

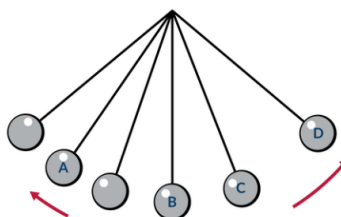
Name: _____

Physical Science Unit 2 Study Guide

Chapter 15:

Study all of the vocabulary terms for Chapter 15.

1. Which action involves the MOST efficient conversion of electrical energy into thermal energy?
 - a. a light bulb turning on inside an oven
 - b. a dishwasher rinsing dirty dishes with cold water
 - c. an electric mixer spinning to mix ingredients
 - d. an oven coil heating up to bake a cake
2. What happens to kinetic energy if mass is doubled? If velocity is doubled?
3. On what 3 variables does gravitational potential energy depend?
4. List an example of an object with elastic potential energy.
5. Computers can turn electrical energy into light and sound energy. Which other type of energy does a computer produce?
 - a. thermal energy
 - b. chemical energy
 - c. magnetic energy
 - d. gravitational energy
6. What is the law of conservation of energy?
7. Where does the ball in the diagram below have the most potential energy? The most kinetic energy?



8. In order to power an elevator, a motor must convert electrical energy into which other type of energy?
- a. mechanical energy
 - b. nuclear energy
 - c. light energy
 - d. thermal energy

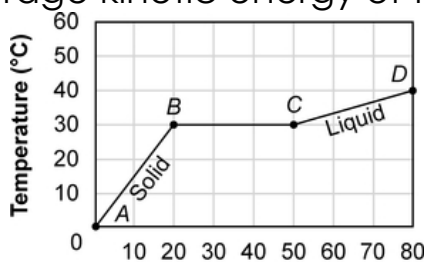
Chapter 16:

Study all of the vocabulary terms for Chapter 16.

9. Convection currents form when warm air rises and cold air sinks. What causes the warm air to rise and the cold air to sink?
- a. chemical energy
 - b. activation energy
 - c. a difference in density
 - d. that energy was transformed
10. How are kinetic energy and temperature related?
11. How much heat is absorbed when 50 g of water is heated from 27°C to 85°C? (The specific heat of water is 4.184 J/g°C.)
12. Which BEST describes the way particles move to heat objects using conduction?
- a. Fast moving particles in warm objects collide with electromagnetic waves.
 - b. Objects generate electromagnetic waves that are carried away from the object emitting them.
 - c. Fast moving particles collide with slower moving particles transferring their heat energy.
 - d. Particles expand with thermal energy, hot air rises and pushes cooler air down through circulation.
13. List the 3 laws of thermodynamics.

14. During which interval does the average kinetic energy of the molecules of the substance remain unchanged?

- a. AB c. BC
b. AC d. CD



15. Gita wants to use a fabric that will heat up and cool down quickly. Which material would be the BEST choice for the shirts?

Fabric	Specific Heat (J/g°C)
cotton	1.34
polyester	1.35
silk	1.38
wool	1.36

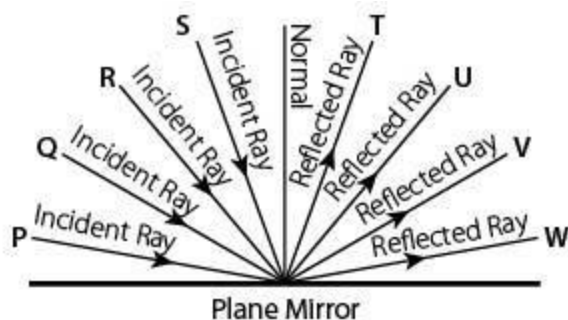
- a. cotton c. silk
b. polyester d. wool

Chapter 17:

Study all of the vocabulary terms for Chapter 17.

16. Mechanical waves must travel through a _____.
17. What starts a mechanical wave?

18. Which letters represent the correct pairing of an incident ray and the reflected ray?



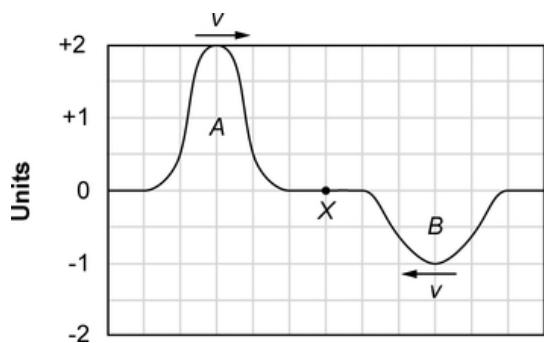
- a. P and T
- b. R and T
- c. R and U
- d. P and U

19. A train horn emits a sound wave that has a constant frequency of 580 hertz. Which possible frequency is detected by an observer as the train recedes?

- a. 570 hertz
- b. 580 hertz
- c. 590 hertz
- d. 600 hertz

20. How does the medium vibrate in a transverse wave? In a longitudinal wave? In a surface wave?

21. When the centers of the two pulses meet at point X, what is the displacement at the center of the resultant pulse?



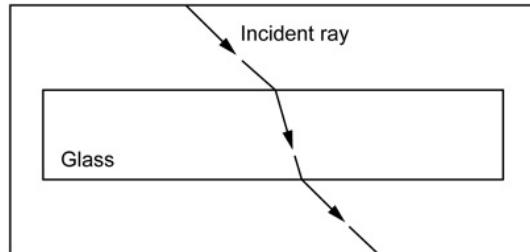
- a. -1 unit
- b. 0 units
- c. +1 unit
- d. +2 units

22. What happens to a sound source that is passing by at constant speed?

- a. The sound and pitch vary depending on the distance of surrounding objects.
- b. The sound keeps a constant, higher pitch as the sound source approaches and a constant, lower pitch as the source recedes.

- c. The sound keeps a constant, lower pitch as the source approaches and a constant, higher pitch as the source recedes.
- d. The sound maintains the same pitch except at the moment when it passes an object.

23. Which characteristic of light is demonstrated in this diagram?



- a. dispersion
- b. reflection
- c. magnification
- d. refraction

24. What is it called when two waves combine to form a larger wave?

25. Through which substance would sound waves travel the slowest?

- a. gelatin
- b. water
- c. wood
- d. air

26. What causes a wave to refract when it enters a new medium?

27. What determines how much a wave will diffract when it passes through a narrow opening?

28. What type of wave is a sound wave?

29. Through which state of matter does sound travel the fastest?

30. What is the difference between wave A and wave B?

