

Study Guide – Ch 18

MATCHING

In the space provided, write the letter of the term or phrase that best matches the description.

- | | |
|---|---|
| _____ 1. plant material, manure, and wood | a. passive solar heating |
| _____ 2. uses collectors with moving parts to capture the sun's energy | b. ocean thermal energy conversion (OTEC) |
| _____ 3. saves energy | c. alternative energy |
| _____ 4. energy sources that are still in development | d. biomass fuel |
| _____ 5. energy produced from moving water | e. fuel cell |
| _____ 6. uses the sun's energy to heat something directly, without moving parts | f. active solar heating |
| _____ 7. energy from heat in Earth's interior | g. energy efficiency |
| _____ 8. uses low pressure and warm ocean water to boil colder ocean water | h. energy conservation |
| _____ 9. percentage of energy that does useful work in a system | i. hydroelectric energy |
| _____ 10. uses hydrogen as an energy source | j. geothermal energy |

MULTIPLE CHOICE

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- _____ 11. Wind, moving water, sunlight, and heat from Earth's interior are sources of
- | | |
|------------------------|-------------------------|
| a. alternative energy. | c. renewable energy. |
| b. geothermal energy. | d. ocean thermal energy |
- _____ 12. Which of the following uses solar collectors to heat water?
- | | |
|--------------------------|-----------------------|
| a. passive solar heating | c. photovoltaic cells |
| b. active solar heating | d. all of the above |

Study Guide *continued*

- _____ 13. Which of the following is the fastest-growing source of energy in the world?
- a. passive solar heating
 - b. photovoltaic cells
 - c. fuel cells
 - d. wind power
- _____ 14. Which of the following is a major source of biomass fuel in developing countries?
- a. wood
 - b. dung
 - c. corn
 - d. both (a) and (b)
- _____ 15. A geothermal power plant gets energy by
- a. pumping heated water or steam from rock formations.
 - b. circulating fluid underground.
 - c. holding water behind a dam.
 - d. using methane from decomposition.
- _____ 16. Tidal power, hydrogen fuel cells, and ocean thermal energy conversion are sources of
- a. alternative energy.
 - b. geothermal energy.
 - c. nonrenewable energy.
 - d. hydroelectric energy.
- _____ 17. Which of the following descriptions of hybrid cars is correct?
- a. Hybrid cars do not use gasoline engines.
 - b. Hybrid cars have not been made yet.
 - c. Hybrid cars are energy-efficient.
 - d. Hybrid cars rely on biomass fuel.
- _____ 18. Which of the following statements about hydrogen as a fuel source is correct?
- a. The amount of hydrogen on Earth is too small to meet our fuel needs.
 - b. Hydrogen can be burned as a fuel or used to produce electricity chemically.
 - c. When hydrogen is burned, it releases pollutants.
 - d. Generating hydrogen by burning fossil fuels is inexpensive.
- _____ 19. Sunlight falls on a semiconductor, causing it to release electrons, in a
- a. photovoltaic cell.
 - b. fuel cell.
 - c. battery.
 - d. solar collector.
- _____ 20. People can conserve energy in their daily lives by driving a vehicle
- a. mostly for short distances.
 - b. instead of taking a bus or train.
 - c. with a large gas tank.
 - d. that is fuel-efficient.

CHAPTER 18 Review

Reviewing Key Terms

Use the correct key term to complete each of the following sentences.

- Much of the energy needs of the developing world are met by _____, such as fuelwood.
- A _____ converts the potential energy of moving water into the kinetic energy of a spinning turbine.
- Turning off the lights when you leave a room is an example of _____.

Use each of the following terms in a separate sentence.

- renewable energy*
- geothermal energy*
- alternative energy*
- energy conservation*

8. **Concept Map** Use the following terms to create a concept map: ~~sun, hydroelectric energy, solar energy, passive solar heating, active solar heating, water cycle, biomass fuel, wind energy, photovoltaic cell, and electric current.~~

Reviewing Main Ideas

- Which of the following forms of renewable energy uses the sun's energy most directly?
 - biomass fuel
 - passive solar heating
 - geothermal energy
 - a hydrogen fuel cell
- Which of the following energy sources is useful in most parts of the world?
 - tidal power
 - OTEC
 - geothermal energy
 - active solar energy
- A house that uses passive solar heating in the Northern Hemisphere will
 - have large south-facing windows.
 - have little insulation.
 - have large north-facing windows.
 - lack a vent in the roof.
- A passive solar house in the Southern Hemisphere will face
 - north.
 - south.
 - east.
 - west.
- Photovoltaic cells convert the sun's energy into
 - heat.
 - fuel.
 - electricity.
 - light.
- In a developing country, you are most likely to find biomass used
 - to generate electricity.
 - for manufacturing.
 - for heating and cooking.
 - as a source of hydropower.
- Which of the following is *not* true of fuel cells?
 - They produce electricity.
 - They will work with many different fuels.
 - They are more energy efficient than most engines used today.
 - They cannot be fueled by hydrogen gas.
- Which renewable energy source is the fastest growing energy source in the world?
 - oil
 - wind
 - biomass
 - photovoltaic cells
- Which statement describes why geothermal heat pumps work?
 - They are located in areas with abundant geothermal energy.
 - The ground is warmer than the air in summer and colder than the air in winter.
 - The ground is colder than the air in summer and warmer than the air in winter.
 - They run on hydrogen fuel cells.