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Answer Key: When Landscapes Push Back: 8th Grade Human-Geography Quiz

Analyze the ethics of geoengineering and resource conflict through case studies of Uzbekistan's Aral Sea and futuristic architectural adaptations in Singapore.

1. Which complex feedback loop best explains the desertification of the Aral Sea basin following Soviet irrigation projects?

Answer: A) Modification led to increased salinity, destroying local fisheries and altering regional microclimates.

Human modification (diverting the Amu Darya and Syr Darya rivers) caused the sea to shrink, which in turn created a feedback loop of toxic salt dust and hotter summers, negatively impacting human health and the economy.

2. True or False: The use of 'Cloud Seeding' by governments to induce rain is an example of human adaptation to natural climate cycles.

Answer: B) False

This is False. Cloud seeding is an example of modification (geoengineering), as humans are actively attempting to alter the atmospheric process rather than simply changing their behavior to fit the existing weather.

3. In the context of urban density, Singapore's 'Supertrees' in the Gardens by the Bay represent a sophisticated form of _____ aimed at mitigating the Urban Heat Island effect.

Answer: B) Environmental modification

Modern urban planning often involves modification. The Supertrees are engineered structures that mimic natural functions (like cooling and solar power) to change the environment for human comfort.

4. What is the primary geographical challenge addressed by the construction of the Great Green Wall across the African Sahel?

Answer: B) Modifying the landscape to halt desertification and soil erosion

The Great Green Wall is a massive modification project designed to restore degraded land and stop the Sahara Desert from expanding southward.

5. True or False: The shift from nomadic pastoralism to sedentary industrial farming is an example of decreasing human dependence on the environment.

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Answer: B) False

False. While industrial farming uses technology, it actually increases dependence on specific environmental factors like finite Phosphorus reserves for fertilizer and massive quantities of freshwater.

6. When a society builds earthquake-resistant skyscrapers, such as Taipei 101, they are demonstrating _____, because they are adjusting human structures to survive the environment without changing the seismic activity itself.

Answer: C) Adaptation

Adaptation involves changing human behavior or technology to fit the environment. Since humans cannot stop earthquakes, they adapt by building more resilient structures.

7. Which of the following describes a 'consequence' of human-environment interaction that is specifically considered a 'Transboundary Externalities'?

Answer: C) Industrial runoff from one country polluting a river that flows through three other nations.

Consequences often extend beyond political borders. When modification in one region (like industrial dumping) affects the environment of another, it is a transboundary consequence.

8. The Quechua people of the Andes developed larger lung capacities over generations to survive at high altitudes. This biological change is a form of _____.

Answer: B) Physiological adaptation

Adaptation isn't just about the clothes we wear; it can also be physiological changes that allow humans to survive in specific, challenging geographic conditions.

9. How does the 'Resource Curse' (or Paradox of Plenty) illustrate the complexity of human dependence on the environment?

Answer: B) Over-reliance on one valuable natural resource can lead to economic instability and conflict.

This demonstrates the 'Dependence' aspect. When a country's economy depends entirely on a single environmental asset (like oil or diamonds), it creates social and economic vulnerabilities.

10. True or False: The use of terrace farming in the Rice Terraces of the Philippine Cordilleras is a method that combines modification of land shape with adaptation to steep terrain.

Answer: A) True

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True. Terracing is a modification (reshaping the earth into steps) that allows for the adaptation of agriculture in an area where flat land is naturally unavailable.