**FINAL EXAM PRACTICE #3: Meteorology, Climate, and Ecology**

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| **1.** | Clay is watching the weather to prepare for a trip to the beach tomorrow. The forecast predicts that a low-pressure system will move in overnight. Which type of weather can Clay most likely expect in the morning?   |
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| **A.** | foggy   |

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| **B.** | sunny   |

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| **C.** | clear and colder   |

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| **D.** | cloudy and rainy   |

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| **2.** | **The diagram illustrates an airflow pattern that occurs near the equator.  Location X is on the equator.**\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\c350628b-33ed-49ea-af5a-0bea8caf823c\I268431_6.jpg**Rising moist air causes the frequent occurrence of which weather condition at Location X?**   |
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| **A.** | high surface pressure   |

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| **B.** | cloudy and rainy   |

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| **C.** | cool and dry   |

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| **D.** | low evaporation rate   |

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| **3.** | Tornadoes can occur throughout the United States. One area where most of the tornadoes occur is known as Tornado Alley.\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\c6b1679c-7e1a-442b-a784-a359ef37f3db\I70367_13.jpgWhich environmental factors most likely impact the formation of tornadoes in this area?   |
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| **A.** | high pressure systems colliding with other high pressure systems   |

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| **B.** | cold dry air and warm dry air moving towards each other   |

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| **C.** | low evaporation rates and windy conditions   |

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| **D.** | cool dry air colliding with warm moist air   |

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| **4.** | The arrows on the map represent the movement of air masses across North America.\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\aa802ad2-1cab-45cf-8e87-073cacb5b0a5\I70096_11.jpgAir mass 1 would most likely bring which weather conditions to a region?   |
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| **A.** | cool and dry   |

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| **B.** | warm and dry   |

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| **C.** | cool and humid   |

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| **D.** | warm and humid   |

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| **5.** | Which statement best explains why the force of a hurricane diminishes as the hurricane moves over land?   |
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| **A.** | A high pressure area develops.   |

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| **B.** | The sea level rises on the coast.   |

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| **C.** | The winds start to spin clockwise.   |

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| **D.** | The supply of warm, moist air decreases.   |

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| **6.** | As a warm moist air mass moving northward collides with a strong cold air mass moving southward, what observations will most likely be made?   |
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| **A.** | Thick fog develops.   |

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| **B.** | Temperatures increase.   |

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| **C.** | Clouds begin to form.   |

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| **D.** | Winds die down.   |

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| **7.** | \\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\f73dc507-d7ba-481e-9c5d-42bfa8c43a0f\059f14d6-558e-4ce9-a350-b7d6a5367409.png  |
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| **A.** | warm front  |

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| **B.** | cold front  |

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| **C.** | occluded front  |

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| **D.** | stationary front  |

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| **8.** | \\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\7a285647-8536-4d8c-b01f-0e14cc42c833\b56d5911-b8d6-4a43-901f-57b41acbe3fc.pngWhich locations are most likely to receive precipitation?  |
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| **A.** | A and B |

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| **B.** | B and C |

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| **C.** | C and D |

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| **D.** | A and D  |

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| **9.** | \\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\8bd5f56b-976b-44c0-afb6-d031b5d56075\e24258a8-aec8-48a2-a2fc-2e744ddd8953.png  |
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| **A.** | Relative humidity was highest on day 1. |

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| **B.** | The greatest amount of water vapor was in the atmosphere on day 2. |

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| **C.** | The base level for cloud formation was highest on day 3. |

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| **D.** | The chance of precipitation was greatest on day 4.  |

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| **10.** | Snowfall is rare at the South Pole because air over the South Pole is usually |
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| **A.** | rising and moist |

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| **B.** | rising and dry |

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| **C.** | sinking and moist |

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| **D.** | sinking and dry  |

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| **11.** | Global warming affects sea levels. Which of these is a likely consequence if the trend of global warming continues in coming decades?   |
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| **A.** | Melting glaciers will cause flooding of coastal towns and cities.   |

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| **B.** | Melting glaciers will cause flash flooding in mountainous regions.   |

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| **C.** | Evaporation will cause the formation of fjords and U-shaped valleys.   |

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| **D.** | Evaporation will cause sea levels to drop enlarging coastal areas.   |

