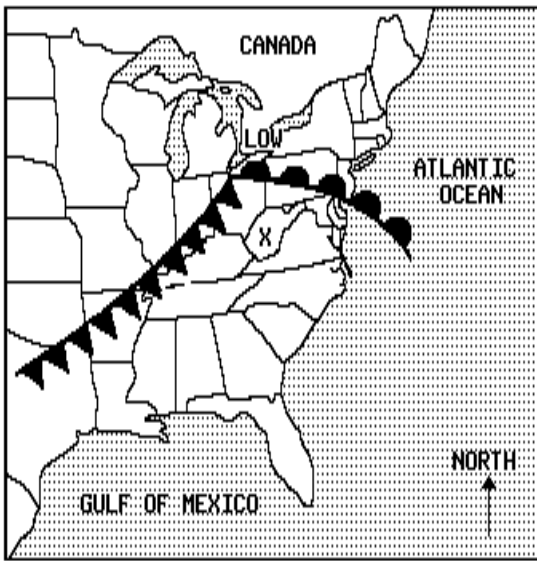


Name: _____

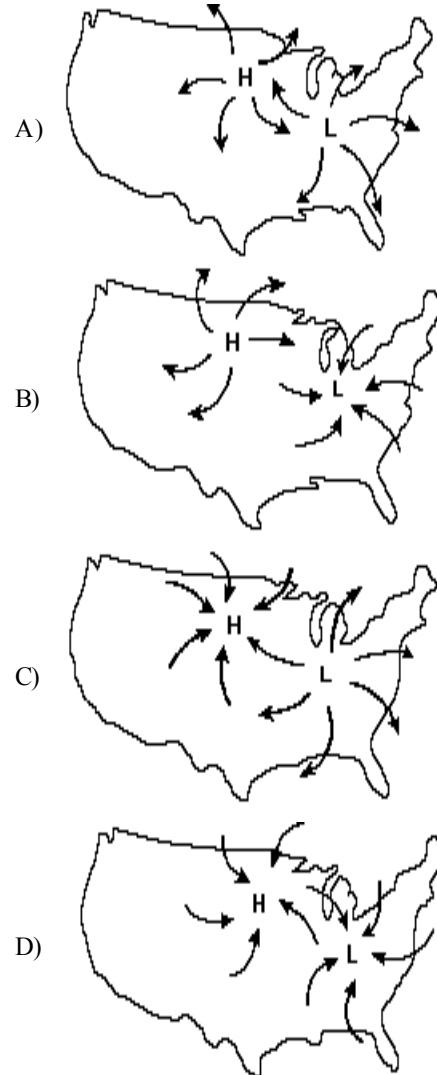
- 1) At which location will a low-pressure storm center most likely form?
 - A) along a frontal surface between different airmasses
 - B) near the middle of a cold airmass
 - C) on the leeward side of mountains
 - D) over a very dry, large, flat land area
- 2) A **mT** airmass would most likely originate over which type of Earth surface?
 - A) warm and moist
 - B) cold and dry
 - C) cold and moist
 - D) warm and dry
- 3) The weather map below shows a frontal system that has followed a typical storm track.



The air mass located over point X most likely originated over the

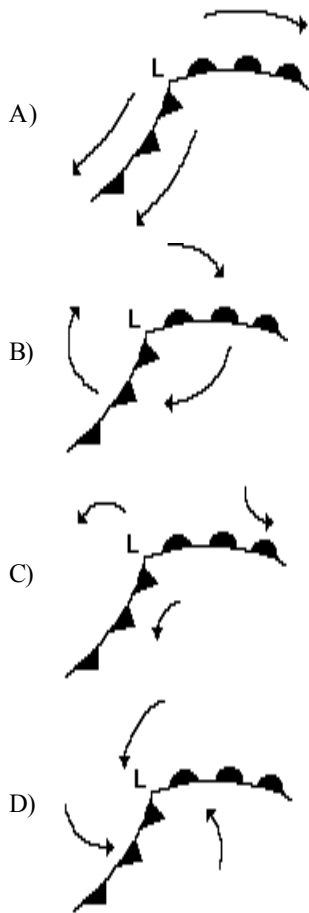
- A) Pacific Northwest
 - B) central part of Canada
 - C) northern Atlantic Ocean
 - D) Gulf of Mexico
- 4) Present-day weather predictions are based primarily upon
 - A) cloud height
 - B) ocean currents
 - C) airmass movements
 - D) land and sea breezes
- 5) An airmass located over the central United States will most likely move toward the
 - A) southwest
 - B) southeast
 - C) northwest
 - D) northeast

