

Name: _____ Date: _____

The Infinite Battery: 10th Grade Renewable Systems Quiz

Examine how closed-loop manufacturing and geothermal heat pumps transform modern industrial footprints through low-complexity systems analysis.

1. Which of these is a key benefit of 'remanufacturing' in a circular economy, such as rebuilding heavy machinery engines in Peoria, Illinois?

- A. It increases the need for raw iron ore mining.
- B. It saves energy and prevents waste from entering landfills.
- C. It ensures products are designed for single-use cycles.
- D. It speeds up the rate of product obsolescence.

2. True or False: Using 'Greywater' systems—recycling water from sinks and showers for irrigation—is a form of resource conservation.

- A. True
- B. False

3. Iceland relies heavily on _____ energy, which uses the Earth's internal heat to generate constant electricity without burning fuel.

- A. Hydroelectric
- B. Biomass
- C. Geothermal
- D. Nuclear

4. When a city in the Netherlands builds 'green roofs' (roofs covered in living plants), which environmental issue are they primarily mitigating?

- A. The urban heat island effect
- B. Light pollution
- C. Soil salinity
- D. Deforestation in the tropics

5. True or False: Economic sustainability means that a business must focus ONLY on making a profit, regardless of its impact on the community.

- A. True
- B. False

6. The use of _____ involves planting different types of trees and crops together to improve soil nutrients and provide diverse income for farmers.

- A. Monoculture farming
- B. Agroforestry
- C. Hydroponics

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D. Factory farming

7. Which concept best describes the practice of 'Indigenous Land Management' used by Aboriginal Australians to prevent massive wildfires?

- A. Industrial logging
- B. Cultural burning
- C. Urban sprawling
- D. Chemical suppression

8. A city that implements 'Bus Rapid Transit' (BRT) lanes, like Curitiba, Brazil, is primarily trying to improve _____ sustainability.

- A. Agricultural
- B. Oceanic
- C. Social and Environmental
- D. Geological

9. True or False: Sustainability is strictly about protecting nature and does not involve human rights or fair labor practices.

- A. True
- B. False

10. Värmevärden in Sweden uses 'Waste-to-Energy' plants to provide heat to homes. This is an example of which sustainable principle?

- A. Increasing plastic production
- B. Resource recovery
- C. Atmospheric depletion
- D. Linear consumption