Answer Key

Directed Reading A

SECTION: CHARACTERISTICS OF THE ATMOSPHERE

1. A
2. C
3. A
4. C
5. B
6. C
7. air pressure
8. Answers may vary. Sample answer: As you move farther from the Earth's surface, there are fewer gas molecules above. As altitude increases, air pressure decreases.
9. Answers may vary. Sample answer: Some parts of the atmosphere are warmer because they contain a high percentage of gases that absorb solar energy. Parts of the atmosphere that are cooler contain less of these gases.
10. B
11. C
12. A
13. D
14. The atmosphere is divided into four layers based on temperature changes.
15. Answers may vary. Sample answer: Temperature rises as altitude increases because ozone in the stratosphere absorbs ultraviolet radiation from the sun, which warms the air.
16. ions
17. auroras

SECTION: ATMOSPHERIC HEATING

1. C
2. D
3. B
4. C
5. A
6. D
7. C
8. B
9. Answers may vary. Sample answer: Atmospheric gases, such as water vapor and carbon dioxide, absorb thermal energy and radiate it back to earth. The gases function like the glass walls and roof of a greenhouse, allowing solar energy to enter and preventing thermal energy from escaping.
10. radiation balance
11. global warming
12. Greenhouse gases are gases that absorb thermal energy in the atmosphere.
13. Answers may vary. Sample answer: the burning of fossil fuels and deforestation

SECTION: GLOBAL WINDS AND LOCAL WINDS

1. C
2. B
3. C
4. B
5. D
6. A
7. convection cells
8. pressure belts
9. Coriolis effect
10. C
11. D
12. A
13. B
14. E
15. jet stream
16. A
17. Answers may vary. Sample answer: Local geographic features, such as a shoreline or mountain, can produce temperature differences that cause local winds.

SECTION: AIR POLLUTION

1. air pollution
2. volcanic ash
3. Answers may vary. Sample answer: When primary pollutants react with other primary pollutants or with naturally occurring substances, secondary pollutants form.
4. Answers may vary. Sample answer: ozone, smog
5. Answers may vary. Sample answer: Ozone can damage the lungs.
6. Smog forms when sunlight reacts with ozone and vehicle exhaust.

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