**APES Study Guide**

**Unit 6: LAND & WATER RESOURCE USE**

***DUE****: Due on day of unit test.*

*Directions:**Answer each question in complete sentences.* ***Must be handwritten in order to receive credit.***

**Textbook Reference:**

Chapter 14 Sections 3-5 – Nonrenewable Minerals & Mining

Chapter 12 Sections 1-6 – Food, Soil, and Pest Management

Chapter 13 Sections 1-7 – Water Resources

**Vocabulary:**

*Directions: Review key vocabulary, words may appear in quizzes and/or tests. You are not required to write the definitions but are encouraged to review them.*

Chapter 14

area strip mining

contour strip mining

high-grade ore

low-grade ore

mineral

mineral resource

mountaintop removal

open-pit mining

ore

overburden

reserves

smelting

strip mining

subsurface mining

surface mining

Chapter 12

animal manure

aquaculture

chronic undernutrition

chronic malnutrition

compost

desertification

famine

fishery

food security

food insecurity

green manure

green revolution

high-input agriculture

hunger

hydroponics

industrialized agriculture

integrated pest management (IPM)

irrigation

organic fertilizer

overnutrition

pest

pesticides

plantation agriculture

polyculture

salinization

slash-and-burn agriculture

soil conservation

soil erosion

traditional intensive agriculture

traditional subsistence

agriculture

waterlogging

Chapter 13

aquifers

dam

desalination

drainage basin

drought

floodplain

groundwater

reliable surface runoff

reservoir

surface runoff

surface water

water table

watershed

zone of saturation

**Study Guide Questions (SGQ):**

*Directions:**Answer each question in your own words as you read through the text. Answers must be in* ***complete handwritten sentences.***

Chapter 14

1. Define mineral resource and list two major types of such resources.
2. Describe three uses of rock as a resource.
3. Describe the life cycle of a metal resource.
4. Describe three major harmful environmental effects of extracting, processing, and using nonrenewable mineral resources.
5. What is surface mining?
6. Define strip mining and distinguish among area strip mining, contour strip mining, and mountaintop removal mining.
7. What is subsurface mining?
8. Describe three harmful environmental effects of mining.
9. What is smelting and what are its major harmful environmental effects?
10. Describe the conventional view of the relationship between the supply of a mineral resource and its market price.
11. What are five effects of a mineral becoming scarce?
12. Discuss the pros and cons of the U. S. General Mining Law of 1872.
13. Describe the opportunities and limitations of finding substitutes for scarce mineral resources.
14. Describe the benefits of recycling and reusing valuable metals. List five ways to use nonrenewable mineral resources more sustainably.

Chapter 12

1. Describe the effects of diet deficiencies in vitamin A, iron, and iodine.
2. What are the major advantages and disadvantages of raising food hydroponically in greenhouses?
3. Describe industrialized food production in the United States.
4. Describe the growth of industrialized meat production.
5. Summarize the use of energy in industrialized food production. Why does it result in an energy loss?
6. What are the major harmful environmental impacts of agriculture?
7. What is soil erosion and what are its two major harmful environmental effects?
8. What is desertification and what are its harmful environmental effects?
9. What is the biggest problem resulting from excessive use of water for irrigation in agriculture?
10. Summarize agriculture’s contribution to projected climate change.
11. Explain how industrialized food production systems reduce biodiversity in areas where crops are growing.
12. Describe the advantages and disadvantages of using genetic engineering in food production.
13. Compare the advantages and disadvantages of industrialized meat production.
14. Compare the advantages and disadvantages of aquaculture.
15. Describe Rachel Carson’s contribution to environmental science.
16. Describe the use of laws and treaties to help protect us from the harmful effects of pesticides.
17. Define integrated pest management (IPM) and discuss its advantages and disadvantages.
18. How have governments used subsidies to influence food production and what have been some of their effects?
19. Describe ways to prevent and clean up soil salinization.
20. How can we reduce desertification?

Chapter 13

1. Discuss the importance of the Colorado River basin in the United States and how human activities are stressing this system.
2. Explain why access to water is a health issue, an economic issue, a women’s and children’s issue, a national and global security issue, and an environmental issue.
3. Describe how water is recycled by the hydrologic cycle and how human activities can overload and altered this cycle.
4. What percentage of the world’s reliable runoff are we using and what percentage are we likely to be using by 2025?
5. Describe the availability and use of freshwater resources in the United States.
6. How many people in the world lack regular access to clean water today and how high might this number grow by 2025?
7. Why do many analysts view the likelihood of greatly increasing water shortages as one of the world’s most serious environmental problems?
8. Describe the connection between water shortages, grain imports, food prices, and malnutrition.
9. What are the advantages and disadvantages of withdrawing groundwater?
10. Describe the problem of groundwater depletion in the world and in the United States, especially over the Ogallala aquifer.
11. Describe the problems of land subsidence and contamination of freshwater aquifers near coastal areas resulting from the overdrawing of water from aquifers.
12. What are the advantages and disadvantages of using large dams and reservoirs?
13. What ecological services do rivers provide?
14. What are the advantages and disadvantages of China’s Three Gorges Dam?
15. Distinguish between distillation and reverse osmosis as methods for desalinating water.
16. What are three major limitations on the widespread use of desalination?
17. What percentage of available freshwater is unnecessarily wasted in the world and in the United States?
18. What are two major causes of water waste?
19. List four ways to reduce water waste in industry and homes, and three ways to use less water to remove wastes.
20. List four ways to use water more sustainably and four ways in which you can reduce your use and waste of water.
21. What is a floodplain and why do people like to live on floodplains?
22. What are the benefits and drawbacks of floods?
23. List three human activities that increase the risk of flooding.
24. List three ways to reduce the risks of flooding.