

Name: _____ Date: _____

Answer Key: Sturdy Systems: Sustainability for Superior Seniors

Evaluate the complex interplay between industrial ecology, life cycle assessments, and triple bottom line accounting in modern resource management.

1. Which framework evaluates a corporation's performance by integrating social and environmental impact alongside traditional financial profits?

Answer: B) The Triple Bottom Line

The Triple Bottom Line (TBL) measures success based on three pillars: People, Planet, and Profit, moving beyond just fiscal gain.

2. The concept of _____ promotes a closed-loop system where waste from one industrial process becomes the feedstock for another.

Answer: A) Industrial Ecology

Industrial ecology mimics natural ecosystems by cycling materials and energy, exemplified by the Kalundborg symbiosis in Denmark.

3. True or False: Life Cycle Assessment (LCA) 'Cradle-to-Grave' analysis only accounts for the energy consumption during the manufacturing phase of a product's life.

Answer: B) False

LCA is comprehensive, analyzing environmental impacts from raw material extraction through transportation, use, and final disposal.

4. What is the primary objective of implementing a 'Circular Economy' in urban development?

Answer: C) Decoupling economic growth from finite resource consumption

Circular economies aim to maintain the value of products and materials for as long as possible, breaking the link between growth and depletion.

5. The paradox where technological efficiency gains lead to an overall increase in resource consumption is known as _____.

Answer: B) The Jevons Paradox

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Jevons Paradox occurs when improvements in efficiency make a resource cheaper or more accessible, leading to higher total demand.

6. When applying the 'Precautionary Principle' to new chemical manufacturing, what is required of the manufacturer?

Answer: C) Burden of proof to show the product is not harmful before widespread use

The Precautionary Principle suggests that if an action has a risk of causing harm, the burden of proof that it is safe falls on those taking the action.

7. True or False: Intergenerational equity focuses specifically on ensuring that resources are distributed fairly among different socioeconomic groups currently living today.

Answer: B) False

Intergenerational equity refers to fairness between current and future generations; fairness among people today is called intragenerational equity.

8. Which land-use strategy integrates trees and shrubs into crop and animal farming systems to create environmental and economic benefits?

Answer: B) Agroforestry

Agroforestry increases biodiversity, improves soil structure, and sequesters more carbon than conventional row-crop agriculture.

9. In the context of the UN Sustainable Development Goals, 'Decent Work and Economic Growth' is Goal Number _____.

Answer: B) Goal 8

Goal 8 focuses on promoting sustained, inclusive economic growth and productive employment, a core pillar of social sustainability.

10. True or False: Biomimicry involves studying nature's best ideas and then imitating these designs and processes to solve human problems sustainably.

Answer: A) True

Biomimicry, such as designing wind turbines based on whale fins, uses evolutionarily tested patterns to improve efficiency.