

Chapter 12 Review Questions + Problem Set

Directions- On loose-leaf paper, answer the following questions in well-written complete sentences. You do not need to write the question. Number each answer so the number corresponds the question that you have answered. **Only hand-written responses will be accepted. Typed or emailed copies will not be graded.**

Chapter 12 Review Questions

1. Distinguish between organic agriculture and conventional industrialized agriculture.
2. Distinguish between chronic undernutrition (hunger) and chronic malnutrition and describe their harmful effects.
3. Define soil and describe its formation and the major layers in mature soils.
4. Distinguish between crossbreeding through artificial selection and genetic engineering.
5. Distinguish between is fisheries and aquaculture?
6. What are two major advantages of high-yield modern agriculture?
7. What are the major harmful environmental impacts of agriculture?
8. What is soil erosion and what are its two major harmful environmental effects?
9. What is desertification and what are its harmful environmental effects?
10. Distinguish between salinization and waterlogging of soil and describe their harmful environmental effects.
11. What is the biggest problem resulting from excessive use of water for irrigation in agriculture?
12. Summarize agriculture's contribution to projected climate change.
13. Explain how industrialized food production systems reduce biodiversity in areas where crops are growing.
14. Describe the advantages and disadvantages of using genetic engineering in food production.
15. Compare the advantages and disadvantages of industrialized meat production.
16. What is the connection between feeding livestock and the formation of ocean dead zones?
17. Describe the use of energy in industrialized agriculture.
18. Compare the advantages and disadvantages of aquaculture.
19. What is a pest?
20. Define and give two examples of a pesticide.
21. Describe Rachel Carson's contribution to environmental science.
22. Describe the advantages and disadvantages of modern pesticides.
23. Describe the use of laws and treaties to help protect us from the harmful effects of pesticides.
24. List and briefly describe seven alternatives to conventional pesticides.
25. Define integrated pest management (IPM) and discuss its advantages and disadvantages.
26. How have governments used subsidies to influence food production and what have been some of their effects?
27. What is soil conservation?
28. Describe six ways to reduce soil erosion.
29. Describe ways to prevent and clean up soil salinization and desertification?
30. How can we make aquaculture more sustainable?
31. Describe ways to produce meat more efficiently and sustainably.
32. Summarize three important aspects of making a shift to more sustainable food production.
33. Describe the advantages of organic farming and its role in shifting to more sustainable agriculture.
34. What five strategies could help farmers and consumers shift to more sustainable agriculture?
35. What are three important ways in which individual consumers can help to promote more sustainable agriculture?

Problem Set → *Show All Work Do Not Use A Calculator*

36. Pioneers reported soils that were 16 feet deep in the prairies of Iowa. Currently, soil depth in this location is about 8 feet. What is the percent soil loss?
37. According to a report from the World Resources Institute, the greatest source of topsoil loss, along with urban sprawl and development, is from improperly managed agricultural land. By 1990, poor agricultural practices had contributed to the degradation of 600 million hectares of the roughly 1.2 billion hectares of cropland worldwide. What percent of cropland has been degraded?

Free Response Question

38. Between 1950 and 200, global meat production increased from 52 billion kilograms to 240 billion kilograms. During this period, the global human population increased from 2.6 billion to 6.0 billion.
- (a) Calculate the per capita meat production in 1950 and in 2000.
 - (b) Use the values from part (a) to calculate the change in global per capita meat production during this 50-year period as a percentage of the 1950 value.
 - (c) Discuss why it is more efficient to produce grain for human consumption than to produce meat for human consumption.
 - (d) Identify and explain one potential advantage and one potential disadvantage for human health of a diet that contains very little meat.