**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? |
|  | |  |  | | --- | --- | | **A.** | foggy | |
|  | |  |  | | --- | --- | | **B.** | sunny | |
|  | |  |  | | --- | --- | | **C.** | clear and colder | |
|  | |  |  | | --- | --- | | **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?** |
|  | |  |  | | --- | --- | | **A.** | high surface pressure | |
|  | |  |  | | --- | --- | | **B.** | cloudy and rainy | |
|  | |  |  | | --- | --- | | **C.** | cool and dry | |
|  | |  |  | | --- | --- | | **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.jpg  Which environmental factors most likely impact the formation of tornadoes in this area? |
|  | |  |  | | --- | --- | | **A.** | high pressure systems colliding with other high pressure systems | |
|  | |  |  | | --- | --- | | **B.** | cold dry air and warm dry air moving towards each other | |
|  | |  |  | | --- | --- | | **C.** | low evaporation rates and windy conditions | |
|  | |  |  | | --- | --- | | **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.jpg  Air mass 1 would most likely bring which weather conditions to a region? |
|  | |  |  | | --- | --- | | **A.** | cool and dry | |
|  | |  |  | | --- | --- | | **B.** | warm and dry | |
|  | |  |  | | --- | --- | | **C.** | cool and humid | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | A high pressure area develops. | |
|  | |  |  | | --- | --- | | **B.** | The sea level rises on the coast. | |
|  | |  |  | | --- | --- | | **C.** | The winds start to spin clockwise. | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | Thick fog develops. | |
|  | |  |  | | --- | --- | | **B.** | Temperatures increase. | |
|  | |  |  | | --- | --- | | **C.** | Clouds begin to form. | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | warm front | |
|  | |  |  | | --- | --- | | **B.** | cold front | |
|  | |  |  | | --- | --- | | **C.** | occluded front | |
|  | |  |  | | --- | --- | | **D.** | stationary front | |
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| **8.** | \\SNICVPRDFS01\SiteFiles\homebase\files\assess_files\7a285647-8536-4d8c-b01f-0e14cc42c833\b56d5911-b8d6-4a43-901f-57b41acbe3fc.png  Which locations are most likely to receive precipitation? |
|  | |  |  | | --- | --- | | **A.** | A and B | |
|  | |  |  | | --- | --- | | **B.** | B and C | |
|  | |  |  | | --- | --- | | **C.** | C and D | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | Relative humidity was highest on day 1. | |
|  | |  |  | | --- | --- | | **B.** | The greatest amount of water vapor was in the atmosphere on day 2. | |
|  | |  |  | | --- | --- | | **C.** | The base level for cloud formation was highest on day 3. | |
|  | |  |  | | --- | --- | | **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 |
|  | | |  |  | | --- | --- | | **A.** | rising and moist | |
|  | | |  |  | | --- | --- | | **B.** | rising and dry | |
|  | | |  |  | | --- | --- | | **C.** | sinking and moist | |
|  | | |  |  | | --- | --- | | **D.** | sinking and dry | |
| **11.** | Global warming affects sea levels. Which of these is a likely consequence if the trend of global warming continues in coming decades? | |
|  | |  |  | | --- | --- | | **A.** | Melting glaciers will cause flooding of coastal towns and cities. | | |
|  | |  |  | | --- | --- | | **B.** | Melting glaciers will cause flash flooding in mountainous regions. | | |
|  | |  |  | | --- | --- | | **C.** | Evaporation will cause the formation of fjords and U-shaped valleys. | | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | Carbon dioxide in the atmosphere serves as a carrier for diseases. | |
|  | |  |  | | --- | --- | | **B.** | Carbon atoms bond with water vapor to create acidic precipitation. | |
|  | |  |  | | --- | --- | | **C.** | Carbon dioxide gas can effectively trap heat in the atmosphere. | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | increased population in third-world countries | |
|  | |  |  | | --- | --- | | **B.** | increased use of fossil fuels | |
|  | |  |  | | --- | --- | | **C.** | the solar flares reaching Earth | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | speciation of coral reefs | |
|  | |  |  | | --- | --- | | **B.** | bleaching of coral reefs | |
|  | |  |  | | --- | --- | | **C.** | accelerated growth of coral reefs | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | The weather was different from the normal climate for the area. | |
|  | |  |  | | --- | --- | | **B.** | The climate was different from the normal weather for the area. | |
|  | |  |  | | --- | --- | | **C.** | Weather and climate were different from the normal properties for the area. | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | more carbon dioxide, which absorbs infrared radiation | |
|  | |  |  | | --- | --- | | **B.** | less carbon dioxide, which absorbs short-wave radiation | |
|  | |  |  | | --- | --- | | **C.** | more oxygen, which absorbs infrared radiation | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | warmer because ash and dust decrease atmospheric transparency | |
|  | |  |  | | --- | --- | | **B.** | warmer because ash and dust increase atmospheric transparency | |
|  | |  |  | | --- | --- | | **C.** | cooler because ash and dust decrease atmospheric transparency | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | decreased air temperature and decreased precipitation | |