- 6) How does air circulate within a cyclone (low pressure area) in the Northern Hemisphere?
 - A) counterclockwise and away from the center of the cyclone
 - B) clockwise and away from the center of the cyclone
 - C) counterclockwise and toward the center of the cyclone
 - D) clockwise and toward the center of the cyclone
- 7) Which map correctly shows the wind directions of the high-pressure and low-pressure systems?

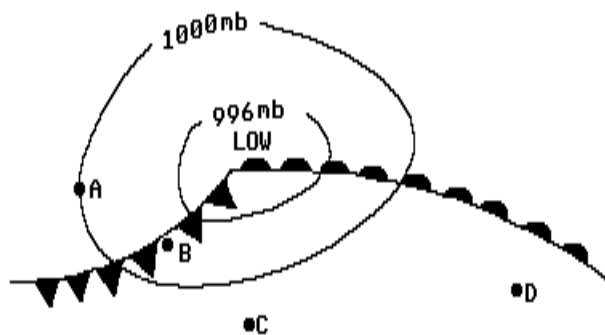


- 8) An airmass from the Gulf of Mexico, moving north into New York State, has a high relative humidity. What other characteristics will it probably have?
 - A) cool temperatures and high pressure
 - B) cool temperatures and low pressure
 - C) warm temperatures and high pressure
 - D) warm temperatures and low pressure
- 9) Which symbol would be used to identify an air mass originating in central Canada?
 - A) **cP**
 - B) **mT**
 - C) **cT**
 - D) **mP**

- 10) Which diagram below best represents the air circulation around a Northern Hemisphere low-pressure center?



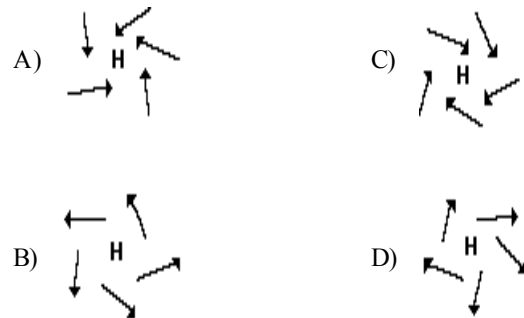
- 11) On a weather map, an air mass that is very warm and dry would be labeled
- A) **mT** C) **cP**
 B) **cT** D) **mP**
- 12) Cities A, B, C, and D on the weather map below are affected by a low pressure system (cyclone).



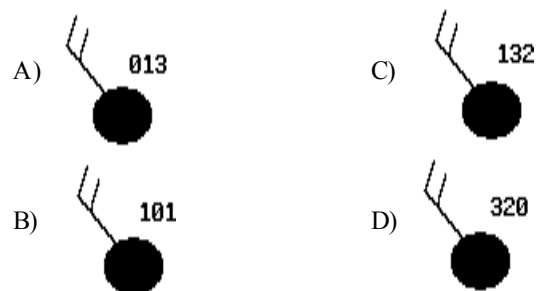
Which city would have the most unstable atmospheric conditions and the *greatest* chance of precipitation?

