

Name: _____ Date: _____

Answer Key: Unearth the Impact: 10th Grade Human-Environment Analysis

Examine complex geopolitical tensions, resource scarcity, and anthropogenic landscape changes through high-level case studies and systems thinking.

1. The 'Aral Sea Disaster' is a premier example of how state-mandated modifications can lead to unintended feedback loops. What was the primary driver of this environmental collapse?

Answer: A) Diversion of the Amu Darya and Syr Darya rivers for cotton monoculture.

To fuel the Soviet cotton industry, the two main rivers feeding the Aral Sea were diverted, leading to the desiccation of the sea, localized climate change, and toxic dust storms.

2. The 'Resource Curse' (or Paradox of Plenty) suggests that countries with an abundance of natural resources often experience less economic growth and worse development outcomes than countries with fewer natural resources.

Answer: A) True

This geographic and economic theory explains how dependence on a single resource can lead to corruption, currency volatility, and neglect of other economic sectors.

3. In the context of High-Altitude Adaptation, how have populations in the Tibetan Plateau biologically adapted over generations compared to Andean populations?

Answer: B) Through a genetic mutation that allows for more efficient oxygen use without increasing red blood cell count.

Tibetans possess a variation of the EPAS1 gene, which helps them survive at high altitudes without thickening their blood, unlike Andean populations who have different physiological adaptations.

4. The concept of _____ describe the distinct atmosphere of a city that is significantly warmer than its surrounding rural areas due to human activities and modification of the land surface.

Answer: C) Urban Heat Islands

Urban Heat Islands (UHI) occur because materials like asphalt and concrete absorb and re-emit the sun's heat more than natural landscapes.

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5. Cultural Ecology is the study of how human societies adapt to their physical environment through both biological and cultural processes.

Answer: A) True

Cultural ecology, a concept championed by Julian Steward, evaluates how the environment influences the development of specific cultural traits and social structures.

6. Which of the following best evaluates the geopolitical consequence of 'Transboundary Water Conflict' in the Nile River Basin regarding the Grand Ethiopian Renaissance Dam (GERD)?

Answer: C) It creates tension over downstream water security for Egypt vs. upstream energy needs for Ethiopia.

The GERD illustrates the struggle for resource sovereignty; Ethiopia seeks development through hydroelectric power, while Egypt fears a reduction in the water supply it depends on for survival.

7. The practice of _____ involves creating stepped plots on mountain slopes to reduce soil erosion and surface runoff, a modification famously utilized by the Inca Empire.

Answer: B) Terrace Farming

Terracing is a sophisticated modification that allows for agriculture in steep mountainous regions where it would otherwise be impossible due to gravity and erosion.

8. Venkatesh's 'Theory of Centrality' aside, how does 'Environmental Determinism' differ from 'Possibilism' in geographic thought?

Answer: B) Determinism suggests physical geography dictates human success; Possibilism suggests culture and technology allow humans to overcome environment.

Environmental Determinism was often used to justify colonial attitudes, whereas Possibilism acknowledges environmental constraints but highlights human agency and innovation.

9. A prime example of human dependence and subsequent adaptation is the 'Great Smog of London' (1952), which eventually forced the passage of the _____ to regulate air modification.

Answer: B) Clean Air Act of 1956

The deadly smog caused by coal-burning dependence led to one of the first major pieces of environmental legislation aimed at reducing the negative consequences of human-environment interaction.

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10. Transhumance is a form of modification where humans permanently level forests to create grazing land for livestock.

Answer: B) False

Transhumance is actually a form of adaptation; it is the seasonal movement of livestock between mountain and lowland pastures to synchronize with the environment's carrying capacity.