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| **12.** | A student learning about how carbon exists in various forms as it moves to different parts of the carbon cycle reads the following sentence.*Atmospheric carbon is the most important threat to the health of the biosphere.* In which way is carbon a threat to the biosphere?   |
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| **A.** | Carbon dioxide in the atmosphere serves as a carrier for diseases.   |

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| **B.** | Carbon atoms bond with water vapor to create acidic precipitation.   |

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| **C.** | Carbon dioxide gas can effectively trap heat in the atmosphere.   |

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| **D.** | Carbon compounds can cause genetic damage when burned for fuel.  |

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| **13.** | The average temperature of Earth has increased approximately 0.8°C in the last one hundred years. Which of the following do researchers most attribute to this temperature increase?  |
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| **A.** | increased population in third-world countries  |

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| **B.** | increased use of fossil fuels  |

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| **C.** | the solar flares reaching Earth  |

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| **D.** | the lower amounts of carbon dioxide   |

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| **14.** | The average global ocean temperature in 1912 was 15.8°C, and in 2011 this temperature was 16.5°C. Corals are sensitive to the temperature of ocean water. The health of corals is a concern if the ocean temperature continues to rise. Which of these is a likely prediction based on the current trend in ocean temperature data?   |
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| **A.** | speciation of coral reefs   |

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| **B.** | bleaching of coral reefs   |

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| **C.** | accelerated growth of coral reefs   |

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| **D.** | enhanced fish predation on coral reefs   |

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| **15.** | An area is described as having mild temperatures in the summer and being cool and rainy in the winter. On a day in May, the area experienced snow. Which best describes this day in terms of weather and climate?   |
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| **A.** | The weather was different from the normal climate for the area.   |

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| **B.** | The climate was different from the normal weather for the area.   |

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| **C.** | Weather and climate were different from the normal properties for the area.   |

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| **D.** | Climate and weather were changing into a new set of normal properties for the area.   |

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| **16.** | Deforestaton increases the greenhouse effect on Earth because deforestation causes the atmosphere to contain |
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| **A.** | more carbon dioxide, which absorbs infrared radiation |

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| **B.** | less carbon dioxide, which absorbs short-wave radiation |

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| **C.** | more oxygen, which absorbs infrared radiation |

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| **D.** | less oxygen, which absorbs short-wave radiation |

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| **17.** | For weeks after a series of major volcanic eruptions, Earth's surface air temperatures are often |
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| **A.** | warmer because ash and dust decrease atmospheric transparency |

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| **B.** | warmer because ash and dust increase atmospheric transparency |

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| **C.** | cooler because ash and dust decrease atmospheric transparency |

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| **D.** | cooler because ash and dust increase atmospheric transparency |

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| **18.** | During an El Nino event, surface water temperatures increase along the west coast of South America.  Which weather changes are likely to occur in this region?  |
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| **A.** | decreased air temperature and decreased precipitation  |

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| **B.** | decreased air temperature and increased precipitation  |

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| **C.** | increased air temperature and increased precipitation  |

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| **D.** | increased air temperature and decreased precipitation  |

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| **19.** | Changes in the chemical composition of the atmosphere that may produce acid rain are most closely associated with |
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| **A.** | insects that excrete acids |

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| **B.** | runoff from acidic soils |

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| **C.** | emissions from burning coal |

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| **D.** | drilling for oil |

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| **20.** | One environmental problem caused by the use of nuclear power as an energy source is the |
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| **A.** | destruction of the ozone layer |

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| **B.** | disposal of wastes |

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| **C.** | production of acid rain |

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| **D.** | accumulation of carbon dioxide in the atmosphere |

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| **21.** | Look at the list of changes to an ocean ecosystem.

