

Directions: For each of the following questions, decide which of the choices is best and fill in the corresponding space on the answer document.

9ERT012

1. Most of the heat released by Earth is
- A. reflected back into space.
 - B. used by plants for photosynthesis.
 - C. reflected by the moon.
 - D. absorbed by the atmosphere.

9ERT181

2. An increase in which gas would produce the greatest greenhouse warming effect on Earth's atmosphere?
- A. hydrogen
 - B. nitrogen
 - C. oxygen
 - D. carbon dioxide

9ERT070

3. Which list of gases is responsible for the greenhouse effect?
- A. ozone (O_3), oxygen (O_2), and water vapor (H_2O)
 - B. nitrogen (N_2), carbon dioxide (CO_2), oxygen (O_2), and water vapor (H_2O)
 - C. octane (C_8H_{18}), ethylene (C_2H_4), and methane (CH_4)
 - D. carbon dioxide (CO_2), methane (CH_4), chlorofluorocarbons (CFC), and nitrous oxide (NO)

9ERT074

4. The daily and annual temperature ranges are greater over continents than over oceans. This is because
- A. water warms up and cools off at a different rate than land.
 - B. there is a larger mass of land and a smaller mass of water.
 - C. the land is covered by plants that absorb energy during photosynthesis.
 - D. the ocean absorbs carbon dioxide, which absorbs solar radiation.

9ERT292

5. As an air mass sinks in the troposphere, its temperature
- A. increases.
 - B. decreases.
 - C. decreases, then increases.
 - D. increases, then decreases.

9ERT112

6. Convection currents in Earth's atmosphere
- A. cause global warming.
 - B. increase temperatures at the equator.
 - C. decrease temperatures near the poles.
 - D. move heat from the equator to the poles.

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9ERT244

7. Differential heating of the Earth causes
- A. photosynthesis.
 - B. convection currents.
 - C. respiration.
 - D. global warming.

9ERT293

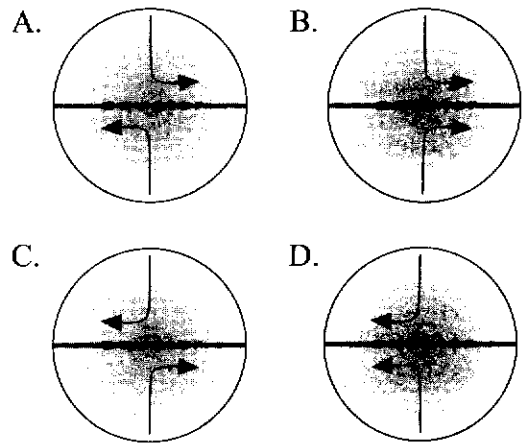
8. Which statement explains the differential heating of Earth?
- A. Land absorbs heat energy faster and releases it more slowly than water.
 - B. Land absorbs heat energy more slowly and releases it faster than water.
 - C. Land absorbs and releases heat energy faster than water.
 - D. Land absorbs and releases heat energy more slowly than water.

9ERT073

9. An air mass sinks because it is
- A. cool and less dense.
 - B. cool and more dense.
 - C. warm and more dense.
 - D. warm and less dense.

9ERT329

10. Which is a correct example of the Coriolis Effect?



9ERT232

11. Currents in the northern Pacific Ocean are different than those in the southern Pacific Ocean because they
- A. are evenly heated.
 - B. rotate in opposite directions.
 - C. have different salinity.
 - D. move different water masses.

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9ERT198

12. The Coriolis Effect is responsible for which atmospheric phenomenon?

- A. trade winds
- B. jet stream
- C. monsoons
- D. hurricanes

9ERT019

13. Winds do not blow directly from areas of high pressure to areas of low pressure in the atmosphere because

- A. there are weather fronts that prevent a direct path.
- B. high pressure areas are less dense than low pressure areas.
- C. the Coriolis Effect deflects the winds from a straight path.
- D. low pressure areas are usually far from high pressure areas.

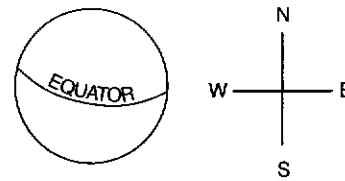
9ERT308

14. In the northern hemisphere, winds that blow from the north towards the south are deflected toward the

- A. north.
- B. south.
- C. east.
- D. west.

9ERT231

15.



Earth's rotation about its axis causes winds blowing towards the equator to turn to the _____.

- A. north
- B. south
- C. west
- D. east

9ERT078

16. Which forces cause horizontal and vertical ocean currents?

- A. hemispheric differences in the rotation of the Earth
- B. temperature and salinity variations of ocean water
- C. the interaction of the moon's gravity with the large mass of ocean water
- D. strong winds blowing near the ocean surface

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9ERT117

17. Upwelling of ocean waters usually occurs
- A. along the eastern edges of continents.
 - B. along the western edges of continents.
 - C. in the northern hemisphere.
 - D. in the southern hemisphere.

9ERT014

18. Fish A lives in the ocean at depths less than 500 feet. Fish B also lives in the ocean, but is found only at depths greater than 6000 feet. What best explains the differences between these two fishes?
- A. Fish A can only tolerate warm, high pressure environments, and Fish B can only tolerate cold, low pressure environments.
 - B. Fish A can only tolerate cold, high pressure environments, and Fish B can only tolerate warm, low pressure environments.
 - C. Fish A can only tolerate cold, low pressure environments, and Fish B can only tolerate warm, high pressure environments.
 - D. Fish A can only tolerate warm, low pressure environments, and Fish B can only tolerate cold, high pressure environments.

