

Name:

Class:

Date:

Lesson 7.1: Energy Systems

Lesson Review

Carefully study the lesson and then answer the following questions.

1. Explain the difference between renewable and nonrenewable energy. (7.1.1)

Answer:

2. Solar power is the ____ form of energy we use. (7.1.1)

- A. best
- B. least expensive
- C. newest
- D. cleanest

Answer:

3. The special semiconductor diodes that convert visible light into DC electricity are called ____ cells. (7.1.1)

- A. solar
- B. photovoltaic
- C. battery
- D. diode

Answer:

4. What is the most common type of wind turbine in the United States? (7.1.1)

- A. Nacelle axis turbine
- B. Horizontal-axis wind turbine (HAWT)
- C. Single-blade rotary turbine (SBRT)
- D. Air turbine

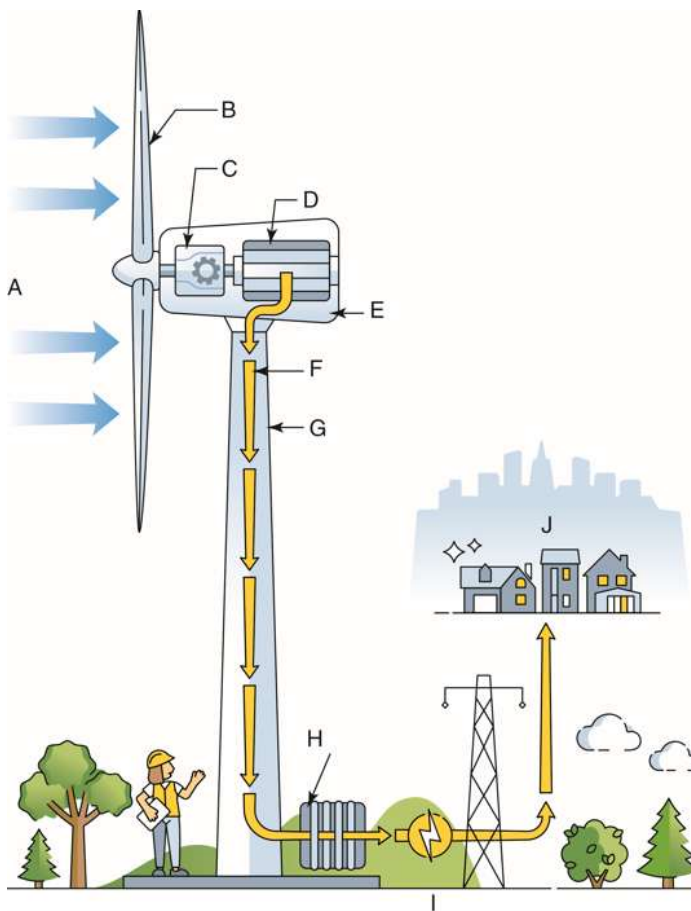
Answer:

5. Wind speeds should be a minimum of ____ miles per hour for turbines to work efficiently. (7.1.1)

- A. 8
- B. 10
- C. 12
- D. 14

Answer:

Match the components of the wind turbine to the correct terms. (7.1.1)



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6. Consumer

Answer:

7. Gear box

2

Answer:

8. Generator

Answer:

9. Nacelle

Answer:

10. Power cables

Answer:

11. Rotor blade

Answer:

12. Switchyard

Answer:

13. Tower

Answer:

14. Transformer

Answer:

15. Wind

Answer:

16. *True or False?* Wind farms are generally placed only in locations far from the ocean. (7.1.1)

Answer:

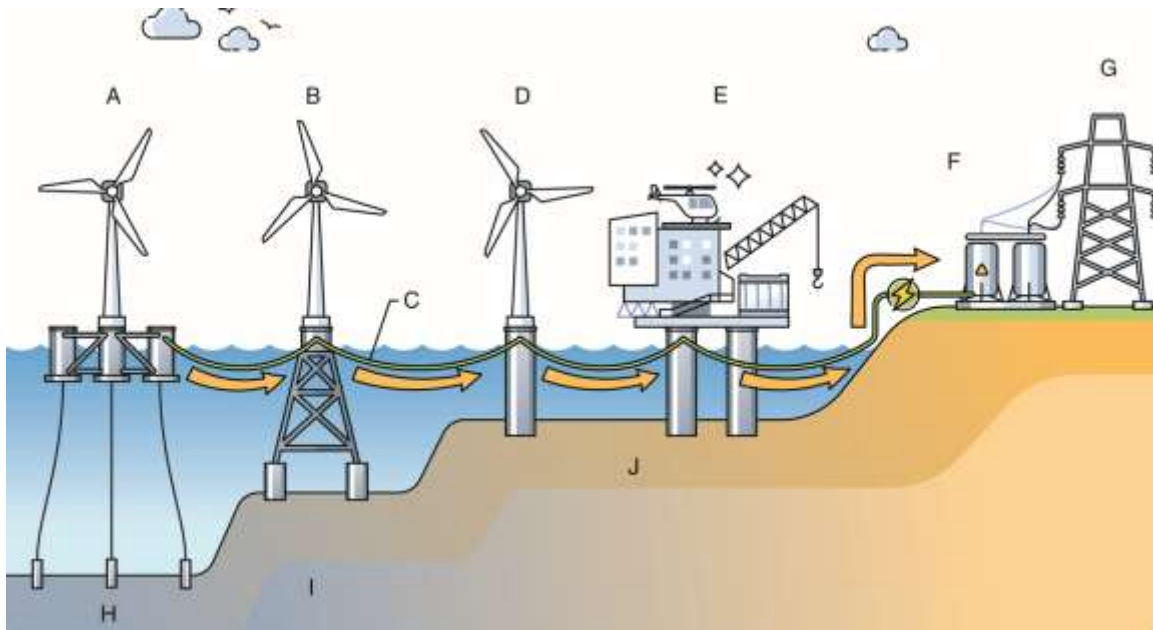
17. *True or False?* It is not economical to use single-turbine wind power in remote areas that are far from the power grid. (7.1.1)

