

# APES Unit 7 Study Guide

## Ultimate Review Packet (7.1 - 7.2)

### 7.1 - Introduction to Air Pollutants

- a. **Describe** the power given to the EPA by the Clean Air Act
- b. Fill out the table below to review the sources and effects of each of the six criteria air pollutants

| Pollutant                   | Sources | Effects |
|-----------------------------|---------|---------|
| SO <sub>x</sub>             |         |         |
| NO <sub>x</sub>             |         |         |
| CO                          |         |         |
| PM                          |         |         |
| Tropospheric O <sub>3</sub> |         |         |
| Lead                        |         |         |

- c. **Explain** why carbon dioxide is typically NOT considered an air pollutant on APES FRQs
- d. **Explain** the difference between a primary and secondary air pollutant, using an example

### 7.2 - Photochemical Smog

- a. **Identify** the precursors or reactants of photochemical smog formation
- b. **Identify** the environmental conditions that increase photochemical smog formation
- c. **Describe** how tropospheric ozone forms



# APES Unit 7 Ultimate Review Packet (7.4 - 7.5)

## 7.4 Atmospheric CO<sub>2</sub> and Particulates

- Identify** THREE natural sources of carbon dioxide
- Explain** how decomposition can produce both CO<sub>2</sub> and CH<sub>4</sub>
- Describe** the relationship between PM particle size and human health risks
- Identify** THREE sources of natural particulate matter (PM)

## 7.5 - Indoor Air Pollutants

- Describe** the major source of indoor air pollution in developing countries and **identify** TWO indoor air pollutants released by this source
- Identify** TWO human health impacts of indoor biomass combustion
- Propose a solution** to reduce the impacts of indoor air pollutants in developing countries
- Fill out the table below to review the sources and effects of each of these indoor air pollutants

|          | Sources | Effects | Abatement/Mitigation of Exposure |
|----------|---------|---------|----------------------------------|
| Asbestos |         |         |                                  |
| CO       |         |         |                                  |
| VOCs     |         |         |                                  |
| Radon    |         |         |                                  |
| PM       |         |         |                                  |
| Lead     |         |         |                                  |

## ***APES Unit 7 Ultimate Review Packet (7.6 - 7.8)***

### **7.6 - Reduction of Air Pollutants**

- a. **Identify** an individual-scale and a government-scale method for reducing air pollutants
- b. **Identify** the air pollutant that vapor-recovery fuel nozzles reduce:
- c. **Describe** how catalytic converters reduce air pollutants emitted from vehicles
- d. **Explain** how wet and dry scrubbers reduce air pollutants from factory/power plant emissions
- e. **Describe** an additional method for reducing PM from power plant or industrial emissions

### **7.7 - Acid Deposition**

- a. **Identify** the TWO primary pollutants that lead to acid deposition and **identify** a major source of each pollutant
- b. **Describe** the transformation that these two primary pollutants undergo in order to become secondary pollutants that contribute to acid deposition
- c. **Describe** how the dissociation of nitric acid and sulfuric acid in water leads to acid deposition
- d. **Describe** an environmental consequence of acid deposition

### **7.8 - Acid Deposition**

- a. **Identify** TWO sources of noise pollution
- b. **Identify** TWO specific effects of noise pollution on organisms