Renewable Energy Masterclass

Renewable Energy · Answer Key · 12 Questions

1. Which component inside a wind turbine is responsible for converting the mechanical rotation of the blades into electricity?

A) Turbine blade
B) Gearbox
C) Generator
D) Anemometer

2. What is the primary material used to manufacture the majority of modern solar photovoltaic cells?

A) Silicon
B) Copper
C) Aluminum
D) Plastic

3. In a hydroelectric dam, what is the purpose of the 'penstock'?

A) To store the electricity
B) To filter the water
C) To channel water from the reservoir to the turbine
D) To measure the water temperature

4. Geothermal energy is primarily derived from which source within the Earth?

A) The Sun
B) Radioactive decay and residual heat from Earth's formation
C) Friction from tectonic plates
D) Magnetic fields

5. What gas is most commonly captured from decomposing organic matter in landfills to be used as a renewable fuel?

A) Oxygen
B) Nitrogen
C) Methane
D) Helium

6. What is the term for the process where solar panels convert sunlight directly into electricity without using heat?

A) Thermal conversion
B) Photovoltaic effect
C) Photosynthesis
D) Electrolysis

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7. Which type of solar technology uses mirrors to concentrate sunlight onto a fluid to produce steam for electricity generation?

A) Concentrated Solar Power
B) Photovoltaic cells
C) Solar thin-film
D) Passive solar design

8. In tidal energy, what is the 'barrage' used for?

A) To speed up the fish
B) To create a controlled water level difference to drive turbines
C) To prevent the tide from rising
D) To store wind energy

9. What is the main byproduct produced when a hydrogen fuel cell generates electricity?

A) Carbon dioxide
B) Water vapor
C) Methane
D) Sulfur

10. Which renewable energy source relies on the Earth's orbit and the gravitational pull of the Moon?

A) Solar
B) Wind
C) Tidal
D) Biomass

11. What is the function of an 'inverter' in a home solar power system?

A) To increase the voltage of the sun
B) To convert DC electricity into AC electricity
C) To store energy in a battery
D) To keep the solar panels cool

12. Biomass energy is considered carbon neutral because the plants used to create it absorbed what during their growth?

A) Carbon dioxide
B) Nitrogen
C) Argon
D) Neon

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