|  | |  |  | | --- | --- | | **B.** | decreased air temperature and increased precipitation | |
|  | |  |  | | --- | --- | | **C.** | increased air temperature and increased precipitation | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | insects that excrete acids | |
|  | |  |  | | --- | --- | | **B.** | runoff from acidic soils | |
|  | |  |  | | --- | --- | | **C.** | emissions from burning coal | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | destruction of the ozone layer | |
|  | |  |  | | --- | --- | | **B.** | disposal of wastes | |
|  | |  |  | | --- | --- | | **C.** | production of acid rain | |
|  | |  |  | | --- | --- | | **D.** | accumulation of carbon dioxide in the atmosphere | |

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| **21.** | Look at the list of changes to an ocean ecosystem.   |  | | --- | | 1. extinction of some species of fish 2. loss of food supply for predator species 3. 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? |
|  | |  |  | | --- | --- | | **A.** | 1 only | |
|  | |  |  | | --- | --- | | **B.** | 1 and 2 only | |
|  | |  |  | | --- | --- | | **C.** | 1, 2, 3, and 4 | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | decreasing soil fertility | |
|  | |  |  | | --- | --- | | **B.** | decreasing oil transportation | |
|  | |  |  | | --- | --- | | **C.** | increasing the greenhouse effect | |
|  | |  |  | | --- | --- | | **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.jpg  Which would be the most likely effect of decreased flows of fresh water on the ecology of the Everglades? |
|  | |  |  | | --- | --- | | **A.** | an increase in the amount of erosion in the Everglades | |
|  | |  |  | | --- | --- | | **B.** | a decrease in the amount of salt water in the Everglades | |
|  | |  |  | | --- | --- | | **C.** | a decrease in the populations of native plants and animals | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | use water that is enhanced with phosphates | |
|  | |  |  | | --- | --- | | **B.** | add fertilizer to the soil to provide a source of nitrogen | |
|  | |  |  | | --- | --- | | **C.** | use genetically altered crops that fix their own nitrogen | |
|  | |  |  | | --- | --- | | **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.jpg  Which process does the vetiver grass most likely help farmers reduce? |
|  | |  |  | | --- | --- | | **A.** | chemical weathering | |
|  | |  |  | | --- | --- | | **B.** | insect infestation | |
|  | |  |  | | --- | --- | | **C.** | freezing of crops | |
|  | |  |  | | --- | --- | | **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.jpg  Which other purpose did the terracing of the mountain serve? |
|  | |  |  | | --- | --- | | **A.** | It provided a transportation system. | |
|  | |  |  | | --- | --- | | **B.** | It encouraged wild plant growth. | |
|  | |  |  | | --- | --- | | **C.** | It helped control erosion. | |
|  | |  |  | | --- | --- | | **D.** | It prevented flooding. | |
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| **27.** | Which human activity most likely contributes to the solid waste pollution in streams and landfills? |
|  | |  |  | | --- | --- | | **A.** | using natural fertilizers on lawns | |
|  | |  |  | | --- | --- | | **B.** | buying products packaged in disposable containers | |
|  | |  |  | | --- | --- | | **C.** | combining leaves and grass clippings with paper products to use in composting | |
|  | |  |  | | --- | --- | | **D.** | recycling glass, paper, and aluminum products | |
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| **28.** | Land subsidence (ground level dropping) is most likely an indication that |
|  | |  |  | | --- | --- | | **A.** | sediments are being deposited. | |
|  | |  |  | | --- | --- | | **B.** | water is being polluted. | |
|  | |  |  | | --- | --- | | **C.** | rocks are being weathered. | |
|  | |  |  | | --- | --- | | **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? |
|  | |  |  | | --- | --- | | **A.** | increases the supply of resources | |
|  | |  |  | | --- | --- | | **B.** | decreases the amount of resources | |
|  | |  |  | | --- | --- | | **C.** | results in less demand for resources | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | an increase in autotroph populations | |
|  | |  |  | | --- | --- | | **B.** | a decrease in the duck population | |
|  | |  |  | | --- | --- | | **C.** | an increase in the racoon population | |
|  | |  |  | | --- | --- | | **D.** | a decrease in pathogens of carnivorous fish | |
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| **31.** | In order to reduce consumption of nonrenewable resources, humans could |
|  | |  |  | | --- | --- | | **A.** | burn coal to heat houses instead of using oil | |
|  | |  |  | | --- | --- | | **B.** | heat household water with solar radiation | |
|  | |  |  | | --- | --- | | **C.** | increase industrialization | |
|  | |  |  | | --- | --- | | **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 |
|  | |  |  | | --- | --- | | **A.** | removing trees will prevent scientists from studying ecological succession | |
|  | |  |  | | --- | --- | | **B.** | genetic material that may be useful for future medical discoveries will be lost | |
|  | |  |  | | --- | --- | | **C.** | energy cycling in  the environment will drop | |
|  | |  |  | | --- | --- | | **D.** | the removal of trees will limit the construction of factories that will pollute the environment | |