

# Comparing Alternative Energy Forms Test

1. What is the formula for kinetic energy?	A. $mgh$ B. $.5*mv^2$ C. $PV=nRT$ D. $F=ma$
2. Where in a nuclear power system is kinetic energy present other than around the turbine?	A. generator B. nuclear reaction C. water steaming D. fuel rods
3. Where in a solar cell is potential energy?	A. when the photon falls to earth B. on the purple side C. in the boron atoms D. as an electron moves through the network
4. What element is added to silicon to create P-type silicon?	A. Boron B. Phosphorus C. Uranium D. Nickel
5. What element is added to silicon to create N-type silicon?	A. Phosphorus B. Boron C. Nickel D. Uranium
6. Wind power is most similar to water power in what way?	A. principle force action B. turbine C. generator D. steam
7. As the pressure of a gas builds, what happens to it's force if it is released?	A. decreases B. increases C. goes to 0
8. Power is measured in what unit?	A. J B. atm C. W D. m
9. A generator works because of what scientific concept?	A. lewis structures B. valence C. electricity D. magnetism
10. A turbine turns and causes what to spin?	A. generator B. propeller C. controls D. the earth
11. Wind power plants fulfill the most wind power potential where?	A. in the desert B. in caves C. offshore D. the Dead Sea
12. True or False: Nuclear Power Plants are often found in areas of high population.	A. True B. False
13. What inventor was part of the history of nuclear power?	A. Diesel B. Edison C. Franklin D. King Tut
14. True or False: Understanding the concept of moles allows you to compare amounts in chemical equations.	A. True B. False
15. What element is at the heart of the nuclear reaction?	A. Gold B. Silver C. Xenon D. Uranium
16. Which form of radiation is symbolized by $4_2\text{He}$ ?	A. beta B. alpha C. gamma D. implosive force
17. True or False: The price of gasoline affects the amount of alternative energy reseach and funding.	A. True B. False
18. Can solar power also be considered atomic power, just as nuclear power is?	A. No B. Yes C. Maybe
19. An isotope includes what number in its notation?	A. electron number B. percent composition C. mass number D. orbital numbers
20. What structures allow the concepts of solar cells to be easily analyzed?	A. magnetic B. lewis C. orbitals D. radioactive
21. What engine is part of nuclear power's history?	A. mechanical B. steam C. mobile D. hyperactive
22. Which people used the power of the sun to stop a Roman invasion?	A. Greeks B. Aryans C. Moslems D. Egyptians
23. Passive solar power is used for what?	A. cooling B. irrigation C. heating D. blocking
24. True or False: A nuclear meltdown like Chernobyl has long lasting effects on the environment.	A. True B. False
25. What is the equation for force that relates mass and acceleration?	A. $F = ma$ B. $F = a / m$ C. $F = m / a$ D. $F = a^2 m$
26. Light moves in what kind of direction?	A. parallel B. indirect C. perpendicular D. wave
27. What greek letter is in the circle of the schematic for a solar cell?	A. omega B. lamda C. alpha D. zeta
28. Is the nuclear power reaction endothermic?	A. Yes B. No
29. What is another alternative energy form that is similar to nuclear power?	A. cabbage B. lead C. wood burning D. animals

30. True or False: Mechanical energy is composed of kinetic and potential energy.	A. True B. False
31. If the temperature before and exothermic reaction was 28 degrees C and after the reaction was 39 degrees C, what was the volume after if the volume before was 32L ?	A. 33L B. 42L C. 65L D. 45L
32. Three half lives ago the mass was 82kg. What is it now?	A. 12g B. 10.25g C. 17.5g D. 35g
33. The mass before and after a nuclear decay half life period is 21g and 10.5g respectively. How many half lives occurred?	A. 2 B. 1 C. 3 D. 4
34. Before and after a balloon was heated its volume was 20L and 60L. Determine its initial temperature if it's last temperature was 98K.	A. 87K B. 0.06K C. 33K D. 18K
35. Find the pressure after an event if before it is 30 atmospheres and the volume is 20L after and 40L before.	A. 27 atm B. 12 atm C. 19.9 atm D. 10 atm
36. How much energy is consumed when 32W is used over eight seconds?	A. 128J B. 202J C. 134J D. 256J
37. What is the frequency of light that has a wavelength of 16m and a velocity of 12m/s?	A. .5 Hz B. .75Hz C. 1Hz D. 2Hz
38. In the reaction $Mg + 2HCl \rightarrow Mg(Cl)_2 + H_2$ , six moles of Hydrochloric acid are used. How many moles of H <sub>2</sub> are produced?	A. 5 B. 8 C. 3 D. 12
39. The total heat of a system is 60kJ. The work done on the system is also 60kJ. Find the change in energy.	A. 120kJ B. 240kJ C. -120kJ D. -240kJ
40. What is the kinetic energy of a 0.99kg cat that has a velocity of 13m/s?	A. 55J B. 64J C. 51J D. 84J