- A) **D** B) **C** C) **B** D) **A**
- 13) A high-pressure center is generally characterized by
- A) cool, wet weather C) warm, dry weather
 B) cool, dry weather D) warm, wet weather

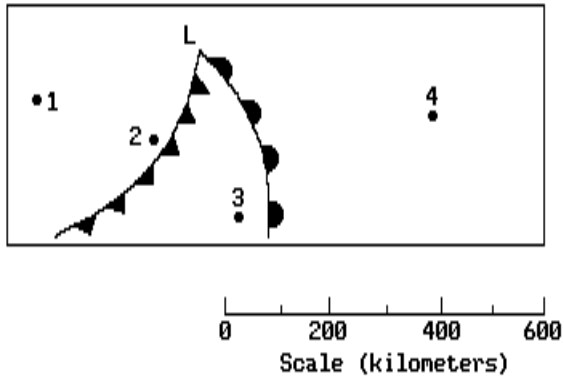
- 14) Why do clouds usually form at the leading edge of a cold airmass?
- A) Cold air contains more water vapor than warm air does.
 B) Cold air contains more dust than warm air does.
 C) Cold air flows under warm air, causing the warm air to rise and cool.
 D) Cold air flows over warm air, causing the warm air to descend and cool.
- 15) An air mass originating over north central Canada would most likely be
- A) cold and dry C) cold and moist
 B) warm and dry D) warm and moist
- 16) Which diagram correctly represents the air circulation in a Northern Hemisphere high pressure airmass?



- 17) A weather station records a barometric pressure of 1013.2 millibars. Which diagram below would best represent this weather station on a weather map?

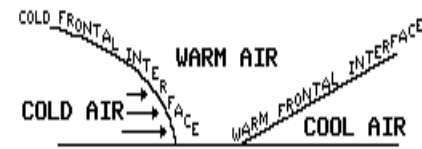


- 18) The diagram below shows four points on a map with their relative positions to a low-pressure weather system. Which point is most likely having heavy precipitation?



- A) 1 B) 2 C) 3 D) 4

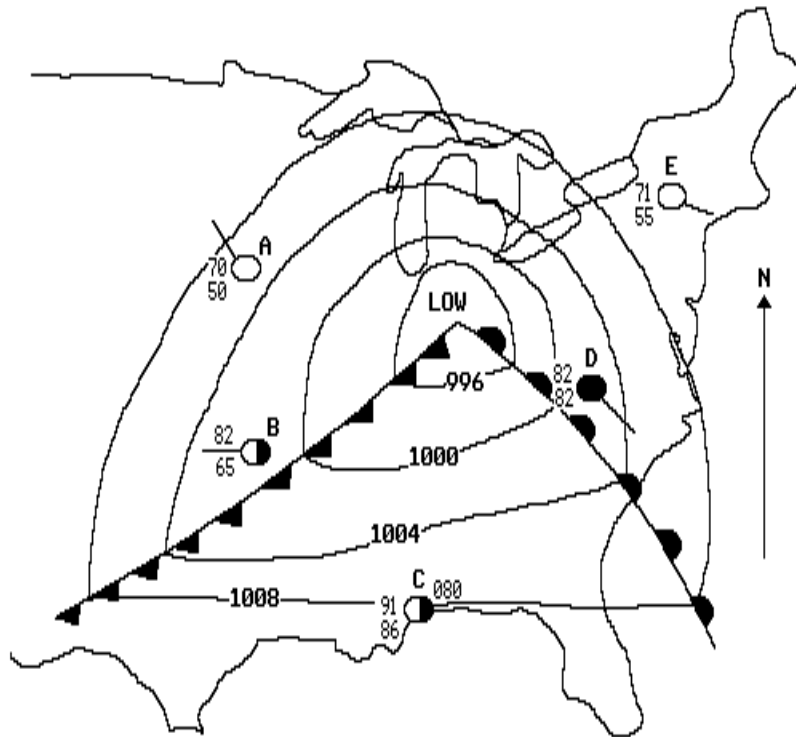
- 19) The diagram below represents a cross-sectional view of airmasses associated with a low-pressure system. The cold frontal interface is moving faster than the warm frontal interface. What usually happens to the warm air that is between the two frontal surfaces?