9ERT247

19. Why are temperatures near the equator warmer than temperatures near the poles?
- A. Areas near the equator receive more heat from the Earth's core.
 - B. Areas near the poles have fewer clouds in the atmosphere.
 - C. Sunlight hits the area near the equator at a more direct angle.
 - D. Sunlight hits the area near the poles for fewer hours in the summer.

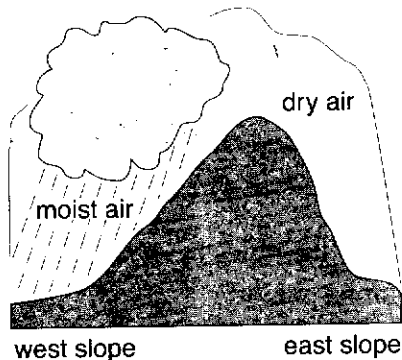
9ERT022

20. Coastal areas tend to be cooler in the summer than nearby inland areas because coastal areas
- A. receive much less sun than inland areas.
 - B. receive more rain than inland areas.
 - C. absorb less heat than inland areas.
 - D. are cooled by winds from the nearby ocean.

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9ERT013

21.



The western side of the Sierra Nevada Mountains receives more rain than the dry, eastern side. This occurs because

- A. western slopes receive more fog from the ocean.
- B. on the eastern slope, as air rises, it gets warmer and can hold more water.
- C. on the western slope, as air rises, it cools and condenses.
- D. on the eastern slopes water evaporates more quickly.

9ERT253

22. The warm Gulf Stream ocean current just off of the East Coast of the United States causes weather in the East Coast to be

- A. dry and warm.
- B. wet and warm.
- C. dry and cold.
- D. wet and cold.

9ERT081

23. On the average, temperatures on Earth's surface drop about 1°C for every

- A. 160 meters change of latitude.
- B. 10° change in longitude.
- C. 5 m.p.h. change in wind speed.
- D. 100 meter change in elevation.

9ERT330

24. A desert climate is found on the east side of a mountain range because

- A. the Sun rises in the east.
- B. the Sun shines on eastern slopes more.
- C. westward winds can carry only a little moisture over the mountains.
- D. westward winds can carry a lot of moisture over the mountains.

9ERT082

25. Large annual temperature ranges are characteristic of

- A. ocean areas with marine climates.
- B. inland areas with continental climates.
- C. coastal areas near cold ocean currents.
- D. populated areas near mountain tops.

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9ERT256

26. Two coastal cities are at the same latitude. City A has an average annual temperature that is 11°C lower than City B. This is most likely because
- A. City A receives a cold ocean current.
 - B. City B receives a cold ocean current.
 - C. City A is at a higher elevation.
 - D. City B is at a higher elevation.

9ERT328

27. Which gas composes the greatest percentage of the atmosphere?
- A. carbon dioxide (CO_2)
 - B. water vapor (H_2O)
 - C. oxygen (O_2)
 - D. nitrogen (N_2)

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28. Which layer of Earth's atmosphere has the lowest density?
- A. thermosphere
 - B. mesosphere
 - C. troposphere
 - D. stratosphere

9ERT239

29. Strong, steady winds and fairly constant weather conditions are characteristics of the
- A. mesosphere.
 - B. stratosphere.
 - C. thermosphere.
 - D. troposphere.

9ERT241

30. What is the order of the layers of the atmosphere from closest to the Earth to the farthest?
- A. mesosphere, stratosphere, troposphere, thermosphere
 - B. stratosphere, mesosphere, thermosphere, troposphere
 - C. thermosphere, troposphere, stratosphere, mesosphere
 - D. troposphere, stratosphere, mesosphere, thermosphere

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9ERT243

31. In which two layers of the atmosphere does the temperature increase as altitude increases?

- A. stratosphere and thermosphere
- B. troposphere and mesosphere
- C. stratosphere and mesosphere
- D. troposphere and thermosphere

9ERT094

32. The two main gases in the Earth's atmosphere are

- A. nitrogen (N_2) and argon (Ar).
- B. oxygen (O_2) and carbon dioxide (CO_2).
- C. nitrogen (N_2) and oxygen (O_2).
- D. oxygen (O_2) and helium (He).

9ERT096

33. What layer of Earth's atmosphere is composed of gas particles ionized by ultraviolet rays and x-rays from the Sun?

- A. stratosphere
- B. ionosphere
- C. troposphere
- D. ozone layer

9ERT307

34. Which layer of the Earth's atmosphere contains the greatest amount of ozone?

- A. mesosphere
- B. stratosphere
- C. thermosphere
- D. troposphere

9ERT098

35. The Earth's ozone layer absorbs

- A. chlorofluorocarbons (CFCs).
- B. ultraviolet (UV) radiation.
- C. solar x-rays.
- D. excess carbon dioxide (CO_2).

9ERT238

36. _____ is/are the primary source of ozone depletion in Earth's atmosphere.

- A. Carbon dioxide (CO_2)
- B. Chlorofluorocarbons (CFCs)
- C. Water vapor (H_2O)
- D. Carbon monoxide (CO)

End of test ■