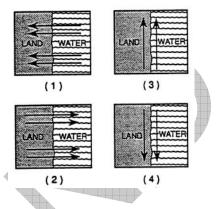
Atmospheric Variables Review #1: Air Pressure and Wind

- As cool, dry air moves into a region, barometric pressure readings in the region will generally

 decrease
 increase
 remain the same
- Adjacent water and land masses are of equal temperature at sunrise. They are heated by the morning Sun on a clear, calm day. After a few hours, a surface wind develops. Which diagram best represents this wind's direction?



- 3. Which conditions are most likely to develop over a land area adjacent to the ocean on a hot, sunny afternoon?
 - (1) lower temperatures, with winds blowing in from the ocean
 - (2) lower temperatures, with winds blowing out toward the ocean
 - (3) higher temperatures, with winds blowing in from the ocean
 - (4) higher temperatures, with winds blowing out toward the ocean
- 4. An atmospheric pressure of 978.0 millibars is equal to
 - (1) 28.76 inches of mercury
 - (2) 28.88 inches of mercury

- (3) 28.92 inches of mercury
- (4) 29.00 inches of mercury
- 5. An air pressure of 29.23 inches of mercury is equal to
 - (1) 988.0 mb (2) 989.0 mb

- (3) 990.0 mb
- (4) 991.0 mb

(4)

- 6. If atmospheric pressure measurements were taken at regular intervals from sea level to the stratopause, the measurements would most likely show that the pressure
 - (1) decreases, only
 - (2) increases, only

- (3) remains the same
- 7. Which diagram below indicates the air circulation around a Northern Hemisphere low pressure center?



decreases, then increases



- 8. The curved path of planetary winds are caused by the Earth's
 - (1) rotation
 - (2) revolution

- magnetic field (3)
- (4) gravity

Base your answers to **questions 9 -10** on the diagram to the right. The diagram represents a coastal region with a wind direction as indicated

- 9. Which best explains the direction of the wind?
 - (1) the land is cooling during a clear night
 - (2) more water vapor exists in the air over the ocean
 - (3) low pressure exists over the land and high pressure over the ocean
 - (4) warm currents exist in the ocean
- 10. The wind indicated could best be named a
 - (1) mountain breeze
 - (2) land breeze
- 11. The map to the right shows a low pressure system located over an area in the south-central part of the United States.

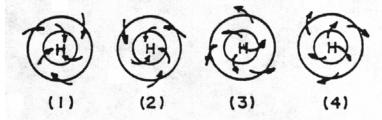
In the next few days, because of the prevailing winds, the air mass will probably move toward the

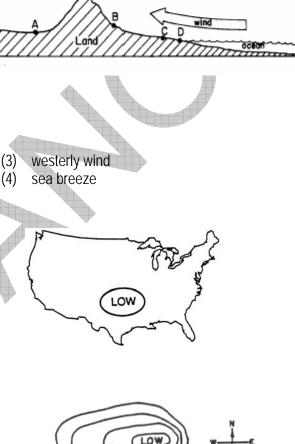
(1) southeast (3) southwest northwest

(4)

- (2) northeast
- 12. The diagram below shows the isolines of air pressure around a low-pressure center. On which side of the low pressure center will the wind speed be the slowest?
 - (1) north (3) east (2) south (4) west
- 13. Which factor is most directly related to wind velocity?
 - (1) dewpoint
 - (2) relative humidity

- (3) cloud type
- (4) pressure gradient
- 14. Which diagram best represents the air circulation as seen from above in a high pressure center (anticyclone) in the Northern Hemisphere?





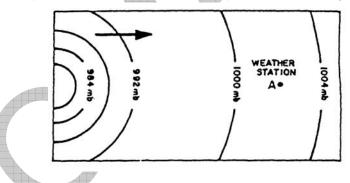
- 15. On a July afternoon in New York State, the barometric pressure is 29.85 inches and falling. This reading most likely indicates
 - (1) an approaching storm
 - (2) rapidly clearing skies

- (3) continuing fair weather
- (4) gradually improving conditions

- 16. Wind is part of heat flow by
 - (1) radiation
 - (2) conduction

- (3) convection
- (4) reflection
- 17. At which latitude are prevailing southeast winds most likely found?
 - (1) 15°S
 - (2) 45°S

- (3) 15°N(4) 45°N
- 18. Which of the following statements best describes the planetary wind patterns at the Equator?
 - (1) Winds converge from higher latitudes.
 - (2) Winds diverge from the Equator.
 - (3) Winds sink from higher altitudes.
 - (4) Winds flow as high altitude jet streams.
- 19. The diagram below represents weather station A in the path of a weather system.



Which of the following statements is true of the weather system approaching the weather station?

- (1) a low pressure system is approaching from the east
- (2) a high pressure system is approaching from the west
- (3) an anticyclone is approaching from the west
- (4) a low pressure system is approaching from the west
- 20. Two weather stations are located near each other. The air pressure at each station is changing so that the difference between the pressures is increasing. The wind speed between these two locations will probably
 - (1) decrease (2) increase (3) remain the same
- 21. Which weather instrument is used to measure wind speed?
 - (1) anemometer(3) psychrometer(2) wind vane(4) thermometer