

Cosmic Power Sources

Renewable Energy · Answer Key · 18 Questions

1. What is the primary source of solar energy that reaches Earth from space?

- A) The Moon
- B) The Sun**
- C) Jupiter
- D) Mars

2. Which form of renewable energy is generated by the gravitational pull of the Moon and the Sun on Earth's oceans?

- A) Tidal energy**
- B) Wind energy
- C) Geothermal energy
- D) Biomass

3. What type of star is our Sun, which provides the constant light used in solar panels?

- A) Red giant
- B) White dwarf
- C) G-type main-sequence star**
- D) Neutron star

4. In space, what do satellites typically use to convert sunlight directly into electricity?

- A) Steam turbines
- B) Photovoltaic cells**
- C) Coal burners
- D) Nuclear reactors

5. The kinetic energy of wind on Earth is largely driven by temperature differences caused by what celestial body?

- A) The Sun**
- B) Saturn
- C) Venus
- D) The North Star

6. Which planet has an atmosphere that generates massive, high-speed wind storms that could theoretically produce wind energy?

- A) Neptune**
- B) Mercury
- C) Mars
- D) The Moon

7. What is the name of the process that powers the Sun, providing the energy that makes all renewable resources on Earth possible?

- A) Combustion
- B) Nuclear fusion**
- C) Friction
- D) Geothermal heating

8. Which part of Earth's crust provides geothermal energy, heat that originates from the planet's formation?

- A) The atmosphere
- B) The ocean surface
- C) The mantle and core**
- D) The exosphere

9. What do solar panels on the International Space Station capture to power its onboard systems?

- A) Moonlight
- B) Starlight
- C) Solar radiation**
- D) Cosmic rays

10. Which light-based energy source is used to power spacecraft far from the Sun where solar panels are less effective?

- A) Wind energy
- B) Radioisotope thermoelectric generators**
- C) Tidal energy
- D) Hydroelectric dams

11. The Earth receives more solar energy in one hour than the entire world uses in how long?

- A) One year**
- B) One month
- C) One day
- D) One week

12. What celestial phenomenon occurs when the Moon blocks sunlight, temporarily reducing solar power generation on Earth?

- A) Lunar eclipse
- B) Solar eclipse**
- C) Meteor shower
- D) Supernova

13. Which renewable energy source relies on the water cycle, a process driven by heat from the Sun?

- A) Hydroelectric power**
- B) Geothermal power
- C) Tidal power
- D) Nuclear fission

14. What is the main byproduct of the nuclear fusion process that powers our Sun?

- A) Helium**
- B) Coal
- C) Oil
- D) Natural gas

15. Which planet is closest to the Sun and receives the most intense solar energy?

- A) Earth
- B) Mars
- C) Mercury**
- D) Venus

16. What causes the variation in the amount of solar energy hitting different parts of the Earth throughout the year?

- A) The Earth's tilt**
- B) The size of the Moon
- C) The speed of Jupiter
- D) The rotation of Venus

17. What type of light is emitted by the Sun that solar panels are designed to convert into electricity?

- A) Electromagnetic radiation**
- B) Sound waves
- C) Gravitational waves
- D) Dark matter

18. Which renewable energy source is indirectly linked to the rotation of the Earth and its interaction with the Sun's heat?

A) Wind energy

B) Nuclear energy

C) Coal mining

D) Petroleum extraction