and numerous skin infections.
- ii) Fishes in the pond are all dead.
- iii) The soil is prone to infertility because of harmful chemicals in the water.
- iv) The beauty of river banks is lost under heaps of polyethylene

Precautions:-

- i) Preventing dirty water to be mixed with drinkable sources with the help of proper drainage systems.
- ii) Preventing use of excess fertilizers. These fertilizers are NON-Biodegradable and hence ultimately goes into water bodies.
- iii) Minimising use of polyethene and preventing them to be thrown near water bodies.

Q. 7. Visit a pollution check center. Observe the process of conducting a pollution check and record your findings. You may consider the following areas for your record:

An average number of vehicles checked in a certain time period, Time is taken to check each vehicle, Pollutants checked for, The process of testing, Permissible limits of emission of various pollutants, Measures taken if the emitted gases are above the permissible limits.

Answer :



Fig-1 Pollution checkup

Average number of vehicles checked in a certain time period

⇒ 200 cars per day

Time is taken to check each vehicle –

⇒ 2 to 3 mins

Pollutants checked for -

⇒ K value, Oxygen level, Carbon di oxide level, carbon mono oxide

The process of testing-

⇒ The process is done by using a machine using a machine. When it is brought near engine it gives the amount of pollutants in the smoke of vehicle.

Permissible limits of emission of various pollutants

⇒ Maximum carbon di oxide that can be present is 200 ppm. Carbon mono oxide is .3 percent standard.

Measures were taken if the emitted gases are above the permissible limits.

⇒ A certificate is issued if everything is normal.



Fig-2 Pollution certificate

⇒ The vehicle owner is asked to have the vehicle serviced if abnormalities are found.

Q. 8. Organize a field visit to a pond/lake / river present in or near to your village with the help of your teachers.

Observations followed by discussion could focus on... The history of the pond or lake or river, Water resources available other than that river/ pond/ or lake, Cultural traditions, Pollution concerns, Source of pollution, Effects of pollution on the people living by the river side as well as those living far away.

Answer : I made a visit to river Yamuna in Delhi. It has been a major source of drinking water for the most of people in Delhi.



Fig-8 Polluted water stream

History: My grandma used to tell me that they often visited the banks because it was so pleasuring going there then. But now that pleasure is lost under heaps of polyethylene.

Water resources available: Apart from river Yamuna there are many lakes and ponds near Delhi.

Cultural Traditions: River Yamuna is worshipped as a goddess by the people. Remnants of dead corpses are drowned in it for religious concerns.

Pollution and source of pollution:

