1. What is the primary source of sulfur dioxide (SO2) in the atmosphere?
a) Industrial emissions
b) Agricultural activities
c) Volcanic eruptions
d) Automobile exhaust

Answer: a) Industrial emissions
Explanation: Sulfur dioxide primarily originates from industrial processes like burning fossil fuels containing sulfur, such as coal and oil. While volcanic eruptions can release significant amounts of SO2, industrial activities are the primary anthropogenic source.

2. Which of the following is a secondary air pollutant?
a) Carbon monoxide (CO)
b) Particulate matter (PM)
c) Ozone (O3)
d) Nitrogen dioxide (NO2)

Answer: c) Ozone (O3)
Explanation: Ozone is a secondary pollutant formed by the reaction of sunlight with precursor pollutants like nitrogen oxides (NOx) and volatile organic compounds (VOCs).

3. Which classification of air pollutants includes asbestos and lead?
a) Particulate matter
b) Volatile organic compounds
c) Heavy metals
d) Nitrogen oxides

Answer: c) Heavy metals
Explanation: Heavy metals such as lead and asbestos are classified as air pollutants due to their toxicity and adverse health effects when present in the atmosphere.

4. What characterizes particulate matter (PM10) as an air pollutant?
a) Particles with a diameter less than 10 micrometers
b) Particles originating solely from natural sources
c) Particles primarily composed of sulfur compounds
d) Particles emitted only by vehicular exhaust

Answer: a) Particles with a diameter less than 10 micrometers
Explanation: PM10 refers to particulate matter with a diameter of 10 micrometers or less, which can penetrate deep into the respiratory system, causing adverse health effects.

5. Which health effect is commonly associated with exposure to nitrogen dioxide (NO_2)?
a) Respiratory irritation
b) Skin cancer
c) Osteoporosis
d) Neurological disorders

Answer: a) Respiratory irritation
Explanation: Nitrogen dioxide is known to cause respiratory irritation, exacerbate asthma, and increase susceptibility to respiratory infections upon prolonged exposure.

6. What is the primary impact of air pollution on vegetation?
a) Accelerated growth
b) Increased biodiversity

c) Reduced photosynthesis
d) Enhanced crop yields

Answer: c) Reduced photosynthesis
Explanation: Air pollutants like ozone and sulfur dioxide can impair photosynthesis in plants, leading to reduced growth, yield losses, and overall vegetation decline.

7. Which of the following materials is particularly susceptible to damage from acid rain?
a) Stainless steel
b) Concrete
c) Plastic
d) Glass

Answer: b) Concrete
Explanation: Acid rain, caused by sulfur dioxide and nitrogen oxides reacting with water vapor in the atmosphere, can corrode concrete structures over time.

8. What is the main component responsible for the formation of photochemical smog?
a) Nitrogen dioxide (NO_2)
b) Carbon monoxide (CO)
c) Sulfur dioxide (SO_2)
d) Methane (CH_4)

Answer: a) Nitrogen dioxide (NO_2)
Explanation: Nitrogen dioxide, along with volatile organic compounds (VOCs), reacts in the presence of sunlight to form photochemical smog, characterized by high levels of ground-level ozone.

9. How does air pollution impact historical artifacts and monuments?
a) Enhances preservation
b) Causes discoloration
c) Increases structural stability
d) Improves corrosion resistance

Answer: b) Causes discoloration
Explanation: Air pollutants like sulfur dioxide and particulate matter can cause discoloration and deterioration of historical artifacts and monuments over time.

10. Which of the following health conditions is not associated with long-term exposure to air pollution?
a) Cardiovascular diseases
b) Lung cancer
c) Obesity
d) Respiratory diseases

Answer: c) Obesity
Explanation: While air pollution has been linked to cardiovascular diseases, lung cancer, and respiratory diseases, there is limited evidence linking it directly to obesity.