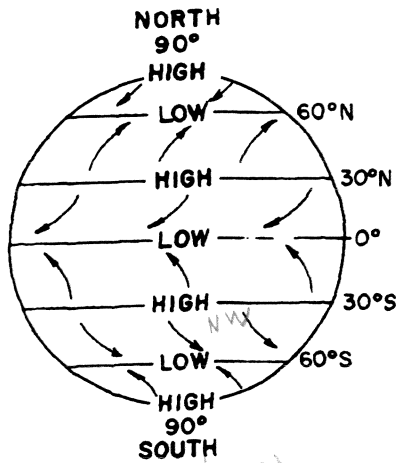
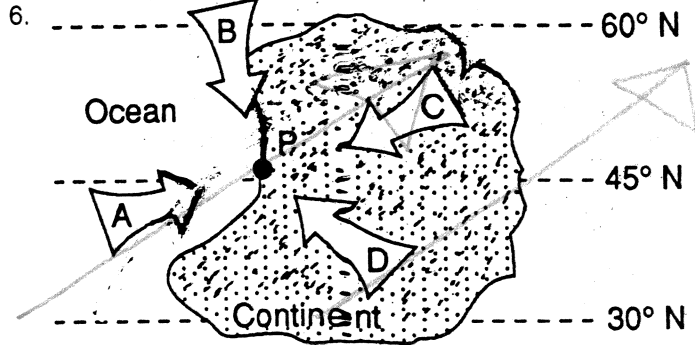


Key

- Winds blow from regions of
 - high air temperature to regions of low air temperature
 - high air pressure to regions of low air pressure
 - high precipitation to regions of low precipitation
 - convergence to regions of divergence
- The diagram below shows the Earth's high and low air pressure belts and direction of prevailing winds for a particular time of the year. The winds do *not* appear to blow in a straight line from the high-pressure belts to the low-pressure belts. Which statement best explains this observation?



- Wind direction is modified by the Earth's rotation.
 - Wind direction is modified by land forms.
 - Wind direction is modified by water areas.
 - Wind direction is modified by the Sun's motion.
- Wind moves from regions of
 - high temperature toward regions of low temperature
 - high pressure toward regions of low pressure
 - high precipitation toward regions of low precipitation
 - high humidity toward regions of low humidity
- The Earth's planetary winds are deflected as a result of the Earth's
 - revolution around the Sun
 - seasonal changes
 - rotation on its axis
 - tilted axis
- A city located near the center of a large continent has colder winters and warmer summers than a city at the same elevation and latitude located on the continent's coast. Which statement best explains the difference between the cities' climates?
 - Wind speeds are greater over land than over oceans.
 - Air masses originate only over land.
 - Land has a lower specific heat than water.
 - Water changes temperature more rapidly than land.



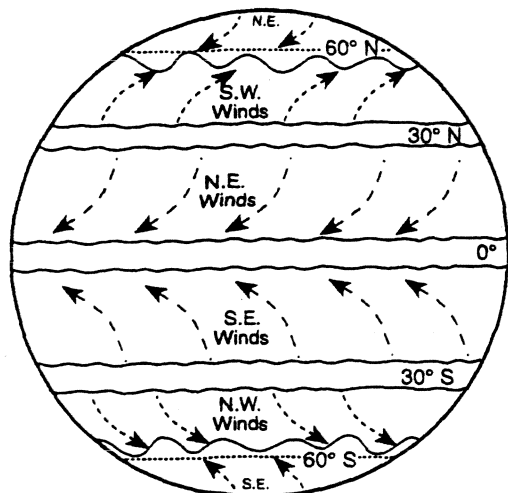
- The map above shows an imaginary continent in the Earth's planetary wind belt between 30° and 60° North latitude. Location P is on the western edge of the continent. Location P has mild winters with much precipitation. Which arrow indicates the direction of the prevailing winds at this location?
- A
 - B
 - C
 - D
 - A high air-pressure, dry-climate belt is located at which Earth latitude?
 - 0°
 - 15° N
 - 30° N
 - 60° N
 - The prevailing southwest erlies wind belt causes most low-pressure weather systems to travel across the United States from the
 - southwest toward the northeast
 - northwest toward the southeast
 - northeast toward the southwest
 - southeast toward the northwest
 - According to the *Earth Science Reference Tables*, the prevailing winds at 45° S latitude are from the
 - southwest
 - northwest
 - southeast
 - northeast
 - Which planetary wind pattern is present in many areas of little rainfall? DRY
 - Winds converge and air sinks.
 - Winds converge and air rises.
 - Winds diverge and air sinks.
 - Winds diverge and air rises.
 - At which latitudes do currents of dry, sinking air cause the dry conditions of Earth's major deserts?
 - 0° and 30° N
 - 60° N and 60° S
 - 30° N and 30° S
 - 60° S and 90° S
 - The planetary wind and moisture belts indicate that large amounts of rainfall occur at Earth's Equator because air is
 - converging and rising
 - converging and sinking
 - diverging and rising
 - diverging and sinking