- A) The warm air is forced under both frontal interfaces.
 B) The warm air is forced under the cold frontal interface but over the warm frontal interface.
 C) The warm air is forced under the cold frontal interface but under the warm frontal interface.
 D) The warm air is forced over both frontal interfaces.
- 20) An airmass originating over the North Pacific Ocean would most likely be
- A) continental polar
 B) maritime polar
 C) maritime tropical
 D) continental tropical
- 21) Compared to a maritime tropical airmass, a maritime polar airmass has
- A) lower temperature and less water vapor
 B) higher temperature and less water vapor
 C) lower temperature and more water vapor
 D) higher temperature and more water vapor

Questions 22 through 24 refer to the following:

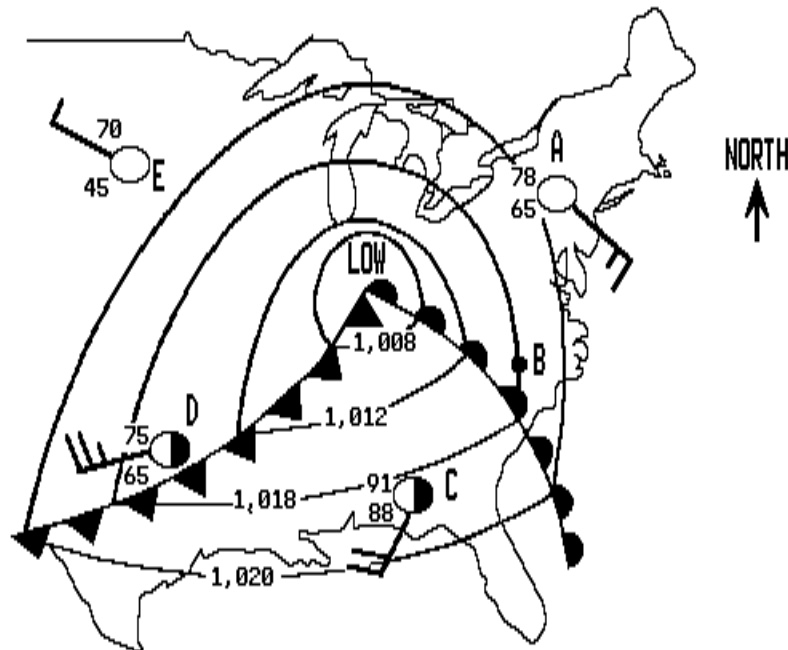
The diagram below represents a surface weather map of a portion of the United States. The map shows a low-pressure system with frontal lines and five weather stations *A* through *E*. Note that part of the weather data is missing from each station. [All temperatures are in °F.] [Refer to the *Earth Science Reference Tables*.]



- | | | | | | | | | | | | | | |
|--|--------------|--------------|--------------|--------------|------------------------------|---------------------------|-------------------------------|--|---|-------------|-------------|-------------|-------------|
| <p>22) The wind direction at station <i>A</i> is</p> <table border="0"> <tr> <td>A) southeast</td> <td>C) southwest</td> </tr> <tr> <td>B) northeast</td> <td>D) northwest</td> </tr> </table> <p>23) The weather at station <i>C</i> would most likely be</p> <table border="0"> <tr> <td>A) overcast, humid, and cool</td> </tr> <tr> <td>B) partly cloudy and warm</td> </tr> <tr> <td>C) very dry and extremely hot</td> </tr> <tr> <td>D) partly cloudy, windy, and very cold</td> </tr> </table> | A) southeast | C) southwest | B) northeast | D) northwest | A) overcast, humid, and cool | B) partly cloudy and warm | C) very dry and extremely hot | D) partly cloudy, windy, and very cold | <p>24) Assuming that the low-pressure system follows a normal storm track, which weather station is probably located in the path of the approaching center of the low?</p> <table border="0"> <tr> <td>A) <i>C</i></td> <td>B) <i>A</i></td> <td>C) <i>B</i></td> <td>D) <i>E</i></td> </tr> </table> | A) <i>C</i> | B) <i>A</i> | C) <i>B</i> | D) <i>E</i> |
| A) southeast | C) southwest | | | | | | | | | | | | |
| B) northeast | D) northwest | | | | | | | | | | | | |
| A) overcast, humid, and cool | | | | | | | | | | | | | |
| B) partly cloudy and warm | | | | | | | | | | | | | |
| C) very dry and extremely hot | | | | | | | | | | | | | |
| D) partly cloudy, windy, and very cold | | | | | | | | | | | | | |
| A) <i>C</i> | B) <i>A</i> | C) <i>B</i> | D) <i>E</i> | | | | | | | | | | |

