**(AP) ENVIRONMENTAL SCIENCE 2022-23 April 4, 2023**

**Today’s Agenda (Day 138)**

1. Housekeeping Items

🡪 BRING:

1. Homework Check:

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1. Class Activity:

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🡪 DAY 2: Chapter 17 PPT Review

1. **Section 17.1 – Earth is a greenhouse planet**
2. **Section 17.2 – Geologic evidence for global warming and climate change**
3. **Section 17.3 – Growth in knowledge of climate change**
4. Section 17.4 – Sources and impacts of principal greenhouse gases
5. Section 17.5 – The current state of knowledge about climate change
6. Section 17.6 – Consequences of climate change
7. Section 17.7 – Addressing climate change

HOMEWORK:

* READ: Chapter 16 – Air Quality Issues
* READ: Chapter 17 – Climate Change
* COMPLETE:
* **STUDY**: Ch 16 & 17 Test

REMINDER**~~:~~**

* **TEST: Ch 16 & 17 🡪 April 6**
* **TEST: Ch 18 🡪 April 13**
* QUIZ: Ch 17 - 19 Vocabulary 🡪April 11
* **TEST: Ch 19 🡪 April 18**

Chapter 16 Vocabulary

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| Acid deposition | Acid rain | Carbon monoxide | Criteria air pollutants | Decibels | Hazardous air pollutants (air toxics) |
| Hydrocarbons | Nitrogen dioxide | Nitrogen monoxide | Nitrogen oxides | Ozone | Particulate matter |
| Photochemical smog | Primary air pollutants | Radon | Secondary air pollutants | Sulfur dioxide | Thermal inversion |
| Volatile organic compounds (VOCs) |  |  |  |  |  |

Chapter 17 Vocabulary

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| --- | --- | --- | --- | --- | --- |
| Carbon dioxide | Chlorofluorocarbons (CFCs) | Greenhouse effect | Greenhouse gases | Methane | Nitrous oxide |

Chapter 18 Vocabulary

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| Agricultural waste | Compost | Composting | Incineration | Industrial solid waste |  Mass burn |
| Mining waste | Municipal solid waste (MSW) | Municipal solid waste landfill | Recycling | Solid waste | Source reduction |

Chapter 19 Vocabulary

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| ASTM International Phase I Environmental Site Assessment Standard E-1527 | chronic toxicity | Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) | Corrosiveness | Emergency Planning and Community Right-to-Know Act (EPCRA) | hazardous substances/materials |
| hazardous wastes | Ignitability | Incineration | International Organization for Standardization (ISO) | National Priorities List | nonpersistent pollutant |
| nuclear fuel cycle | persistent pollutants | pollution prevention (P2)/waste minimization | pollution-prevention hierarchy | Reactivity | Resource Conservation and Recovery Act (RCRA) |
| Superfund | Synergism | threshold level | Toxic | Toxicity |  |

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 16**

**Review Questions**

1. Name the two primary gases in the atmosphere.

2. Describe two ways the gases in the troposphere differ from those in the stratosphere.

3. Describe two ways the atmosphere can get rid of pollutants.

4. List the five primary air pollutants commonly released into the atmosphere and their sources.

5. List the six criteria air pollutants, their sources, and their effects.

6. Define secondary air pollutants and give an example.

7. How is each of the following involved in the production of photochemical smog: volatile organic compounds, nitrogen oxides, thermal inversions, sunlight, automobiles, and ozone?

8. Why do some cities have greater problems with smog than others?

9. Describe three regulatory actions of the EPA that have significantly improved air quality and why they improved air quality.

10. What molecules produce acid rain and how are they produced?

11. What are the primary effects of acid rain on terrestrial and aquatic ecosystems?

12. Why is stratospheric ozone important?

13. What was done to protect stratospheric ozone?

14. What are the National Ambient Air Quality Standards?

15. Give an example of a hazardous air pollutant.

16. Explain why air pollution problems in economically developing countries are different from those in developed countries.

17. How does radon enter a home?

18. Why do buildings often have poor air quality?

19. Define noise.

**Critical Thinking Questions**

1. Why do you think air pollution is so much worse in developing countries than in developed countries? What should developed countries do about this, if anything?

2. What common indoor air pollutants are you exposed to? What can you do to limit this exposure?

3. Is it possible to have zero emissions of pollutants? What level of risk are you willing to live with?

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 17 - Review Questions**

1. Why are geologic studies important to the understanding of climate change?

2. How does each of the following help us understand climate change?

a. studies of the flowering times of plants

b. measurements of the pH of the ocean

c. satellite photos of the amount of snow in an area

d. sea level measurements

e. gas bubbles trapped in glaciers

f. migration patterns of birds

3. What are the primary greenhouse gases and how do human activities affect their concentrations?

4. How do greenhouse gases cause a warming of the Earth

5. List five changes that are likely to occur to Earth and its ecosystems as a result of global warming.

6. List three actions humans could take to reduce the release of additional greenhouse gases.

7. Describe how increased carbon dioxide in the atmosphere will alter the oceans.

8. How will climate change affect human health?

9. How effective have human efforts been at controlling carbon dioxide release?

10. List five changes likely to occur to the hydrologic cycle as a result of a warmer climate.

11. Why does a warming climate cause sea level to rise?

**Critical Thinking Questions**

1. Some developing countries argue that they should be exempt from limits on the production of greenhouse gases and that developed countries should bear the brunt of the changes that appear to be necessary to curb global climate change. What values, beliefs, and perspectives underlie this argument? What do you think about this argument?

2. China and the United States are the top two countries in terms of greenhouse gas releases. Why is this true? What could be done to change this situation?