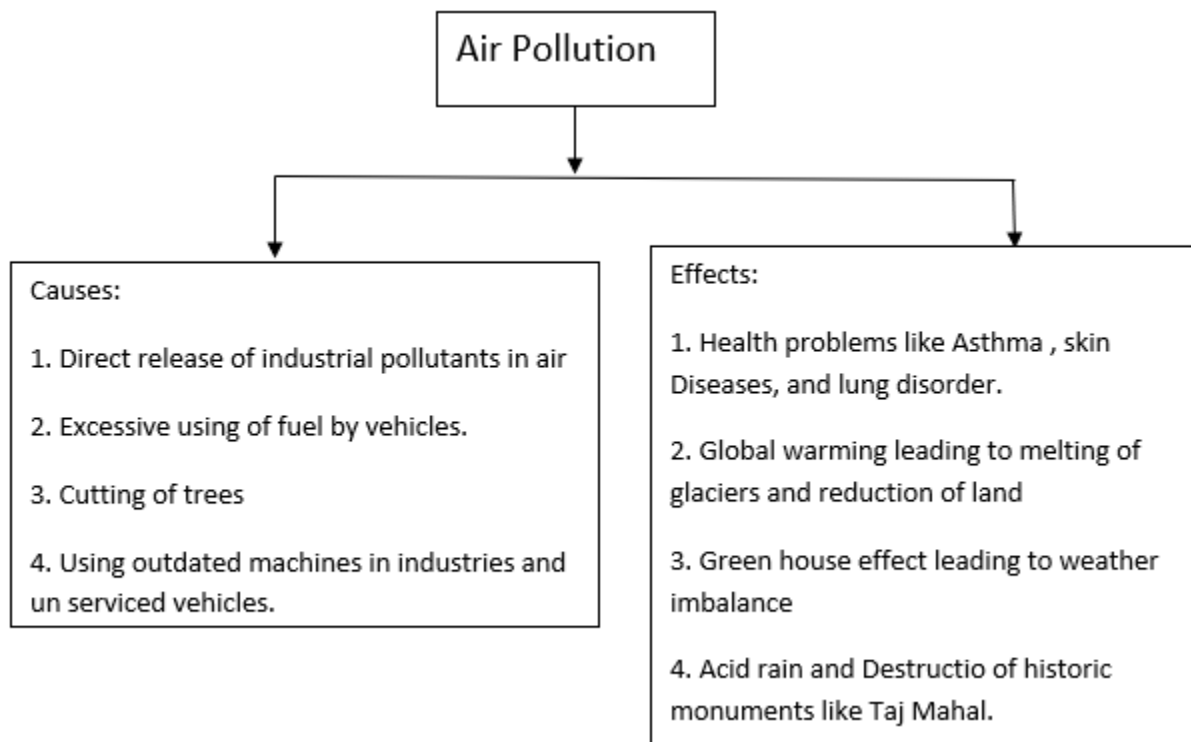
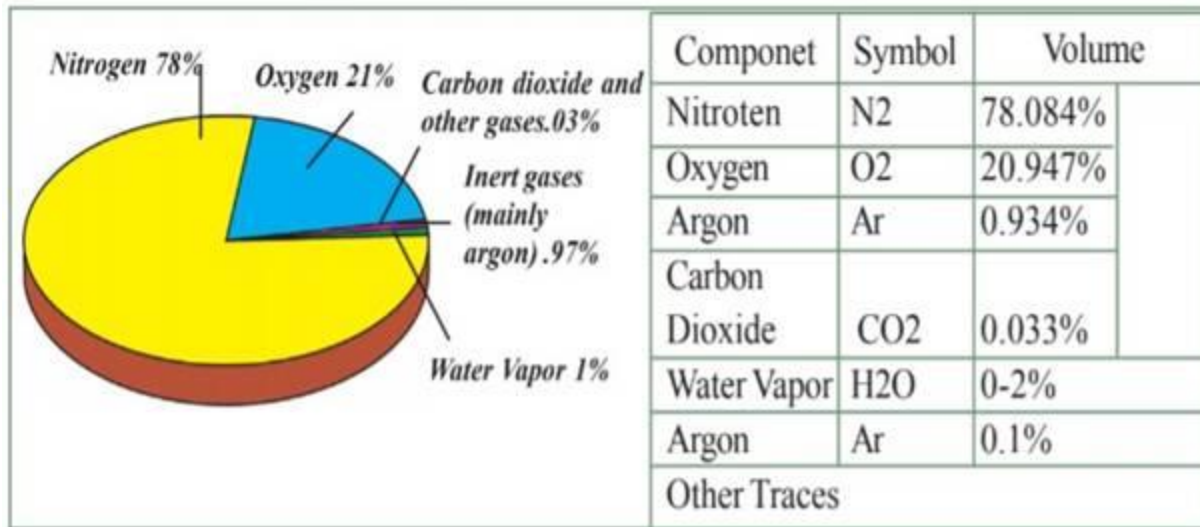
- i) Industrial waste being directly drained in the river.
- ii) The waste disposal of Delhi being directed near the river is the cause of heaps of polyethylene.
- iii) People washing clothes on banks and bathing near drinkable water make it unfit.
- iv) Religious practices like Corpse remnants being drowned they're also cause pollution

Effects of pollution:

- i) For the nearly residing people, the beauty of the banks is lost. It has been converted into a hell of a waste. The soil has lost fertility.
- ii) People in the far are transferred this water for drinking hence if they drink it without making it pure, they face many health issues.