Questions 25 through 29 refer to the following:

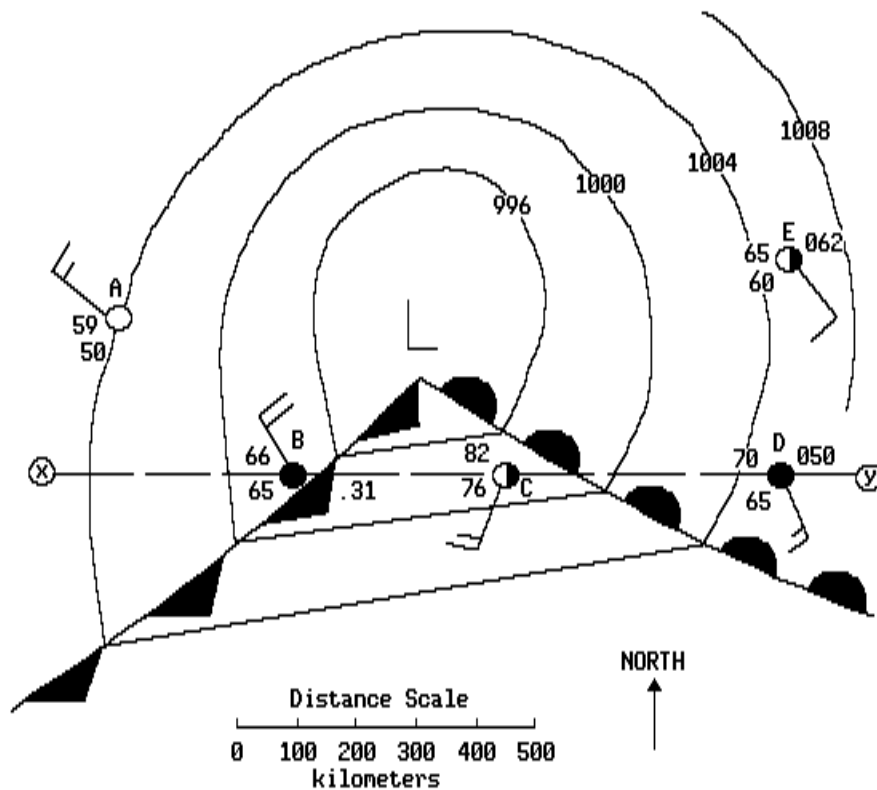
The diagram below represents a weather map showing part of the United States. Letters *A* through *E* represent weather stations.



- | | |
|--|--|
| <p>25) At which weather station is precipitation most likely occurring at the present time?</p> <p>A) <i>D</i> B) <i>B</i> C) <i>A</i> D) <i>E</i></p> <p>26) Which weather station model best represents weather conditions at station <i>B</i>?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>A)</p> </div> <div style="text-align: center;"> <p>C)</p> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>B)</p> </div> <div style="text-align: center;"> <p>D)</p> </div> </div> | <p>27) Which station's weather has been influenced most recently by the passage of a cold front?</p> <p>A) <i>B</i> B) <i>D</i> C) <i>C</i> D) <i>E</i></p> <p>28) At which weather station is the barometric pressure reading most likely to be 1,018.0 millibars?</p> <p>A) <i>D</i> B) <i>A</i> C) <i>C</i> D) <i>B</i></p> <p>29) If the low-pressure center follows a normal storm track, it will move toward the</p> <div style="display: flex; justify-content: space-between;"> <p>A) southeast</p> <p>C) northeast</p> </div> <div style="display: flex; justify-content: space-between;"> <p>B) southwest</p> <p>D) northwest</p> </div> |
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Questions 30 and 31 refer to the following:

