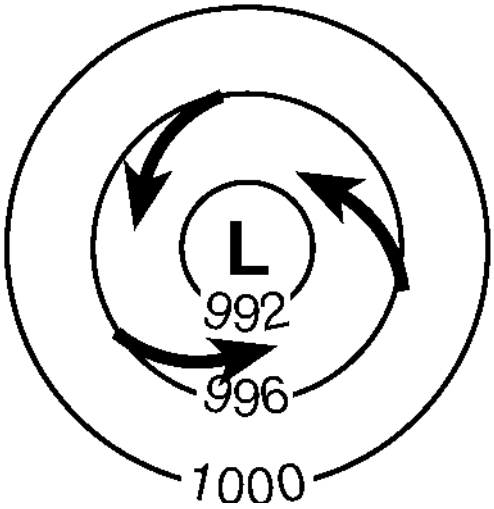
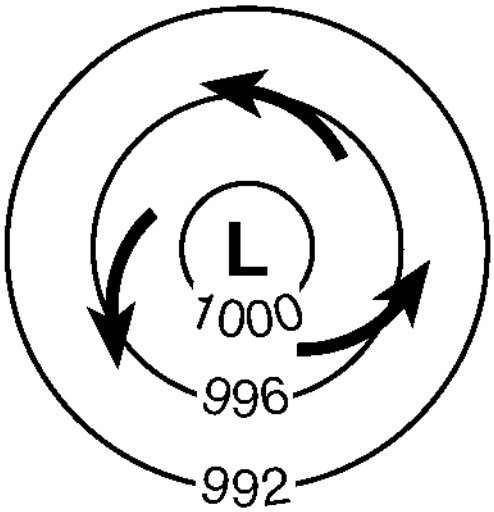
**NAME** _____

1. Which map view best represents the pattern of isobar values, in millibars, and the pattern of wind flow, shown by arrows, at Earth's surface surrounding a Northern Hemisphere low-pressure center?

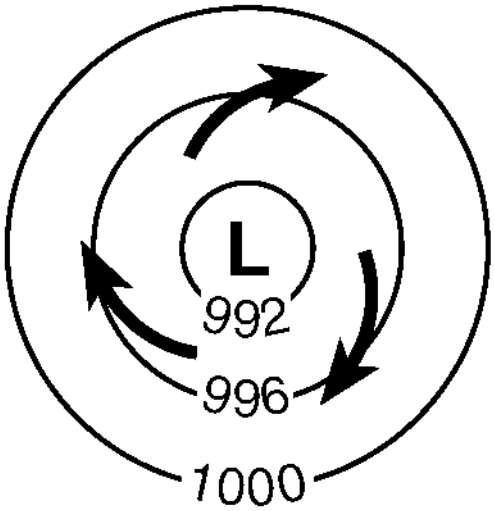
(1)



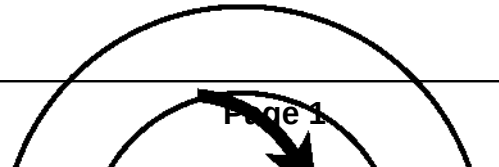

(2)




(3)



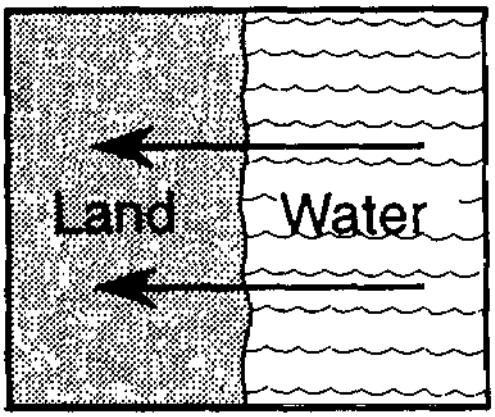

(4)



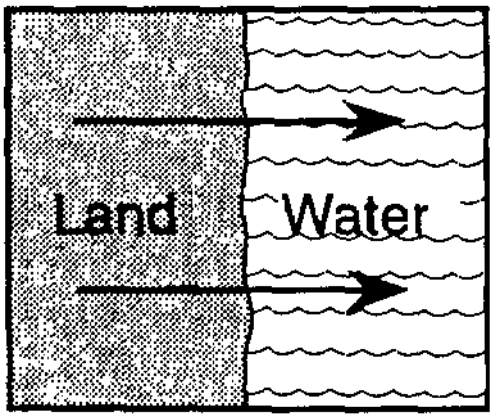
2. What is the primary cause of winds?
   (1) humidity differences
   (2) air pressure differences
   (3) the revolution of Earth
   (4) the rotation of Earth

3. Adjacent water and land surfaces have the same temperature at sunrise on a clear, calm day. A surface wind develops after the water and land are heated by the Sun for a few hours. On which map do the arrows best represent the direction of this wind?

