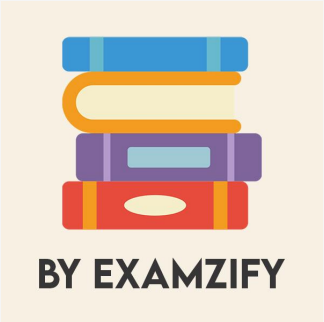
Arizona State University (ASU) SOS110 Sustainable World Final Practice Exam (Sample)

Study Guide



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Questions

1. How does deforestation impact climate change?

   A. By creating more land for agriculture

   B. By increasing biodiversity

   C. By releasing stored carbon dioxide and disrupting ecosystems

   D. By enhancing the ability of forests to store carbon

2. What does resilience refer to in a system?

   A. The ability to completely change after disturbances

   B. The ability of a system to absorb impacts and maintain its regime

   C. The overall aesthetic appeal of a system

   D. The speed at which a system can recover

3. Which of the following is an example of an ecosystem service?

   A. Construction of buildings

   B. Provision of clean air

   C. Refinement of fossil fuels

   D. Production of plastic

4. How do local policies influence sustainability efforts?

   A. They have no impact on sustainability

   B. They create regulations and incentives for sustainable resource use

   C. They primarily focus on economic incentives

   D. They only promote individual practices without community involvement

5. What is meant by "waste reduction"?

   A. Strategies to decrease the amount of waste generated

   B. Increasing the amount of waste through production

   C. Ignoring recycling initiatives

   D. Promoting single-use plastics

6. How does the concept of privatizing vital resources relate to sustainability?

A. It encourages shared resource management

B. It prevents resource depletion through community control

C. It ensures that essential resources are not overused

D. It promotes businesses' ability to control resource use

7. How does habitat destruction specifically affect wildlife?

A. It creates more breeding grounds for various species.

B. It leads to loss of food sources and shelter.

C. It increases the biodiversity of the area.

D. It improves ecological balance in the ecosystem.

8. What does 'full-cost pricing' aim to include in its assessment?

A. Only production costs associated with goods

B. Social and cultural impacts of production

C. Production costs, health costs, and ecosystem service loss

D. Only environmental clean-up costs after damage occurs

9. What is one advantage of using natural gas as an energy source?

A. It emits more CO_2 than coal

B. It has limited availability

C. It emits less CO_2 and other pollutants than other fossil fuels

D. It is always cost-effective

10. How can companies implement corporate social responsibility (CSR)?

A. By adopting ethical practices

B. By focusing solely on profit maximization

C. By ignoring community engagement

D. By maintaining secrecy in operations

Answers

1. C
2. B
3. B
4. B
5. A
6. C
7. B
8. C
9. C
10. A

Explanations

1. How does deforestation impact climate change?

A. By creating more land for agriculture

B. By increasing biodiversity

C. By releasing stored carbon dioxide and disrupting ecosystems

D. By enhancing the ability of forests to store carbon

Deforestation has a significant impact on climate change primarily by releasing stored carbon dioxide and disrupting ecosystems. Forests act as carbon sinks, meaning they absorb carbon dioxide from the atmosphere and store it in the form of biomass (including trees, plants, and soil). When forests are cut down, this stored carbon is released back into the atmosphere, primarily as carbon dioxide, which is a potent greenhouse gas. This increase in carbon emissions contributes to the greenhouse effect, leading to global warming and climate change. Additionally, deforestation disrupts ecosystems, leading to biodiversity loss and altered water cycles, which can further exacerbate climate imbalances. The removal of trees not only reduces the capacity to sequester carbon but also affects local climates, soil health, and the overall environmental stability of the area. Thus, the primary consequence of deforestation in the context of climate change is the release of stored carbon and the resulting alterations to ecosystems that depend on such forests.

