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## Answer Key: Decoupling Growth: High School Sustainability Systems Quiz

Learners synthesize the Triple Bottom Line and Life Cycle Analysis to solve complex geopolitical and ecological resource scarcity challenges.

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**1. A nation implements a 'Circular Economy' mandate requiring manufacturers to design products for disassembly and remanufacturing. This strategy primarily targets which specific sustainability metric?**

**Answer:** B) Decoupling economic growth from resource consumption

A circular economy aims to keep materials in use longer, effectively separating economic success from the extraction of finite raw materials.

**2. The concept that considers the social, environmental, and financial outcomes of a business to measure its total success is known as the \_\_\_\_\_.**

**Answer:** C) Triple Bottom Line

The 'Triple Bottom Line' framework evaluates performance based on People, Planet, and Profit, moving beyond traditional fiscal-only reporting.

**3. Intergenerational equity suggests that the current generation has a moral obligation to ensure future generations have access to the same level of natural capital.**

**Answer:** A) True

Intergenerational equity is a core ethical pillar of sustainability, asserting that today's resource use should not disadvantage future populations.

**4. In the context of the 'Tragedy of the Commons,' what is the most effective systemic solution for managing a shared groundwater aquifer used by competing industrial farms?**

**Answer:** B) Implementing 'command and control' regulation or tradable permits

To prevent the depletion of a common resource, collective governance through regulation or market-based permits is necessary to limit individual exploitation.

**5. When a company spends more time and money marketing itself as environmentally friendly than on actually minimizing its impact, the practice is called \_\_\_\_\_.**

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**Answer:** B) Greenwashing

Greenwashing is a deceptive marketing strategy used to create a false image of environmental responsibility, often obscuring harmful corporate practices.

**6. Which of these represents a 'Cradle-to-Cradle' approach in industrial design?**

**Answer:** B) Using biodegradable materials that return nutrients to the soil

Cradle-to-Cradle design mimics nature's biological cycles, where waste from one process becomes food (nutrients) for another.

**7. The 'Precautionary Principle' advises that if an action or policy has a suspected risk of causing harm to the public or the environment, the burden of proof that it is NOT harmful falls on those taking the action.**

**Answer:** A) True

This principle ensures safety in the face of scientific uncertainty, prioritizing environmental and health protections before new technologies are deployed.

**8. The total area of land and water required to provide the resources a person consumes and to absorb their waste is their \_\_\_\_\_.**

**Answer:** C) Ecological Footprint

The ecological footprint is a standardized measure of human demand on Earth's ecosystems, comparing consumption to the planet's ability to regenerate.

**9. How does 'Life Cycle Assessment' (LCA) assist in sustainable decision-making?**

**Answer:** B) It evaluates the environmental impact of a product from raw material extraction to disposal

LCA provides a comprehensive view of a product's 'hidden' environmental costs across all stages, including extraction, manufacturing, use, and end-of-life.

**10. Economic sustainability is achieved when a society focuses solely on maximizing the profit of multinational corporations, assuming wealth will 'trickle down' to protect ecosystems.**

**Answer:** B) False

Economic sustainability requires long-term viability that maintains social equity and environmental health, rather than just short-term corporate profit.

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