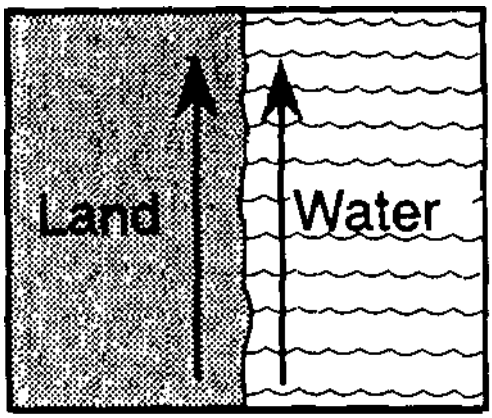
(1)



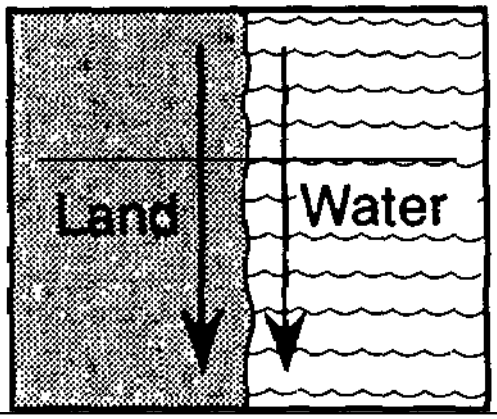

(2)




(3)




(4)

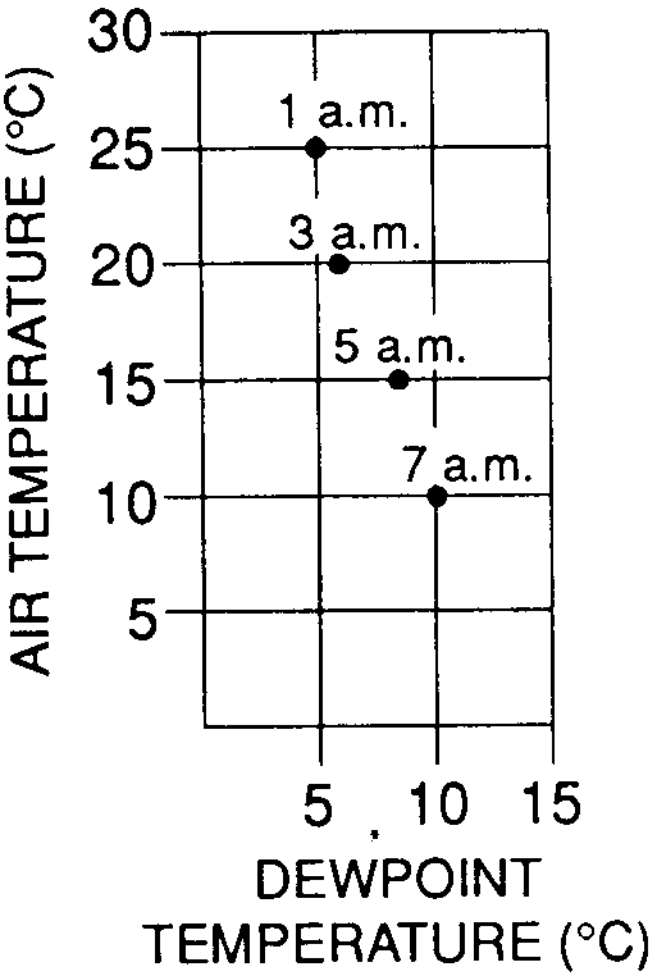


4. In the Northern Hemisphere, in which direction does surface wind circulate in a high-pressure air mass?
   (1) clockwise and toward the center
   (2) clockwise and away from the center
   (3) counterclockwise and toward the center
   (4) counterclockwise and away from the center

5. The air over the Equator generally rises because the air is
   (1) dry and cool with low density
   (2) moist and hot with low density
   (3) moist and cool with high density
   (4) dry and hot with high density

