

Ch. 13 Review Questions APES

1. What three systems supply most of our food? What three crops provide most of the world's food?
2. Distinguish among *industrialized agriculture*, *plantation agriculture*, *traditional subsistence agriculture*, and *traditional intensive agriculture*.
3. What is a *green revolution*, and what three steps does it involve? Distinguish between the first and second green revolutions.
4. Explain how producing more food on less land can help protect biodiversity.
5. Describe the nature and importance of the agricultural industry in the United States. How energy efficient is industrialized agriculture in the United States?
6. Distinguish among *interplanting*, *polyvarietal cultivation*, *intercropping*, and *polyculture*. List six advantages of low-input polyculture? Describe the use of a low-tech type of agriculture in developing countries.
7. What is *soil erosion*, and what are its major natural and human-related causes? What are the two major harmful effects of soil erosion?
8. Describe how the U.S. government is helping farmers reduce soil erosion.
9. Describe the *Dust Bowl* event in the 1930s in the United States and the ecological lesson we can learn from it.
10. What is *desertification*? How serious is this problem? What are its major causes and consequences? How can we slow desertification?
11. Distinguish between *salinization* and *waterlogging* of soils. How serious are these problems? List five ways to reduce the threat of soil salinization.
12. What is *soil conservation*? Distinguish between *conventional-tillage farming* and *conservation-tillage farming*. What are the advantages and disadvantages of conservation-tillage farming?
13. Distinguish among *terracing*, *contour farming*, *strip cropping*, *alley cropping*, *windbreaks*, as methods for reducing soil erosion.
14. Distinguish between *organic fertilizer* and *commercial inorganic fertilizer* and list the advantages and disadvantages of using commercial inorganic fertilizers to help maintain or restore soil fertility. Discuss using *animal manure*, *green manure*, *compost*, and *mushroom spores* as methods for fertilizing soil. What is *crop*

rotation, and why is it useful in helping maintain soil fertility?

15. Distinguish between *chronic undernutrition* and *malnutrition*. What are the two most common nutritional deficiency diseases, and how do they differ? About how many chronically undernourished and malnourished people are there in the world? About how many people die prematurely each year from undernutrition, malnutrition, or diseases worsened by malnutrition?
16. List two major ways to reduce sickness and premature death of children from malnutrition and disease.
17. What is *overnutrition* and what are its harmful health effects? How serious is overnutrition in the United States?
18. List the major harmful environmental effects of producing food.
19. What are China's major food problems? How could lower food production in China affect the rest of the world?
20. List the advantages and disadvantages of genetically engineered food.
21. List two factors that could limit greatly increased food production through green revolution and genetic engineering techniques.
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23. What percentage of the world's food is produced on irrigated cropland? What are some good points and bad points of cultivating crops with irrigation systems?
24. What is the potential for cultivating more land for growing crops in tropical forests and arid areas? What are the problems with doing this?
25. How could we grow more food in urban areas?
26. Distinguish between *rangeland* and *pasture*? Explain how rangeland grass can be a renewable resource for livestock and wild herbivores.
27. What is *overgrazing* and what are three of its harmful environmental effects?
28. What are *fisheries*? What is *aquaculture*? What percentage of the world's fish and shellfish comes from the ocean and what percentage comes from aquaculture? Distinguish among *trawling*, *purse-seine*, *longlining*, and *drift-net* methods for harvesting fish.
29. Distinguish between *overfishing* and *commercial extinction* of a fish species. How are overfishing and habitat degradation affecting fish harvests?

30. What are the advantages and disadvantages of using government subsidies to help support the world's fishing fleets?
31. What are the advantages and disadvantages of aquaculture? List two ways to improve aquaculture.
32. What is *sustainable* or *low-input agriculture*, and what are its major components? List four ways to help farmers make the transition to more sustainable agriculture.
33. List three things you can do to promote the use of more sustainable agriculture.
34. What is a *pest*? How are species we consider pests controlled in nature? What happens to this natural pest control service when we simplify ecosystems?
35. What is a *pesticide*? Distinguish among *insecticides*, *herbicides*, *fungicides*, and *rodenticides*.
36. Distinguish between *broad-spectrum* and *narrow-spectrum* pesticides. Describe the increased use of synthetic chemical pesticides in the world and in the United States since 1950.
37. List some benefits of chemical pesticides. List four traits of the ideal pest-killing chemical.
38. Summarize the harmful effects of synthetic chemical pesticides in terms of (a) development of genetic resistance among pests, (b) killing of natural predators and parasites that help control pest species, (c) creation of new pest species, (d) migration of pesticides into the environment, (e) effects on wildlife, and (f) effects on the health of pesticide and farm workers and the general public.
39. How are pesticides regulated in the United States?
40. Describe the history of the use of DDT.
41. List the advantages and disadvantages of using the following pest control methods: (a) genetic engineering to speed up the development of pest- and disease-resistant crop strains, (b) biological control, (c) insect birth control through sterilization, (d) insect hormones(pheramones), and (g) integrated pest management (IPM).
42. Describe the major characteristics of Integrated Pest Management.