Environmental Science – 10th ed. Miller Due:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CHAPTER 12 – Air and Air Pollution

Reading Questions

1. How can lichens be used to detect air pollutants?
2. Distinguish among *atmosphere, troposphere*, and *stratosphere*.
3. What key role does the stratosphere play in maintaining life on earth?
4. Distinguish among *air pollution, primary air pollutants,* and *secondary air pollutants.*
5. List the major classes of pollutants found in outdoor air.
6. Distinguish between *stationary* and *mobile* sources of pollution for outdoor air.
7. What are the two major sources of indoor air pollution?
8. List the six *critera* air pollutants regulated in the United States (and in most developed countries). For each of these pollutants, summarize its major human sources and heath effects.
9. List three factors that can reduce air pollution and three factors that can increase air pollution.
10. What is a *temperature inversion*, and what are its harmful effects?
11. Distinguish between *subsidence temperature inversion* and a *radiation temperature inversion.*
12. What types of places are most likely to suffer from prolonged inversions of each type? (#11)
13. What is *acid deposition,* and what are its major components and causes?
14. Distinguish among *acid deposition*, *wet deposition*, and *dry deposition*.
15. What areas tend to be most affected by acid deposition?
16. What is a *buffer*, and what types of geologic areas can neutralize or buffer some inputs of acidic chemicals?
17. What are the major harmful effects of acid deposition on (a) human health, (b) materials, (c) aquatic life, (d) trees and other plants, and (e) soils?
18. List eight (8) ways to prevent acid deposition and two ways to clean it up.
19. List three reasons why controlling acid deposition is a difficult political problem.
20. What is the *sick-building syndrome*?
21. According to the EPA, what are the four most dangerous indoor air pollutants in the U.S.?
22. What is the most dangerous indoor pollutant in most developing countries?
23. Summarize: problems of indoor pollution from (a) formaldehyde and (b) radioactive radon gas.
24. List four defenses of your body against air pollution.
25. What are the major harmful health effects of (a) carbon monoxide, (b) suspended particle matter, (c) sulfur dioxide, (d) nitrogen oxides, and (e) ozone. (see Table 12-2, page 259)
26. About how many people die prematurely each year from exposure to air pollutants in (a) U.S. and (b) the world?
27. What percentage of those deaths (#26) is the result of indoor air pollution?
28. What is the Clean Air Act, and how has it helped reduce outdoor air pollution in the U.S.?
29. What is a *national ambient air quality* standard?
30. List the major prevention and cleanup methods for dealing with air pollution from (a) emissions of sulfur oxides, nitrogen oxides, and particulate matter from stationary sources, (b) automobile emissions, (c) indoor air pollution in developed countries, and (d) indoor air pollution in developing countries.