

**Chapter 14 Water**

1. What percent of the water on Earth is fresh water and of that what percent is available to humans? (p. 420)
  
2. Identify and describe the five different processes involved in the water cycle: (p. 81)
  - a.
  - b.
  - c.
  - d.
  - e.
  
3. Where does most of the oil pollution in oceans come from? (p. 440)
  
4. What is the largest watershed in the United States and how much area does it drain? (p. 423)
  
5. Complete the following table by identifying, describing and listing the source for the different types of pollutants: (p.436-438)

Type	Description	Source
a.		
b.		
c.		
d.		
e.		
f.		

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6. What is an aquifer and how is the recharge zone important to it? (p. 424)
  
  
  
  
  
  
  
  
  
  
7. What two types of conflict can arise between towns/countries that share a river?
  - a.
  
  
  
  - b.
  
  
  
  
  
  
  
  
  
  
8. What is the difference between point-source pollution and non-point source pollution?  
*Give an example of each.* (p. 435)
  
  
  
  
  
  
  
  
  
  
9. Name and explain the various six stages of a conventional water treatment plant.  
(p. 442)
  - a.
  
  
  
  - b.
  
  
  
  - c.
  
  
  
  - d.
  
  
  
  - e.
  
  
  
  - f.
  
  
  
  
  
  
  
  
  
  
10. How is freshwater a limited resource?
  
  
  
  
  
  
  
  
  
  
11. Define biomagnification: (p. 440)

**Chapter 15: Air**

12. Define pollution:
  
  
  
  
  
  
  
  
  
  
13. What is a primary pollutant and *give examples?* (p. 463)
  
  
  
  
  
  
  
  
  
  
14. What is a temperature inversion? (p. 466)
  
  
  
  
  
  
  
  
  
  
15. What is the pH of typical rainwater and at what pH level is it considered acid rain? (p. 467)
  
  
  
  
  
  
  
  
  
  
16. What are the two most abundant gases in our atmosphere? (p. 453)
  
  
  
  
  
  
  
  
  
  
17. Which industries are the largest producers of primary air pollutants in the U.S.? (p. 462)
  
  
  
  
  
  
  
  
  
  
18. What are volatile organic compounds? (p. 463)
  
  
  
  
  
  
  
  
  
  
19. As a lake becomes more acidic, fish are harmed not only by the acidity but also by substances that leach out of the soil into the water. What toxic substances are leached when conditions are acidic?
  
  
  
  
  
  
  
  
  
  
20. What is an example of a natural indoor air pollutant?

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21. What is a secondary air pollutant? (p. 463)
  
22. What device is used on automobiles to reduce emissions? Explain its application. (p. 471)

**Chapter 16: Atmosphere and Climate Change**

23. Explain why different parts of the Earth have different climates? (p. 486)
  
24. Name four factors that determine climate: (p. 486)
  - a.
  - b.
  - c.
  - d.
  
25. Explain what the Montreal Protocol and Kyoto Protocol are: (p. 473)
  
26. Most of the warming that has been observed over the 20th century is attributed to what? (p. 496)
  
27. “Cool summers, cold winters with lots of snow-about 75cm of precipitation each year,” is a statement describing what? (p. 493)
  
28. What are the properties of air? (p. 454-455)

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29. How much has the average global temperature increased during the 20th century?  
(p. 491)
30. In which season (in the Northern Hemisphere) does carbon dioxide in the atmosphere decrease as a result of natural processes and *why*?
31. List five greenhouse gases and their sources? (p. 496)
- a.
  - b.
  - c.
  - d.
  - e.
32. How long will it take for chlorofluorocarbons released from Earth's surface today to reach the stratosphere? (p. 472)
33. Describe the process by which the ozone hole forms over Antarctica in spring: (p. 472)

**Chapter 11: Land**

34. What is the difference between rural and urban land? (p. 293)
35. What are some ways a heat island can affect a city? (p. 296)
36. What are the ways three main ways humans use land? (p. 292)

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37. What function do parks and preserves provide for people? (p. 311)
  
38. Which type of land use is protected from exploitation?
  
39. What are some methods used to prevent the degradation of rangeland? (p. 360)
  
  
  
  
  
  
  
  
  
  
40. How is urban land defined? (p. 293)
  
  
  
  
  
  
  
  
  
  
41. What are ecosystem services?
  
  
  
  
  
  
  
  
  
  
42. Define infrastructure and give some examples? (p. 296)
  
  
  
  
  
  
  
  
  
  
43. What are some methods used for reforestation? (p. 344-345)
  
  
  
  
  
  
  
  
  
  
44. Describe some methods used in tree harvesting: (p. 334)
  
  
  
