

Kendriya Vidyalaya Sangathan, Chennai Region

Summative Assessment - II – 2015

Open Text Based Assessment

CLASS : VI

SUBJECT: SCIENCE

AIR POLLUTION

We can survive for some time without food, but we cannot survive even for a few minutes without air. This simple fact tells us how important clean air is to us. Air consists of a mixture of gases. By volume, about 78% of this mixture is nitrogen and about 21% is oxygen. Carbon dioxide, argon, methane, ozone and water vapour are also present in very small quantities. When air is contaminated by unwanted substances which have a harmful effect on both the living and the non-living, it is referred to as air pollution.

How does Air Get Polluted?

The substances which contaminate the air are called air pollutants. Sometimes, such substances may come from natural sources like smoke and dust arising from forest fires or volcanic eruptions. Pollutants are also added to the atmosphere by certain human activities. The sources of air pollutants are factories, power plants, automobile exhausts and burning of firewood and dung cakes. Many respiratory problems are caused by air pollution.

Vehicles produce high levels of pollutants like carbon monoxide, carbon dioxide, nitrogen oxides and smoke. Carbon monoxide is produced from incomplete burning of fuels such as petrol and diesel. It is a poisonous gas. It reduces the oxygen-carrying capacity of the blood. A thick fog-like layer in the atmosphere, especially during winters is smog which is made up of smoke and fog. Smoke may contain oxides of nitrogen which combine with other air pollutants and fog to form smog. The smog causes breathing difficulties such as asthma, cough and wheezing in children. Many industries are also responsible for causing air pollution. Petroleum refineries are a major source of gaseous pollutants like sulphur dioxide and nitrogen dioxide. Sulphur dioxide is produced by combustion of fuels like coal in power plants. It can cause respiratory problems, including permanent lung damage.

Other kinds of pollutants are chlorofluorocarbons (CFCs) which are used in refrigerators, air conditioners and aerosol sprays. CFCs damage the ozone layer of the atmosphere. The ozone layer protects us from harmful ultraviolet rays of the sun. In addition to the above mentioned gases, automobiles which burn diesel and petrol also produce tiny particles which remain suspended in air for long periods. They reduce visibility. When inhaled, they cause diseases. Such particles are also produced during industrial processes like steel making and mining. Power plants give out tiny ash particles which also pollute the atmosphere.

WATER

Water is an important natural resource. Living things, both plants and animals, cannot live without water. We use water every day for various purposes – cooking food, washing, drinking, cleaning, irrigation, in industries and many other activities. We consume a lot of water every day. About 70% of our body consists of water. Water is available to us from two sources, surface water and underground water or subsoil water.

Water has played a prominent role in the development of civilizations. Countries with good water availability have progressed much faster. The Indus – valley civilization and the Nile – river civilization are some of the examples.

Pollution of water by human activities and throwing industrial waste, garbage and sewage in water bodies has increased considerably. This has deteriorated the quality of available fresh water.

Scarcity of water has now become a common feature during summer. The present situation requires proper management and conservation of water resources. Water is precious and life is not possible without water. We have to do a lot to conserve water resources for the future. We should adopt water harvesting techniques to recharge ground water. An average urban family uses 640 litres of water per day. The toilet is the biggest user of indoor water. On an average, it uses 11 litres of water per flush. Water is a gift of nature to mankind. Wise and judicious use of water can help in conservation of water.