Q. 9. What is air pollution? Make a flowchart to describe its causes and effects.

Answer : Air Pollution: In our atmospheric air, we have fixed amounts of various components like oxygen, nitrogen, carbon di oxide and all such gases. But due to Excessive use of combustion fuels and many other factors, this fixed amount is moving towards an imbalance. Moreover, some harmful substances like mercury and lead particulates are also present in the air. This phenomenon is termed as Air Pollution.



Q. 10. Clear and transparent water is always suitable for drinking. Comment.

Answer : Clear and transparent water is not always suitable for drinking

Reason: It may seem clear and clean. But it may contain some small microbes and bacteria that are harmful to us. It can also contain traces of lead and mercury which are major causes of cancer in humans.

Q. 11. If our monument like Taj Mahal is effected by air pollution, what is your advice to protect it?

Answer : The only way in which Taj Mahal can be protected is by checking air pollution in its surroundings. This can be done by shifting of major oil factories and industries from Agra to somewhere else. Also checking pollution from the vehicles is important. Planting as many trees in Agra so that air pollution can be checked.



Q. 12. Reshma going to talk about controlling measures of soil pollution. Prepare a write up

for her.

Answer : Following are the measures that we need to carry out for checking soil pollution:-

i) Prevent excess use of the chemical fertilizers and pesticides during farming.



Fig-5 Pesticides

ii) Preventing the disposal of non-biodegradable things like plastic and polyethylene into the soil.

iii) Planting as many trees as we can. Trees bind the important nutrients like potash, nitrogen, and carbon in the soil which are extremely important for its health.

iv) Preventing soil erosion and keeping it hydrated.

v) Checking Air and water pollution

Q. 13. To conduct a quiz program on air and water pollution, prepare five thought-provoking questions.

Answer : Ques 1 . For Air pollution and water pollution, major cause is an industrial waste.. What if we close all industries and live like our ancestors? Is it a good idea to check pollution?

⇒ We have to remain in competition with rest of world. We can't push back the country into past. Instead, we should try checking pollution and leading a sustainable development.

Ques 2. Carbon di oxide is the cause of global warming. What has happened if there would be no carbon di oxide on the earth?

⇒ If there Had been no carbon di oxide, no life had been possible. Temperature had gone very down. No photosynthesis had taken place and all would have died. That is why there needs to be a balance in everything which is offered to us by nature.

Ques 3. For checking air water pollution generally an idea to link all the rivers is given. What are its advantages and disadvantages?

⇒ Advantages: One single big river will be difficult to pollute.

⇒ Disadvantages: an imbalance in nature, a threat to the aquatic life of rivers, the danger of flood in nearby areas, once this big river gets polluted no other option will be there for survival.

Having more severe disadvantages this idea is not implemented.

Ques 4. Why should India try to control pollution? Can't it lead to under development of the country?

⇒ Yes, it can somehow lead to slow progress of the country. But it is more important for one to live a healthy life than that of a life with more development. So first thing is to check pollution and then to think about development.

Ques 5. Ozone depletion is also a major threat today. What are its consequences?

⇒ Harmful UV rays come on the earth. Lead to many health issues as well as contribute to global warming.

Q. 14. 'Use Bicycle – Avoid motor bikes and cars. This slogan is prepared by Sravani. Prepare some more slogans on pollution.

Answer : i) “ Reduce, Reuse, Recycle: 3 R’s to make life healthy”

ii) “Live healthily: say no to plastic bags”

iii) “Use car pooling: save the environment”

iv) “Use CNG: Save Environment”

v) “Save water save a life”

Q. 15. If you are a general manager of a chemical industry what precautions would you take to control air and water pollution?

Answer : I would take following measures:

i) I will check whether machinery is updated with recent technology or not. If not I will make it updated.

ii) I will check the disposal of my industrial waste directly to be drained in pure water bodies.

iii) I will check any gaseous waste being released directly into the air without proper treatment.

iv) As a fuel, I would prefer safe fuels like CNG or Solar energy etc.