Answer:

18. *True or False?* Wind power is a power-supply method for reducing carbon and water pollution. (7.1.1)

Answer:

Match the offshore wind farm components to the correct terms. (7.1.1)



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19. Floating

Answer:

20. Jacket

Answer:

21. Power cables

Answer:

22. Monopile

Answer:

23. Offshore substation

Answer:

24. Onshore substation

Answer:

25. Power grid

Answer:

26. Deep water

Answer:

27. Transitional water

Answer:

28. Shallow water

Answer:

29. About ____ of the total electricity generated in the United States comes from hydroelectric power. (7.1.1)

A. 2%

B. 6%

C. 25%

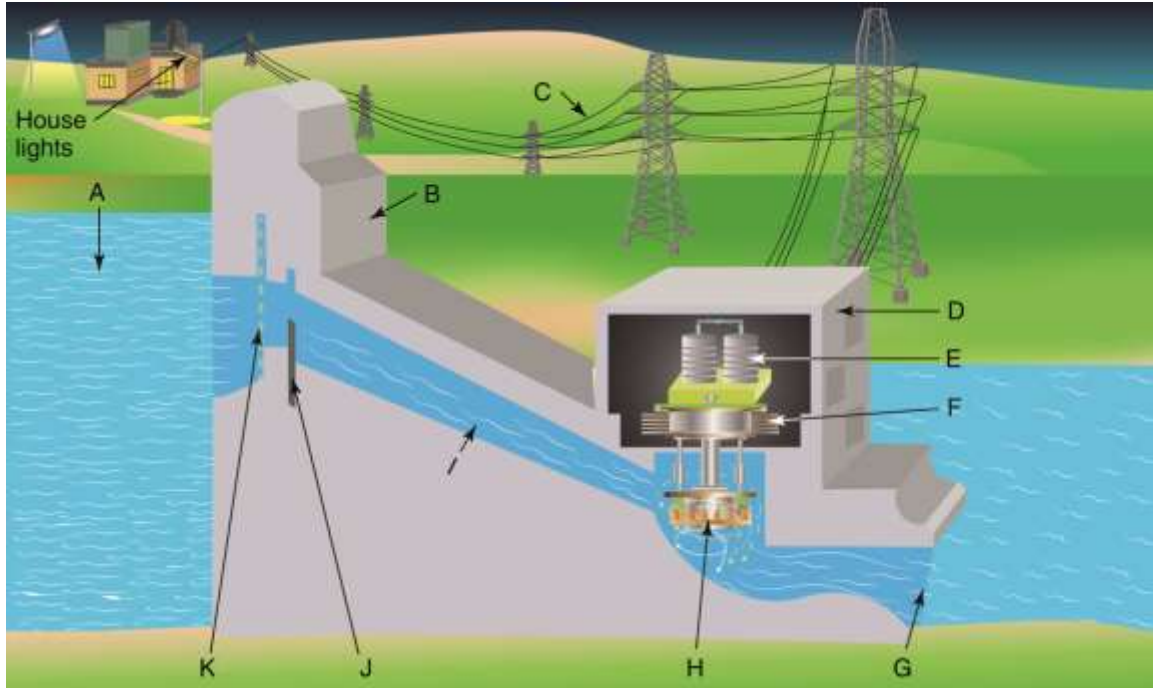
D. 50%

Answer:

30. List three environmental impacts that might come from installing a hydroelectric dam. (7.1.1)

Answer:

Match the dam components to the correct terms. (7.1.1)



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31. Control gate

Answer:

32. Dam

Answer:

33. Generator

Answer:

34. Intake

Answer:

35. Outflow

Answer:

36. Penstock

Answer:

37. Power lines

Answer:

38. Powerhouse

Answer:

39. Reservoir

Answer:

40. Transformer

Answer:

41. Turbine

Answer:

Match each type of geothermal system to the definition.

A. Dry steam system

B. Flash steam system

C. Binary cycle system

42. Hot water passes through a heat exchanger, where it heats a second liquid. (7.1.1)

Answer:

43. Hot water is depressurized into steam, which drives a turbine. (7.1.1)

Answer:

44. Steam goes through a turbine and is then condensed into water. (7.1.1)

Answer:

45. *True or False?* Geothermal heat pumps can only be used in areas with large amounts of underground geothermal activity. (7.1.1)

Answer:

46. *True or False?* Biomass energy comes from burning materials that are quickly replenished by nature. (7.1.1)

Answer:

47. *True or False?* Biomass power plants are often located hundreds of miles from the source of the biomass they use. (7.1.1)

Answer:

48. *True or False?* Natural gas emitted from the source has a distinctively bad odor. (7.1.2)

Answer:

49. *True or False?* More than half of all American homes use natural gas for heating and cooking. (7.1.2)

Answer:

50. *True or False?* Humans have used crude oil for thousands of years. (7.1.2)

Answer:

51. List the four steps in getting crude oil from the ground to refineries. (7.1.2)

Answer:

52. There are ____ crude oil refineries in the United States. (7.1.2)

A. over 100

B. over 130

- C. over 180
- D. over 250

Answer:

53. Almost _____ of the energy produced in the United States comes from nuclear energy. (7.1.2)

- A. 5%
- B. 10%
- C. 20%
- D. 40%

Answer:

Critical Thinking

1. If you had the choice to select three energy sources the United States could use to produce electrical power, which three types of energy systems would you choose and why? (7.1.0)

Answer: