

Renewable Energy Foundations

Science · Practice Test · 18 Questions

1. Which renewable energy source relies on the gravitational pull of the moon to generate electricity?

- A) Solar power
- B) Tidal energy
- C) Geothermal energy
- D) Biomass

2. What is the primary substance used in most commercial solar panels to convert sunlight into electricity?

- A) Copper
- B) Silicon
- C) Carbon
- D) Iron

3. Which component of a wind turbine is responsible for converting mechanical energy into electrical energy?

- A) Rotor blades
- B) Nacelle
- C) Generator
- D) Tower

4. What is the process of converting organic waste, such as food scraps or manure, into energy called?

- A) Biomass energy
- B) Nuclear fission
- C) Hydropower
- D) Thermal extraction

5. Geothermal energy is derived from which internal source?

- A) The Earth's core heat
- B) Magnetic field friction
- C) Tectonic plate shifting
- D) Volcanic ash deposits

6. Which of the following is a disadvantage of relying solely on solar and wind power?

- A) They produce high greenhouse gas emissions
- B) They are intermittent energy sources
- C) They require fossil fuels to start
- D) They only work in the Southern Hemisphere

7. In a hydroelectric power station, what is the primary force that drives the turbine?

- A) Rising steam
- B) Flowing water
- C) Burning fuel
- D) Tidal wind

8. What is the main environmental benefit of using renewable energy compared to burning coal?

- A) Increased mining jobs
- B) Lower carbon dioxide emissions
- C) Higher noise pollution
- D) Reduction in water usage

9. Which term describes the ability of a power grid to store energy for use when generation is low?

- A) Grid balancing
- B) Energy storage
- C) Voltage regulation
- D) Resource allocation

10. Which type of energy is generated by capturing the kinetic energy of moving air?

- A) Hydroelectric
- B) Wind energy
- C) Geothermal
- D) Solar thermal

11. What is the primary function of a photovoltaic cell?

- A) To heat water
- B) To convert light directly into electricity
- C) To store wind energy
- D) To burn biomass for heat

12. Which of these is considered a 'non-renewable' energy source?

- A) Natural gas
- B) Tidal power
- C) Solar energy
- D) Wind energy

13. What do we call the use of building design to capture sunlight for heating without mechanical systems?

- A) Active solar heating
- B) Passive solar design
- C) Geothermal architecture
- D) Wind harvesting

14. Which country is often cited as a global leader in utilizing geothermal energy for heating and electricity?

- A) Iceland
- B) Australia
- C) Brazil
- D) Canada

15. What is the main byproduct of a hydrogen fuel cell used in transport?

- A) Carbon dioxide
- B) Water vapor
- C) Methane
- D) Soot

16. Which energy source is limited by its requirement for specific geographical locations, such as volcanic regions?

- A) Solar power
- B) Wind power
- C) Geothermal energy
- D) Biomass energy

17. What is the purpose of an inverter in a home solar power system?

- A) To clean the panels
- B) To convert DC electricity to AC electricity
- C) To increase wind speed
- D) To store hot water

18. Which term refers to the total amount of greenhouse gases generated by our actions?

- A) Energy efficiency
- B) Carbon footprint
- C) Renewable quota
- D) Power capacity