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| 1. extinction of some species of fish2. loss of food supply for predator species3. loss of all species in the ecosystem 4. weakening of the sustainability of the    ecosystem  |

Which of these are the most likely results of overfishing in ocean ecosystems?   |
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| **A.** | 1 only  |

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| **B.** | 1 and 2 only  |

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| **C.** | 1, 2, 3, and 4  |

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| **D.** | 1, 2, and 4 only   |

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| **22.** | Corn is widely being used in the United States to make ethanol for use in automobile fuel. How might the overproduction of corn negatively affect the environment?  |
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| **A.** | decreasing soil fertility  |

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| **B.** | decreasing oil transportation  |

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| **C.** | increasing the greenhouse effect  |

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| **D.** | increasing carbon dioxide emissions  |

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| **23.** | Since the 1900s, the human population has increased in Florida. As a result, much of the fresh water that had previously made its way to the Everglades has been diverted for human use.\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\2ac9b9d9-e0d8-4265-a229-80fa3981e375\I70245_13.jpgWhich would be the most likely effect of decreased flows of fresh water on the ecology of the Everglades?   |
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| **A.** | an increase in the amount of erosion in the Everglades  |

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| **B.** | a decrease in the amount of salt water in the Everglades  |

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| **C.** | a decrease in the populations of native plants and animals  |

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| **D.** | an increase in the reproductive rates of native plants and animals   |

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| **24.** | Nitrogen is a nutrient needed by plants for growth. Nitrogen is naturally cycled into the soil where it is rapidly absorbed by plants. What would a farmer most likely do to replenish nitrogen that was depleted from the soil?  |
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| **A.** | use water that is enhanced with phosphates  |

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| **B.** | add fertilizer to the soil to provide a source of nitrogen  |

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| **C.** | use genetically altered crops that fix their own nitrogen  |

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| **D.** | add bacteria to the soil in order for the crop to grow stronger roots  |

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| **25.** | Vetiver grass is planted by farmers along the borders of corn fields.\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\d881d532-b566-4a84-aea3-e59acc718057\I59839_11.jpgWhich process does the vetiver grass most likely help farmers reduce?   |
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| **A.** | chemical weathering  |

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| **B.** | insect infestation  |

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| **C.** | freezing of crops  |

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| **D.** | water erosion   |

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| **26.** | While on a trip to Peru, Carlos saw that a mountainside had been terraced by the ancient Inca Indians. The Incas had terraced the side of the mountain to grow food.\\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\bc4e7ef8-e5a5-4e47-b9d6-5b6e85941426\I59741_10.jpgWhich other purpose did the terracing of the mountain serve?   |
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| **A.** | It provided a transportation system.  |

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| **B.** | It encouraged wild plant growth.  |

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| **C.** | It helped control erosion.  |

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| **D.** | It prevented flooding.   |

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| **27.** | Which human activity most likely contributes to the solid waste pollution in streams and landfills?  |
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| **A.** | using natural fertilizers on lawns  |

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| **B.** | buying products packaged in disposable containers  |

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| **C.** | combining leaves and grass clippings with paper products to use in composting  |

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| **D.** | recycling glass, paper, and aluminum products   |

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| **28.** | Land subsidence (ground level dropping) is most likely an indication that  |
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| **A.** | sediments are being deposited.  |

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| **B.** | water is being polluted.  |

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| **C.** | rocks are being weathered.  |

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| **D.** | ground water is being depleted.  |

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| **29.** | The human population is increasing every day. How does this increase in population affect the natural resources that maintain humans?  |
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| **A.** | increases the supply of resources   |

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| **B.** | decreases the amount of resources  |

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| **C.** | results in less demand for resources  |

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| **D.** | improves the quality of the resources  |

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| **30.** | \\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\6f18f859-c439-4114-a42f-ae9998f3c04f\48cb8e44-eb3a-47fd-a828-d8759e701b71.png |
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| **A.** | an increase in autotroph populations |

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| **B.** | a decrease in the duck population |

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| **C.** | an increase in the racoon population |

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| **D.** | a decrease in pathogens of carnivorous fish  |

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| **31.** | In order to reduce consumption of nonrenewable resources, humans could  |
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| **A.** | burn coal to heat houses instead of using oil  |

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| **B.** | heat household water with solar radiation  |

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| **C.** | increase industrialization  |

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| **D.** | use a natural-gas grill to barbecue instead of using charcoal  |

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| **32.** | The rapid destruction of tropical rainforests may be harmful because  |
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| **A.** | removing trees will prevent scientists from studying ecological succession  |

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| **B.** | genetic material that may be useful for future medical discoveries will be lost  |

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| **C.** | energy cycling in  the environment will drop  |

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| **D.** | the removal of trees will limit the construction of factories that will pollute the environment  |

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