  
  
  
  
  
  
  
45. What are some benefits of preserving farmland?

**Chapter 12: Food and Agriculture**

46. List and describe the different six soil layers from the surface  $\Rightarrow$  down. Be certain to include the abbreviated symbol for each layer. (p. 355)

Layer	Symbol	Description

47. Define soil texture and list the three main soil particles in order of *largest to smallest*. (p. 356)

48. What are the most produced foods worldwide? (p. 374)

49. Describe the importance and effects of the green revolution: (p. 368)

50. What types of farming methods prevent downhill erosion? (p. 359)

51. What is malnutrition largely a result of? (p. 374)

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52. What are ruminants and livestock?
53. List at least three environmental problems associated with pesticide use in the U.S?  
(p. 364)
- a.
  - b.
  - c.
  - d.
54. What is salinization and what can cause it? (p. 363)
55. How can farmland become desertified? (p. 361)
56. How do pesticides that are growth regulators work? (p. 370)
57. What are some indicators of fertile soil? (p. 355)
58. What constitutes a proper diet worldwide?
59. What are the tools of biological pest control? (p. 369)



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60. What are some of the benefits of genetically engineered plants? (p. 375)

61. Define integrated pest control and *what it entails*. (p. 371)

62. What things can cause famine?

63. What things have been done to prevent overharvesting? (p. 379)

**Chapter 13: Mining and Mineral Resources**

64. Define and give examples of native elements. (p. 393)

65. What are the three ways ores are formed? (p. 398)

- a.
- b.
- c.

66. Define a mineral. (p. 392)

67. What is the difference between an ore mineral and a gangue mineral? (p. 398)

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- 68. What element causes soil to become acidified? (p. 406)
  
- 69. What are some examples of subsurface mining? (p. 400)
  
- 70. What did the Surface Mining Control and Reclamation Act of 1977 do? (p. 410)
  
- 71. What can contaminate a river as a result of dredging? (p. 402)
  
- 72. Evaporates most commonly form in: (p. 394)
  
- 73. What is one property that may be used to distinguish metallic from nonmetallic minerals? (p. 398-399)
  
- 74. What is the only way mining can be profitable? (p. 399)

**Chapter 17: Nonrenewable Resources**

- 75. Fossil fuels are burned to produce what? (p. 518)
  
- 76. Describe how oil, natural gas and coal are formed: (p. 522)

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77. What is most of the energy consumed in the United States used for? (p. 521)

78. Energy from the sun is contained in:

79. Explain what happens during nuclear fusion and fission: (p. 537)

80. What are the advantages and disadvantages of nuclear energy? (p. 539)

81. What are the advantages of using fossil fuels for energy? (p. 524)

82. Where was the worst nuclear disaster in the U.S.? The world? (p.539)

83. Compare a power plant that burns fossil fuels with a nuclear power plant.

**Chapter 18: Renewable Energy**

84. Define renewable energy and give some examples: (p. 550)

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85. How does hydroelectric energy work and list the pros and cons of it: (p.559)

86. Define alternative energy and *give some examples*:

87. Using the sun's energy to heat a building a directly is known as: (p. 562)

88. In a developing country, how is biomass energy being used? (p. 553)

89. What renewable energy source is the fastest growing energy source in the world?  
(p. 568)

90. How do geothermal heat pumps heat homes? (p. 554)

91. Motor vehicles using gasohol or ethanol made from corn are examples of: (p. 552)

92. What are the benefits of using hydrogen as a fuel source? (p. 572)

**Chapter 19: Waste**

93. What is one by-product of bacterial decomposing organic waste? (p. 586)
  
94. Define solid waste and give some examples: (p. 583)
  
95. What is the most important function of a landfill? (p. 585)
  
96. How much solid waste does the average person in the U.S. produce per day? (p. 583)
  
97. What is an example of something that is biodegradable? (p. 590)
  
98. More than half of the solid waste produced in the U.S. comes from:
  
99. What is the difference between green plastic and photodegradable plastic?
  
  
  
  
  
  
  
  
  
  
100. How does composting work? (p. 592)
  
  
  
  
  
  
  
  
  
  
101. Which regulation requires producers of hazardous waste to document how their wastes are handled? (p. 602)

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102. What is source reduction? (p. 589)

103. What is the Superfund Program? Who pays for it? (p. 602)

104. What is the biggest problem with the Superfund Program? (p. 602)

105. What are hazardous wastes and what are four ways we can reduce them? (p. 596)

106. What can be done with the methane found in landfills? (p. 586)

107. Define persistent: (p. 276)

108. What are PCBs? (p. 276)