Key

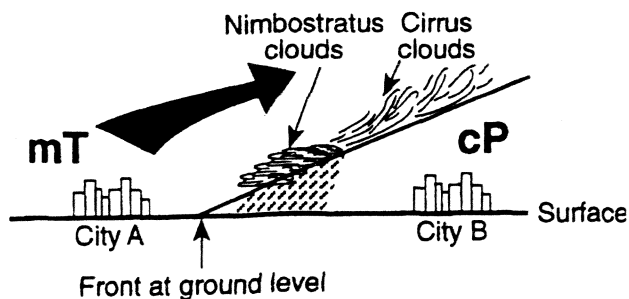
Wind Belts and Clouds

13. What is the general pattern of air movement on March 21 at Earth's Equator (0°)?
- 1) upward, due to low temperature and high pressure
 - 2) upward, due to high temperature and low pressure
 - 3) downward, due to low temperature and high pressure
 - 4) downward, due to high temperature and low pressure
14. The planetary winds on Earth are indicated by the curving arrows in the diagram below.



The curved paths of the planetary winds are a result of

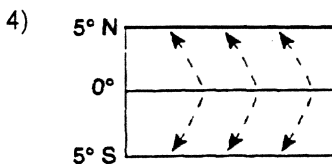
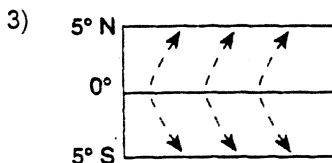
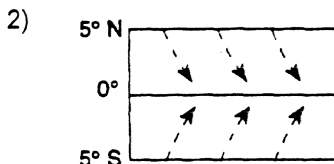
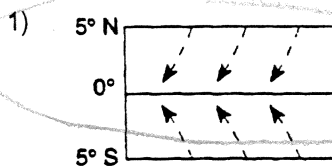
- 1) changes in humidity
 - 2) changes in temperature
 - 3) Earth's rotation on its axis
 - 4) Earth's gravitational force
15. Base your answer to the following question on the diagram below, which shows the frontal boundary between mT and cP air masses.



Why do clouds and precipitation usually occur along the frontal surface?

- 1) The warm air rises, expands, and cools.
- 2) The warm air sinks, expands, and warms.
- 3) The cool air rises, compresses, and cools.
- 4) The cool air sinks, compresses, and warms.

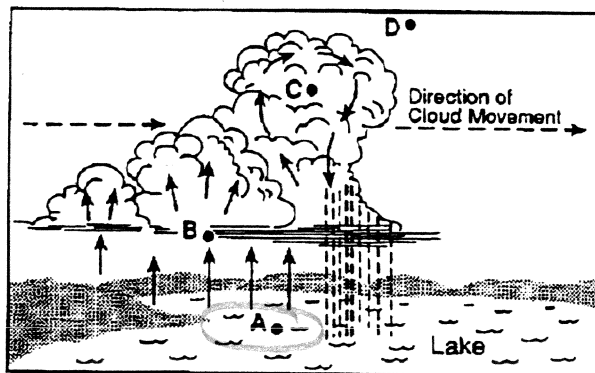
16. Which map correctly shows the general pattern of flow of prevailing surface winds near the Equator on March 21?



17. As a parcel of air rises, its temperature will

- 1) decrease due to expansion
- 2) decrease due to compression
- 3) increase due to expansion
- 4) increase due to compression

18. Base your answer to the following question on the Earth Science Reference Tables and the diagram below. The diagram shows air movements associated with cumulus cloud formation over a lake during a summer day. A, B, C, and D are reference points.



Air rises from point A toward point B and forms clouds mainly because the air at point A has a

- 1) cool temperature and low water-vapor content
- 2) cool temperature and high water-vapor content
- 3) warm temperature and low water-vapor content
- 4) warm temperature and high water-vapor content