AIR POLLUTION
SELF-ASSESSMENT TEST
LESSON 2

Answers

1. **True**
   High exposures to carbon monoxide can cause central nervous system impairment and death because it binds the hemoglobin in red blood cells, reducing their ability to transport oxygen throughout the body.

2. **False**
   Substances that Deplete the Ozone Layer, such as Chlorofluorocarbons (CFCs), have been reduced considerably since nations agreed on the Montreal Protocol in 1987.

3. **True**
   Methane is the most long-lived and abundant Volatile Organic Compound (VOC). It is several orders of magnitude less reactive than other VOCs, thus, it is usually excluded from reports, which refer to non-methane volatile organic compounds (NMVOC).

4. **True**
   In the northern hemisphere, carbon dioxide concentration rises in late winter and declines in late summer because of the changes in photosynthetic activity.

5. **False**
   Nitrogen monoxide is a colorless, odorless and non-flammable gas. In contrast, nitrogen dioxide is a reddish-brown gas with a pungent odor.

6. **True**
   Sulfur dioxide is oxidized by reactions occurring inside water droplets. This is referred to as heterogeneous oxidation.

7. **True**

The largest source of Volatile Organic Compounds is vegetation. However, on a local scale, anthropogenic emissions (including solvent usage, combustion and fuel storage and transport) can be similar or either higher than natural emissions.

8. **True**

Ultrafine particles or Cloud Condensation Nuclei (CCN) can become activated to grow to cloud droplets in the presence of saturation of water vapor.

9. **False**

The major source of nitrous oxide is soils (under natural vegetation). The major source of carbon monoxide is the incomplete combustion of fuels containing carbon.

10. **False**

The three ingredients required to generate photochemical smog are hydrocarbons, light and nitrogen oxides. Smog initiates when organic gases photolyze or they are oxidized by different compounds to produce organic radicals. These radicals convert NO to NO_2, which photolyzes to O, which reacts with O_2 to form O_3 and other oxidant products.