2. What does resilience refer to in a system?

A. The ability to completely change after disturbances

B. The ability of a system to absorb impacts and maintain its regime

C. The overall aesthetic appeal of a system

D. The speed at which a system can recover

Resilience in a system is fundamentally about its capacity to absorb and adapt to disturbances while maintaining its essential functions and structure. This concept is vital in understanding how various ecosystems, communities, and even economic systems can withstand shocks such as natural disasters, climate change impacts, or economic downturns without fundamentally altering their core characteristics. By emphasizing the ability of a system to absorb impacts, resilience acknowledges that while disturbances may cause temporary disruptions, the system can still operate within its established boundaries. This resilience does not imply that the system will remain unchanged; rather, it may evolve, but the key point is that it retains its core functionality and can continue to perform its primary roles despite external pressures. In contrast, the other options present misinterpretations of resilience. For instance, the notion of completely changing after disturbances does not capture the essence of resilience, which is about maintaining stability. The overall aesthetic appeal of a system is unrelated to its capacity to deal with disturbances and therefore does not define resilience in a meaningful way. Finally, while recovery speed is an important aspect of resilience, it is not the defining characteristic; rather, it is one of the factors that can affect a system's overall resilience but does not encompass the concept in its entirety. The core of resilience lies in

3. Which of the following is an example of an ecosystem service?

A. Construction of buildings

B. Provision of clean air

C. Refinement of fossil fuels

D. Production of plastic

The provision of clean air is an example of an ecosystem service because it directly benefits human health and well-being, as well as the overall functioning of the environment. Ecosystem services refer to the benefits that humans derive from natural ecosystems, which include provisioning services (like food and water), regulating services (such as air quality and climate regulation), supporting services (like nutrient cycling and habitat provision), and cultural services (such as recreational and aesthetic enjoyment). Clean air is a critical regulating service as it is essential for the survival of all living organisms and is inherently linked to natural processes like photosynthesis, plant respiration, and the filtration of pollutants by vegetation and soil. When ecosystems function properly, they help maintain air quality by filtering out harmful substances and providing the oxygen necessary for life. In contrast, options like construction of buildings, refinement of fossil fuels, and production of plastic are all human-made activities that do not provide the same direct benefits of ecosystem services; instead, they often lead to environmental degradation and can contribute negatively to ecosystems. Therefore, the provision of clean air stands out as an important example of how healthy ecosystems directly support human life and the planet's ecological balance.

4. How do local policies influence sustainability efforts?

A. They have no impact on sustainability

B. They create regulations and incentives for sustainable resource use

C. They primarily focus on economic incentives

D. They only promote individual practices without community involvement

Local policies play a crucial role in shaping sustainability efforts, as they establish the framework within which communities operate. By creating regulations and incentives for sustainable resource use, local policies can encourage practices that lead to more efficient use of resources, reduction of waste, and overall enhancement of environmental quality. For instance, policies can mandate recycling programs, promote renewable energy installations, or provide tax benefits for green businesses. These regulatory measures and incentives are essential in guiding both businesses and individuals toward more sustainable practices. When local governments implement policies that support sustainability, they create an environment that fosters collective action and shared responsibility among community members, leading to more significant and long-lasting impacts on the environment. This approach emphasizes the importance of local governance in implementing sustainability strategies, which can be more responsive to the specific needs and contexts of communities compared to broader, national policies.

5. What is meant by "waste reduction"?

A. Strategies to decrease the amount of waste generated

B. Increasing the amount of waste through production

C. Ignoring recycling initiatives

D. Promoting single-use plastics

Waste reduction refers to the implementation of strategies aimed at decreasing the total amount of waste that is produced. This encompasses a range of practices, such as reducing the consumption of materials, improving the efficiency of production processes, rethinking product design for sustainability, and encouraging behaviors that minimize waste generation. By focusing on waste reduction, individuals and organizations can significantly lessen their ecological footprint, conserve resources, and promote a more sustainable approach to consumption. The concept of waste reduction is crucial in environmental sustainability, as it helps address the pressing issue of overflowing landfills and the environmental impact of waste disposal. This approach emphasizes prevention—seeking to avoid creating waste in the first place rather than merely managing it after it is created.

6. How does the concept of privatizing vital resources relate to sustainability?

A. It encourages shared resource management

B. It prevents resource depletion through community control

C. It ensures that essential resources are not overused

D. It promotes businesses' ability to control resource use

The concept of privatizing vital resources and its relationship to sustainability can be better understood through the lens of how resource management approaches can impact resource use and conservation practices. The idea that privatization ensures that essential resources are not overused stems from the notion that private ownership creates a financial incentive for individuals or companies to manage resources responsibly. When entities own resources, they are more likely to implement practices that ensure long-term sustainability, as their economic interests align with the preservation of these resources. Private owners may invest in efficient technologies and sustainable practices to enhance resource quality while preventing depletion. This contrasts with the "tragedy of the commons," where shared resources may suffer from over-exploitation due to a lack of personal accountability or incentive to conserve. Therefore, privatization can potentially result in better resource management and sustainability outcomes when it leads to responsible practices. To illustrate this further, in scenarios where there is strong regulation, market mechanisms can lead to innovative solutions for resource management, aligning profit motives with environmental stewardship. In other contexts, the failure of unregulated private entities to consider long-term impacts can lead to negative outcomes, such as overexploitation and depletion, but the correct answer focuses on the idea that, ideally, privatization encourages a more sustainable approach to resource use