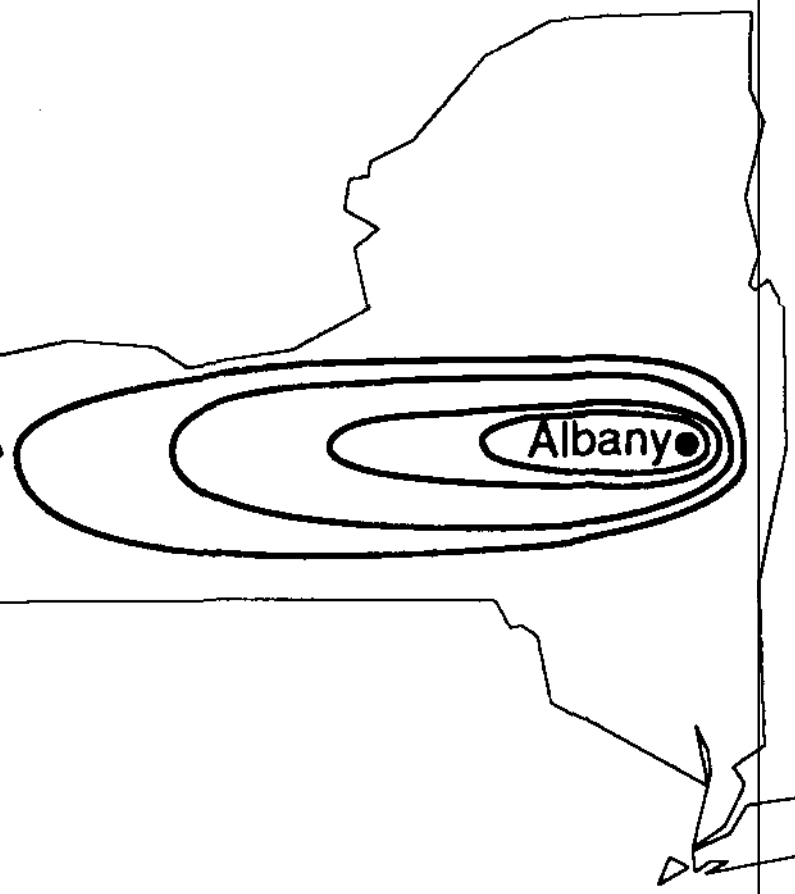
6. The air outside a classroom has a dry-bulb temperature of 10ºC and a wet-bulb temperature of 4ºC. What is the relative humidity of this air?
   (1) 1%
   (2) 14%
   (3) 33%
   (4) 54%

7. The graph below shows the air temperature and dewpoint temperature at one location at four different times during one morning.




At what time was the chance of precipitation the greatest?
   (1) 1 a.m.
   (2) 5 a.m.
   (3) 3 a.m.
   (4) 7 a.m.

8. The weather map below shows closely spaced isobars in the region of Albany, New York.




At the time that the weather data were collected, Albany was most probably experiencing

(1) a high wind velocity
(2) a high temperature
(3) the passage of a dry air mass
(4) the passage of a warm air mass

9. An air pressure of 1023 millibars is equal to how many inches of mercury?

(1) 30.10 (3) 30.19
(2) 30.15 (4) 30.21

10. An air pressure of 29.65 inches of mercury is equal to

(1) 984.0 mb (3) 1001.0 mb
(2) 999.0 mb (4) 1004.0 mb

11. As wind velocity decreases, the distance between isobars on a weather map will

(1) decrease (3) remain the same
(2) increase

12. Rapidly falling barometric pressure readings usually indicate

(1) clearing conditions
(2) approaching storm conditions
(3) decreasing humidity
(4) decreasing temperatures

13. By which process are clouds, dew, and fog formed?

(1) condensation (3) precipitation
(2) evaporation (4) melting

14. In order for clouds to form, cooling air must be

(1) saturated and have no condensation nuclei
(2) saturated and have condensation nuclei
(3) unsaturated and have no condensation nuclei
(4) unsaturated and have condensation nuclei

