

RQ Energy From the Sun

Name: _____

Date: _____

- Which *best* contrasts nuclear fission and nuclear fusion?
 - fission: splitting of small atoms
fusion: joining of large atoms
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fusion: joining of large atoms
 - fission: needs extremely low temperatures
fusion: needs slightly higher temperatures than fission
- Which of the following properties is the same for all electromagnetic waves in a vacuum?
 - amplitude
 - frequency
 - speed
 - wavelength
- What method of heat transfer allows the Sun's heat energy to reach Earth through the vacuum of space?
 - condensation
 - conduction
 - convection
 - radiation
- Extremely high temperatures are needed for fusion reactors to function efficiently. What state of matter is *most* common at these temperatures?
 - plasma
 - gas
 - liquid
 - solid
- Which of the following aspects of electromagnetic radiation best explains why electromagnetic radiation is both useful and harmful to humans?
 - Electromagnetic radiation travels at the speed of light.
 - Electromagnetic radiation can travel through a vacuum.
 - Electromagnetic radiation is energy and can interact with matter.
 - Electromagnetic radiation can be described in terms of both wavelength and frequency.
- Which of the following statements applies to a nuclear fission reaction?
 - The reaction has no commercial applications.
 - The reaction takes place only at very high temperatures.
 - The reaction produces only shortlived radioactive waste.
 - The reaction releases large amounts of energy when nuclei split apart.
- What is the source of energy for the Sun?
 - hydrogen fusion
 - internal combustion
 - nuclear fission of metals
 - burning of solar gases

8. Fusion is a form of nuclear reaction resulting in an enormous release of heat energy. The fusion of hydrogen to helium is a reaction that commonly occurs in

- A. the Sun and other typical stars.
- B. the ionosphere and thermosphere.
- C. Earth's outer core of molten iron.
- D. a comet's tail of ionized gases.

9. As part of the modern theory of the origins of the elements, it is hypothesized that before the formation of the stars, most of the matter in the universe consisted of what atoms?

- A. hydrogen and helium
- B. nitrogen and carbon
- C. silicon and lithium
- D. uranium and radium

10. The radiant energy that comes from the Sun

- A. is only one wavelength that we see as yellow.
- B. a narrow band of wavelengths that is entirely visible light.
- C. is mostly long wavelengths that become heat energy.
- D. travels to Earth in the form of an electromagnetic wave.