7. How does habitat destruction specifically affect wildlife?

A. It creates more breeding grounds for various species.

B. It leads to loss of food sources and shelter.

C. It increases the biodiversity of the area.

D. It improves ecological balance in the ecosystem.

Habitats are the natural environments where wildlife lives, feeds, breeds, and finds shelter. When habitat destruction occurs, it directly impacts wildlife by removing the necessary elements for their survival. Loss of food sources means that animals cannot find adequate nutrition, which can lead to malnutrition or starvation. Additionally, the destruction of shelter often results in displacement, as animals are forced to leave areas they rely on for breeding and protection from predators. Consequently, wildlife populations can decline significantly due to these factors, leading to decreased biodiversity and potential extinction of sensitive species. This option accurately describes the negative consequences of habitat destruction on wildlife.

8. What does 'full-cost pricing' aim to include in its assessment?

A. Only production costs associated with goods

B. Social and cultural impacts of production

C. Production costs, health costs, and ecosystem service loss

D. Only environmental clean-up costs after damage occurs

Full-cost pricing is an economic approach that seeks to account for the complete costs associated with the production, consumption, and disposal of goods and services. This includes not only the direct production costs but also the indirect costs that arise from health impacts and environmental degradation. The correct choice encompasses the idea that full-cost pricing aims to capture a broader range of impacts linked to production processes. This includes health costs, which can arise from pollution or other harmful effects on communities, as well as the loss of ecosystem services, which refers to the benefits that society derives from natural environments, such as clean air and water, pollination of crops, and climate regulation. By incorporating these additional costs, full-cost pricing seeks to promote sustainability by providing a more accurate representation of the true cost of goods and encouraging more responsible consumption and production patterns. In contrast, focusing solely on production costs would ignore the significant externalities that affect society and the environment. Limiting the assessment to only social and cultural impacts or just environmental clean-up costs would also fail to capture the comprehensive economic implications of production activities, thus missing the essence of what full-cost pricing aims to achieve.

9. What is one advantage of using natural gas as an energy source?

A. It emits more CO2 than coal

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C. It emits less CO2 and other pollutants than other fossil fuels

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Natural gas is considered a more environmentally friendly fossil fuel option because it emits less carbon dioxide (CO2) and other pollutants compared to other fossil fuels like coal and oil when burned for energy. This lower emission profile is significant in the context of climate change and air quality. For instance, while burning coal releases a higher amount of CO2 along with sulfur dioxide (which contributes to acid rain) and particulate matter (which can cause health issues), natural gas combustion results in mainly CO2 along with water vapor, producing fewer harmful pollutants overall. Additionally, using natural gas can help power generation transition towards cleaner energy sources, as it can serve as a bridge fuel that supports a shift towards more sustainable options, such as renewables. This aspect of natural gas usage aligns with broader goals of reducing greenhouse gas emissions and mitigating environmental impact. Thus, its relatively cleaner burning properties make it an advantageous choice among fossil fuels.

10. How can companies implement corporate social responsibility (CSR)?

A. By adopting ethical practices

B. By focusing solely on profit maximization

C. By ignoring community engagement

D. By maintaining secrecy in operations

Companies can effectively implement corporate social responsibility (CSR) by adopting ethical practices. This involves integrating social, environmental, and ethical considerations into their business operations and interactions with stakeholders. Ethical practices may include ensuring fair labor conditions, reducing environmental impact, engaging in fair trade, and contributing to community development. By committing to these principles, companies can build trust with consumers, enhance their brand image, and foster loyalty among customers and employees alike. This approach reflects a broader understanding that long-term success is not solely dependent on profit maximization, but also on the company's role in society and its impact on the environment and communities. Building ethical frameworks enables organizations to create sustainable practices that benefit their stakeholders and society at large.