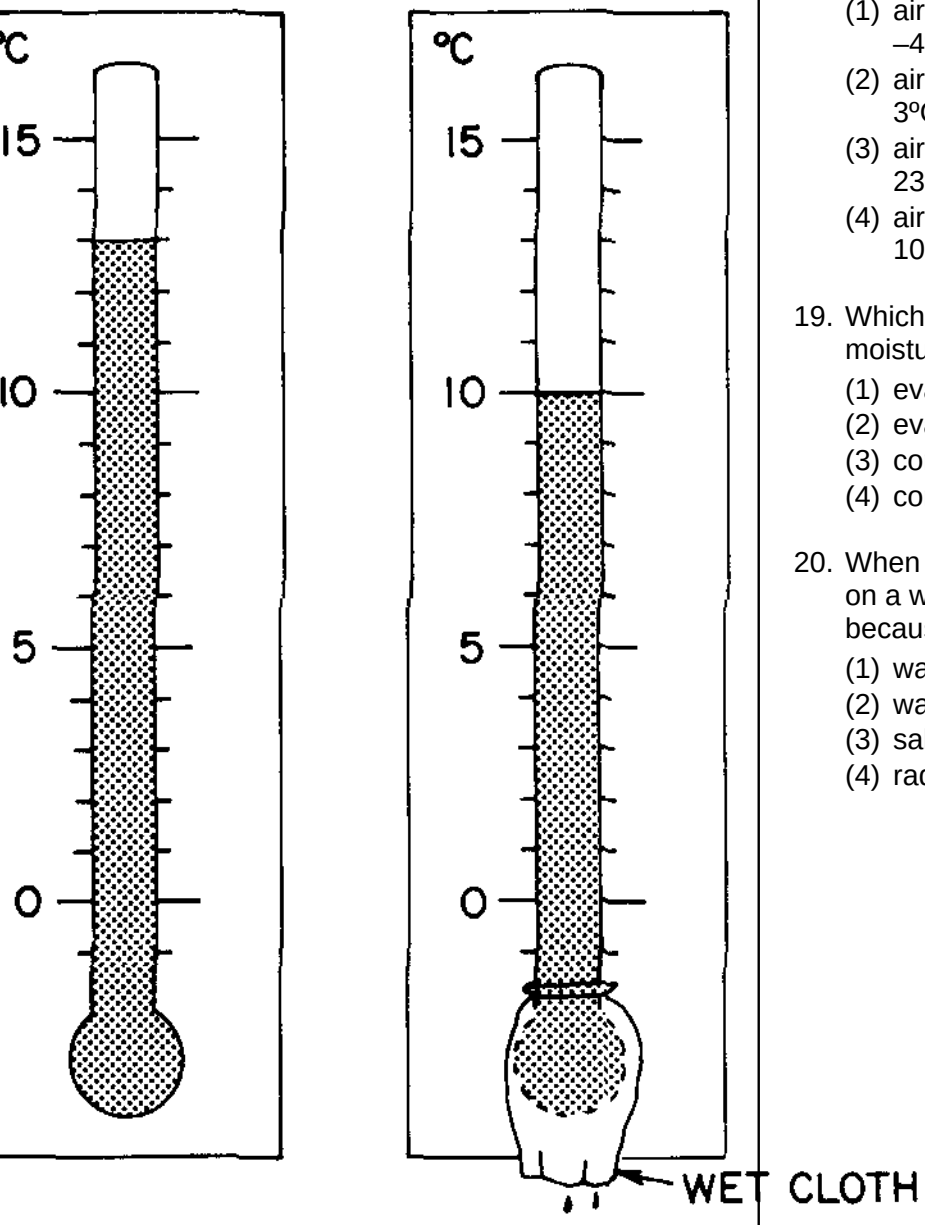
15. Clouds usually form when

(1) air temperature reaches the dewpoint
(2) evaporation has warmed the surrounding air
(3) relative humidity is 0%
(4) condensation nuclei have been removed from the air

16. Winds blow from regions of

(1) high air temperature to regions of low air temperature
(2) high air pressure to regions of low air pressure
(3) high precipitation to regions of low precipitation
(4) convergence to regions of divergence

17. The two thermometers below show the dry-bulb and wet-bulb temperatures of the air.




What is the approximate dewpoint temperature of the air?

(1) –25°C
(2) 7°C
(3) 3°C
(4) 4°C

18. Which combination of air temperature and dewpoint temperature would most likely occur in humid air?

(1) air temperature 10°C, dewpoint temperature –4°C
(2) air temperature 15°C, dewpoint temperature 3°C
(3) air temperature 24°C, dewpoint temperature 23°C
(4) air temperature 26°C, dewpoint temperature 10°C

19. Which processes provide the greatest amount of moisture to the atmosphere?

(1) evaporation and transpiration
(2) evaporation and infiltration
(3) condensation and transpiration
(4) condensation and infiltration

20. When a person leaves the ocean after swimming on a windy day, the person usually feels cold because

(1) water evaporates from the skin
(2) water condenses on the skin
(3) salt is absorbed through the skin
(4) radiation is absorbed through the skin