

Unit 3 Test Review: Energy

(For summative grade test on Friday, 11/6/09)

1. When the space shuttle returns to Earth from a space mission and reduces its speed in order to land, the _____ energy is _____.
2. The distance an object is located above the earth's surface directly influences the object's _____ energy.
3. A stone resting on a cliff has no _____ energy.
4. In a roller coaster with three hills, one low, one medium and one high, in what order do the hills have to be for the roller coaster to have enough potential energy to complete the third hill? Start with the _____ hill, and end up at the _____ hill.
5. Skateboarding on a ramp to the right is an example of the continuous transformations that can occur between _____ and _____ energy.
6. The skateboarder(s) with the most potential energy is skateboarder _____.
7. Give three examples of objects that are gaining potential elastic energy: _____, _____, and _____.
8. Give three examples of objects that have kinetic energy: _____, _____, and _____.
9. What kind of mechanical energy conversion occurs as a pendulum swings from the side to the bottom of its swing? _____ to _____.



10. What kind of mechanical energy conversion occurs when a tennis ball hits the ground and compresses? _____ to _____.
11. What kind of mechanical energy conversion occurs when a roller coaster car travels from the top of the hill to the bottom? _____ to _____
12. In general, earthquakes and volcanoes are a result of the transformation of _____ energy to _____ energy.
13. What form of energy is stored in the nucleus of an atom, and released during fission or fusion? _____
14. What form of energy is stored in the bonds between atoms in molecules, in substances such as sugar and gasoline? _____
15. What form of energy is either found in moving objects or stored in objects that are under stress or located at a height above the ground? _____
16. What form of energy is found in vibrating atoms and molecules, and is commonly sensed by animals as heat? _____
17. What form of energy, such as visible light and microwaves, is transmitted by waves that can travel through a vacuum? _____
18. What form of energy is stored in objects containing electrons, or transmitted in metals by the movement of electrons? _____
19. A new battery is a good example of _____ energy.
20. What energy conversion takes place at the Sun, so that its energy can reach Earth? _____ to _____
21. What energy conversion takes place when you light a match? _____ and _____ to _____ and _____

22. What energy conversion takes place when a turbine spins a generator in an electric power plant? _____ to _____
23. What kind of energy conversion takes place in a fluorescent light bulb?
_____ to _____
24. Animals get energy from the food they eat. What is the original source of this energy? _____
25. The conversion of energy in photosynthesis is from _____ energy to _____ energy.
26. What is the pigment that makes leaves green and captures energy from the Sun? _____
27. What is the organelle in plant cells where photosynthesis occurs?

28. What are the reactants (ingredients) in the photosynthesis chemical reaction? _____ and _____
29. What are the products (the end result) in the photosynthesis chemical reaction? _____ and _____
30. What size of leaves and level of light on plants would most likely have the highest rate of photosynthesis? _____ leaves with a _____ level of light.
31. Trees that grow in a forest tend to grow very tall with few branches. The same species of tree grown in an open area tends to grow shorter with many branches. The stimulus responsible for these different growth patterns is the amount of _____ reaching the tree.
32. The response of plants to the stimulus of light, in which they turn and grow towards a light source, is called: _____.
33. The response of plants to the stimulus of gravity, in which plant seedling roots grow down towards the center of the Earth, and stems grow up away from the center of the Earth, is called: _____.

34. What kind of energy resources are geothermal, wind, and solar energy?

35. What kind of energy resources are forests, crops and other biomass sources, such as wood or corn converted to alcohol?

36. What kind of energy resources are coal, uranium, natural gas and petroleum (oil)? _____
37. Write a short essay describing the energy conversions that occur in an automobile. Be specific in describing both the form of energy before and after each conversion, and the corresponding part and process in the automobile where each conversion occurs. (10 pts.)
38. Describe what changes in the use of energy resources that humans will have to make in the future, as the supply of fossil fuels drops. (10 pts.)

District Questions from Past Units

39. Are the elements located on the upper, left side of the Period Table of Elements, in Group 1, metals or non-metals? Are they reactive or non-reactive? _____, _____.
40. A scientist is working on an experiment and needs NaCl. The scientist found KCl but no NaCl. How does the scientist know the KCl will work the same as the NaCl in the experiment? Because potassium (K) is in the same _____ as sodium (Na), and has the same _____.
41. What laboratory items can safely be recycled? _____
_____.