

Chemistry OTBA Questions with Answers 2014

1. "Act Local think global". How is this Jargon suited to tackle the increasing problem of air Pollution? Relate this to the marble cancer of the Tajmahal and Pollution level in Agra city. Identify various steps that can be taken up at the individual and government level to curb the menace of air pollution.

Answer: We should consider the health of the entire planet and take actions in our locality or city to limit air pollution.

To limit Marble cancer of Tajmahal, The government has not put a ban on driving near it and also should setup Battery run buses or Horse drawn carriages to reach the monuments. This practice should be adopted carefully to lower down the level of air pollution.

Steps which can be taken by the individual level:-

- ❖ Use of eco-friendly vehicles like bicycles for short distances instead of motor vehicles.
- ❖ Bio-degradable waste should be buried under the soil instead of burning and leaving it in open ground.
- ❖ Save energy by switching of fans, lights and Air conditioner etc. and this will indirectly help in preventing air pollution.

Steps which can be taken by the government level:-

- ❖ Alternative energy sources such as solar energy, wind energy etc should be encouraged.
- ❖ Proper awareness programmes should be made about the consequences and effect of pollution.
- ❖ Enhance use of natural gas as a fuel in vehicles instead of conventional fuels.
- ❖ Strict government steps should be taken such as many fails in a pollution test. It should not be allowed to re-fuel.

2. Identify from the pictures and data given in the text, the diseases which occur in children of age group 6 to 12 and 0 to 5 due to air pollution. Analyse the given data and draw conclusion about health of children and pollution levels of various cities in India. What are the steps which can be taken by the authorities and communities to check the same?

Answer: in children of age 0-5, Air pollution can impair lung function and neuro development. It may also cause respiratory death. In children of age 6-12, Air pollutants can cause chronic bronchitis wheezing and Asthma attacks. It may also reduce the functioning of lungs and lead to respiratory related school absences.

The Health of children is mostly affected by the content of sulphur dioxide present in the air. Higher the content of sulphur dioxide, Nitrogen oxide etc. higher will be the cases of cough and fever.

As per the given list, the levels of particulate matter is highest in Gwalions, Calcutta , tops the chart in the level of NO₂ (Nitrogen dioxide) and Raipur at the peak in the emission of SO₂ (Sulphur dioxide)

Steps which can be taken by the communities :-

- ❖ Regular health check-up for children
- ❖ Enhance use of non-conventional sources of energy instead of conventional sources like Coal, Petrol, Diesel etc
- ❖ Encourage the children for using bicycle which will not only environment friendly, but also keep them healthy.

Steps which can be taken by Authorities:-

- ❖ Develop society and school in green areas and try to cover the society and school by greenery where they are already developed.
- ❖ Adopt biological processes to degrade bio-wastes instead of heating or burning.
- ❖ Hold seminars and Programmes in Society or Schools to make children aware of the harmful consequences of air pollution.