Review of Chapter 5, Energy Resources

1. The fuels that we use to run cars, ships, and factories and to generate electricity are called _____.
2. All living things are made up of the element _____.
3. Most of the carbon in fossil fuels exists as _____.
4. Black gold and crude oil are two common names for _____.
5. Methane, butane, and propane are three components that can be separated from _____.
6. The form of coal that contains about 90% carbon is _____.
7. When coal is burned, sulfur dioxide is released which then can form _____.
8. Burning petroleum products causes an environmental problem called _____.
9. Krypton-91 and barium-142 are _____ of uranium-235.
10. The chemical battery that produces energy by combining hydrogen with oxygen is called a _____.
11. A common use of solar collectors is to _____ for use in homes.

Use the terms from the following list to complete the sentences below.

biomass	nuclear energy
coal	natural gas
recycling	renewable
geothermal energy	petroleum
chemical energy	

12. Fuel cells power automobiles by converting _____ into electrical energy.
13. Power plants that produce _____ also produce dangerous radioactive wastes.
14. Refineries separate _____ into various types of petroleum products, such as kerosene and gasoline.
15. The terms anthracite and lignite describe stages of _____.
16. Resources such as trees, water, and most animals are _____.

Use the terms from the following list to complete the sentences below.

coal	petroleum
smog	natural gas

17. A liquid mixture of hydrocarbon compounds used as a fuel is _____.
18. The fossil fuel that is formed underground from decomposed plants is _____.
19. A gaseous mixture of hydrocarbons used as a fuel is _____.
20. Burning petroleum is the main cause of air pollution called _____.

Short Answer - *You'll have to think about these. Be sure to read the chapter sections that apply, and don't skip the pictures and picture captions! Answer using complete sentences.*

21. How does acid precipitation form?
22. Where is geothermal energy found?
23. List three ways in which humans can conserve natural resources and give an example of each.
24. List three renewable and three nonrenewable natural resources.
25. Explain the difference between conserving a resource and recycling it.
26. Explain why we use different methods to extract fossil fuels from Earth's crust.
27. When an oil and gas reservoir is drilled, which substance is generally encountered first—oil or natural gas? Why?
28. How are plants used to produce energy?
29. How are water wheels like hydroelectric dams?
30. What are three examples of Earth's resources?
31. What will happen when nonrenewable resources become scarce?
32. How can you tell if a plastic container can be recycled?
33. Where does electrical energy come from?
34. Why is it especially important to conserve fossil fuels?
35. Why did people in the United States reduce their use of coal?
36. Explain why petroleum and natural gas are considered nonrenewable resources even though they still continue to form.
37. Name the four stages of coal formation.
38. Explain why peat is the form of coal that burns least cleanly.
39. What are the two methods of getting energy from the nuclei of atoms?
40. How long can nuclear wastes remain dangerously radioactive?
41. Which is the more difficult process for humans to perform, fission or fusion? Why?
42. What is the major drawback to using only biomass or gasohol for energy?

Review of Chapter 5, Energy Resources
Answer Section

COMPLETION

1. ANS: energy resources

   STA: S6E6
2. ANS: carbon

   STA: S6E6
3. ANS: hydrocarbons

   STA: S6E6
4. ANS: petroleum

   STA: S6E6
5. ANS: natural gas

   STA: S6E6
6. ANS: anthracite

   STA: S6E6
7. ANS: acid precipitation

   STA: S6E6
8. ANS: smog

   STA: S6E6.a
9. ANS: fission products

   STA: S6E6.a
10. ANS: fuel cell

    STA: S6E6
11. ANS: heat water

    STA: S6E6.a
12. ANS: chemical energy

    STA: S6E6
13. ANS: nuclear energy

    STA: S6E6
14. ANS: petroleum

    STA: S6E6
15. ANS: coal

STA: S6E6.b

16. ANS: renewable

STA: S6E6

17. ANS: petroleum

STA: S6E6

18. ANS: coal

STA: S6E6

19. ANS: natural gas

STA: S6E6

20. ANS: smog

STA: S6E6.b

SHORT ANSWER

21. ANS:
When sulfur-bearing fuels like low-grade coals are burned, sulfur dioxide is released. Sulfur dioxide and moisture in the air combine to form sulfuric acid. Sulfuric acid dissolves in raindrops and falls to the ground in precipitation.

STA: S6E6.a

22. ANS:
Geothermal energy is found in areas where steam rises through natural vents or wells drilled into Earth. The steam is produced when ground water is heated by magma, or melted rock, within the Earth.

STA: S6E5.i

23. ANS:
Answers will vary. Sample answer: Humans can conserve resources by taking only what is needed, for example, by turning off the faucet when not using water. They can take care of natural resources by keeping water sources free from pollution. They can also recycle or reuse items, for example, by taking plastics to the local recycling center.

STA: S6E6.b

24. ANS:
Answers will vary. Sample answer: renewable—trees, wind, water; nonrenewable—coal, oil, natural gas

STA: S6E5.i

25. ANS:
Conserving a resource means using it sparingly and not wasting it. Recycling refers to the reuse of natural resources to make new products.

STA: S6E6

26. ANS:
We use different methods because fossil fuels differ in their location and composition.

STA: S6E6

27. ANS:
Natural gas, because it is less dense than oil and migrates to the top of the reservoir.

STA: S6E6.a

28. ANS:
Burning wood, crops, and alcohol made from plants are some ways plants are used to produce energy.

STA: S6E6.a

29. ANS:
Both devices harness energy from falling water.

STA: S6E6

30. ANS:
Answers will vary. Sample answer: water, trees, and minerals

STA: S6E6.b

31. ANS:
Humans will have to find other resources to replace them.

STA: S6E5.i

32. ANS:
Look for the number on the container. Most plastics with the numbers 1 or 2 can be recycled.

STA: S6E6

33. ANS:
It is released from fossil fuels when they are burned. It can also come from hydroelectric plants or wind power.

STA: S6E6

34. ANS:
Because they are nonrenewable resources and once they are gone, they cannot be replaced.

STA: S6E6

35. ANS:
Cleaner energy sources became available. They began to use coal less because it causes a great amount of air pollution.

STA: S6E6

36. ANS:
Though petroleum and natural gas are constantly forming, it takes much longer to replenish the supply than it does to use the current available resources.

STA: S6E6

37. ANS:
Peat, lignite, bituminous coal, and anthracite.

STA: S6E6

38. ANS:

Of all the stages of coal formation, peat contains the least amount of carbon; therefore it burns less cleanly and causes the most air pollution.

STA: S6E6.a

39. ANS:
fission and fusion

STA: S6E6

40. ANS:
Nuclear waste can be radioactive for thousands of years.

STA: S6E6.a

41. ANS:
Fusion is more difficult because it requires such high temperatures that it can only be performed by humans in controlled lab experiments.

STA: S6E6.a

42. ANS:
They cannot be produced in large enough amounts to meet all our needs.

STA: S6E6.a