**(AP) ENVIRONMENTAL SCIENCE 2022-23 April 17, 2023**

**Today’s Agenda (Day 145)**

1. Housekeeping Items

🡪 BRING:

1. Homework Check:

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1. Class Activity:

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🡪BEGIN: Ch 19 PPT Review

1. **Section 19.1 – Hazardous and Toxic Materials in Our Environment**
2. **Section 19.2 – Characterizing Hazardous and Toxic Materials**
3. Section 19.3 – Controlling Hazardous Materials and Waste
4. Section 19.4 – Managing Health Risks Associated with Toxic Substances
5. Section 19.5 -How Hazardous Wastes Enter the Environment
6. Section 19.6 – Hazardous-Waste Dumps—The Regulatory Response
7. Section 19.7 - Toxic Chemical Releases
8. Section 19.8 – Hazardous-Waste Management Choices
9. Section 19.9 – International Trade in Hazardous Wastes
10. Section 19.10 – Nuclear Waste Disposal

HOMEWORK:

* READ: Chapter 19 – Environmental Regulations: Hazardous Substances and Wastes
* COMPLETE:
* **STUDY**: Ch 19 Test

REMINDER**~~:~~**

* **TEST: Ch 19 🡪 April 20**

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

**CHAPTER 19**

**Review Questions**

1. List five different categories of hazardous materials.

2. What is a characteristic hazardous waste?

3. In addition to characteristic hazardous waste, how does the U.S. Environmental Protection Agency define a hazardous waste?

4. Distinguish between acute and chronic toxicity.

5. Give an example of synergism.

6. Give an example of a persistent pollutant and a nonpersistent pollutant.

7. What is a threshold level of exposure to a hazardous material and how is it determined?

8. List the three routes of entry of a hazardous material into the body.

9. List three ways hazardous wastes enter the environment to become a problem.

10. List three requirements of the Resource Conservation and Recovery Act (RCRA).

11. What are the goals of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)?

12. Why is CERCLA often known as Superfund?

13. Describe what is meant by the U.S. National Priorities List.

14. What are the goals of the Small Business Liability Relief and Brownfields Revitalization Act (SBLRBRA)?

15. List the three kinds of industries most responsible for the release of toxic materials to the environment.

16. Describe the pollution-prevention hierarchy.

17. Give three examples of how hazardous waste can be reduced at its source.

18. Give three examples of how hazardous waste can be recycled.

19. Describe five technologies for treating hazardous wastes.

20. List the two common technologies used to dispose of hazardous waste.

21. Why was the Basel Convention of the United Nations established?

22. What are the primary sources of nuclear waste?

23. What is transuranic waste and how is it disposed of?

24. What is high-level radioactive waste and how is it currently being controlled?

25. Give examples of low-level radioactive waste.

**Critical Thinking Questions**

1. Scientists at the EPA have to make decisions about thresholds in order to identify which materials are toxic. What thresholds would you establish for various toxic materials? What is your reasoning for establishing the limits you do? What, if any, type of testing might you conduct to arrive at these thresholds?

2. Look at this chapter’s section 19.6, “Hazardous-Waste Dumps—The Regulatory Response.” Do the authors present the information from a particular point of view? What other points of view might there be on this issue? What information do you think these other viewpoints would provide?

3. Many economically deprived areas, Native American reservations, and developing countries that need an influx of cash have agreed, over significant local opposition, to site hazardous-waste facilities in their areas. What do you think about this practice? Should outsiders have a say in what happens within these sovereign territories?

4. The disposal of radioactive wastes is a big problem for the nuclear energy industry. What are some of the things that need to be evaluated when considering nuclear waste disposal? What criteria would you use to judge whether a storage proposal is adequate or not?

5. Review the Issues & Analysis dealing with dioxins. How might the area be cleaned up? Who should be responsible for conducting the cleanup? To what levels would you suggest the area be remediated? Should the river water and sediments be treated as well? Should the residents in the area be consulted, and should they be compensated and given medical treatment options? Consider the plant and animal life in the floodplain—what, if anything, should be done about that?

6. Nuclear weapons testing had released nuclear radiation into the environment. These tests have always been justified as necessary for national security. Do you agree or not? What are the risks? What are the benefits?