

Chapter 13 – Review Questions

Read Chapter 13 and answer the following questions on a separate sheet of paper.

ANSWERS MUST BE HANDWRITTEN! Typed responses will not be accepted.

See pages 67 to 70 in Chapter 3 for the following:

1. What is *humus*, and why is it important? What does the color of topsoil tell you about its usefulness as a soil for growing crops?
2. What is *soil*? Distinguish between a *soil horizon* and a *soil profile*.

Meanwhile, back in Chapter 13...

3. How is golden rice different from regular white rice? Why is golden rice attractive to people in developing countries? What are three criticisms of the plan to use golden rice?
4. Name three major food-related challenges faced by the world.
5. What is *food scarcity*? How is it related to harmful environment effects to agriculture?
6. Distinguish between *chronic undernutrition* and *malnutrition*. About how many chronically undernourished and malnourished people are there in the world? About how many children die prematurely each year from undernutrition, malnutrition, or diseases worsened by malnutrition?
7. What are the effects of deficiencies of vitamin A, iron, and iodine?
8. What is *famine*, and how is it usually caused? Which causes more deaths per year, famine or chronic under nutrition and malnutrition?
9. List six major ways to reduce sickness and premature death of children from malnutrition and disease.
10. What is *overnutrition* and what are its harmful health effects? How serious is overnutrition in the United States?
11. What three systems supply most of our food? What three crops provide most of the world's food?
12. Distinguish among *industrialized agriculture*, *plantation agriculture*, *traditional subsistence agriculture*, and *traditional intensive agriculture*.
13. Describe the nature and importance of the agricultural industry in the United States. How energy efficient is industrialized agriculture in the United States?
14. Distinguish among *interplanting*, *polyvarietal cultivation*, *intercropping*, *agroforestry*, and *polyculture*. List five advantages of low-input polyculture.
15. What is *soil erosion*, and what are its major natural and human-related causes? What are the two major harmful effects of soil erosion?
16. How serious is soil erosion globally? In the United States?
17. Describe how the U.S. government is helping farmers reduce soil erosion.
18. What is *desertification*? How serious is this problem? What are its major causes and consequences?
19. Distinguish between *salinization* and *waterlogging* of soil. How serious are these problems? List two ways to prevent soil salinization and three ways to deal with it.

20. What is *soil conservation*? What is *conservation-tillage farming*, and what are its potential benefits, according to the USDA?
21. Distinguish among *terracing*, *contour farming*, *strip cropping*, *alley cropping*, and *windbreaks* as methods for reducing soil erosion.
22. Distinguish between *organic fertilizer* and *commercial inorganic fertilizer*. Distinguish between *green manure* and *compost*. What is *crop rotation*, and why is it useful in helping maintain soil fertility? How much has inorganic fertilizer use grown since 1950, and what is the main drawback of using it?
23. What is a *green revolution*, and what three steps does it involve? Distinguish between the first and second green revolutions.
24. List three factors that have limited the success of the green revolution.
25. For each of the following areas, list three harmful environmental effects of producing food: (a) biodiversity, (b) soil, (c) water, (d) air and the atmosphere, and (e) human health.
26. What is *agrobiodiversity*, and how has it been affected since 1900?
27. Distinguish between *cross-breeding through artificial selection* and *genetic engineering*.
28. List six advantages and six disadvantages of genetically modified crops and foods.
29. Describe two types of nontraditional foods that could be used to feed more of the world's people. Name two problems in making a switch to such new types of foods.
30. Describe the controversy over patenting genes.
31. List the arguments for and against labeling genetically modified foods.
32. Describe five major harmful environmental effects of meat production.
33. Why are beef cattle less grain-efficient than other sources of animal protein?
34. What are *fisheries*? What is *aquaculture*? What percentage of the world's fish and shellfish comes from the ocean and what percentage comes from the aquaculture? What percentage of the world's major fisheries is being fished at or above their sustainable capacity?
35. What is an unintended effect of government subsidies intended to help support the world's fishing fleets?
36. Distinguish between *fish farming* and *fish ranching*. What are the advantages and disadvantages of aquaculture? List six ways to improve aquaculture.
37. How could we grow more food in urban areas?
38. How much of the world's food is wasted unnecessarily?
39. List three major approaches that governments use to affect food production. List the major advantages and disadvantages of each approach.