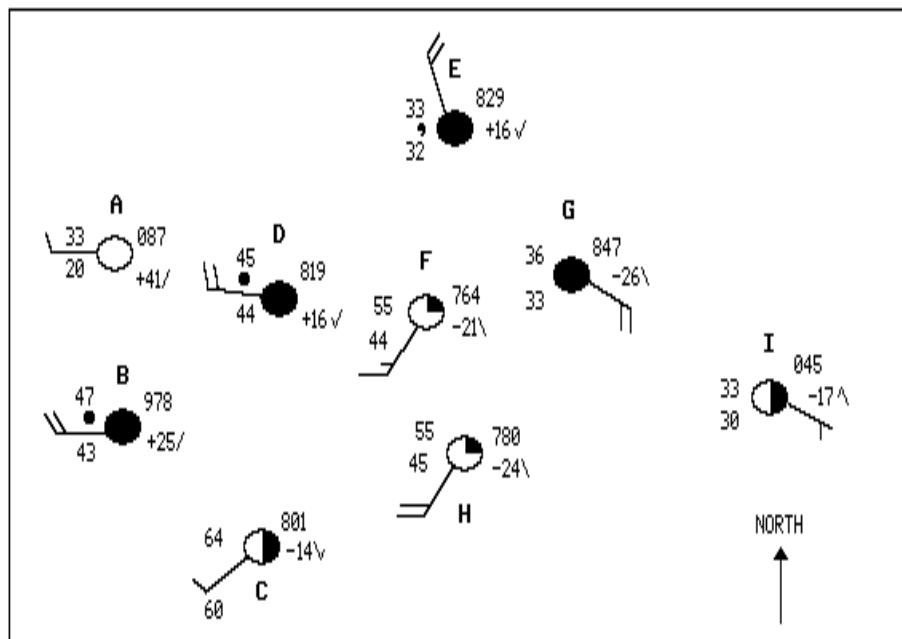
The map below represents a weather system located over the central United States. Letters *A*, *B*, *C*, *D*, and *E* locate weather stations on the map.



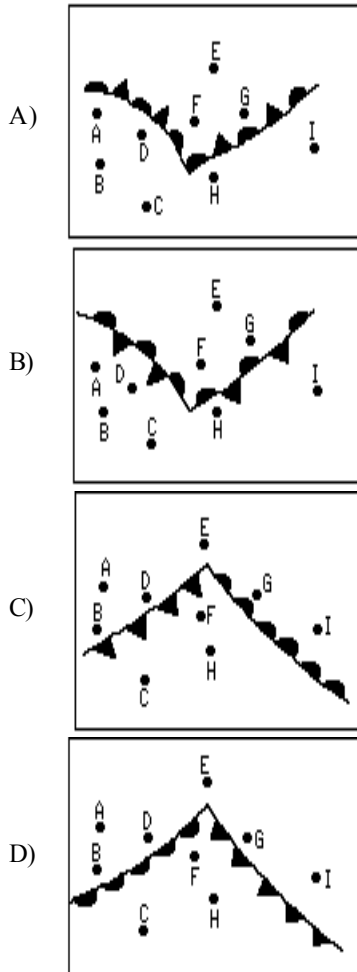
- | | |
|--|---|
| <p>30) If the weather system follows a normal storm track at a speed of 50 kilometers per hour, which best describes the atmospheric changes which will most likely occur at weather station <i>C</i> in about six hours?</p> <p>A) little atmospheric change with a low probability of precipitation</p> <p>B) air temperature increase, air pressure increase, and clearing sky</p> <p>C) air temperature decrease, air pressure increase, and precipitation</p> <p>D) air temperature increase, no change in air pressure, and clearing sky</p> | <p>31) Which weather station is experiencing clouds, heavy precipitation, and rapidly decreasing air temperature?</p> <p>A) <i>C</i> B) <i>D</i> C) <i>A</i> D) <i>B</i></p> |
|--|---|

Questions 32 through 34 refer to the following:

The diagram below represents a section of a weather map for locations in the central United States. The letters *A* through *I* identify reporting weather stations.



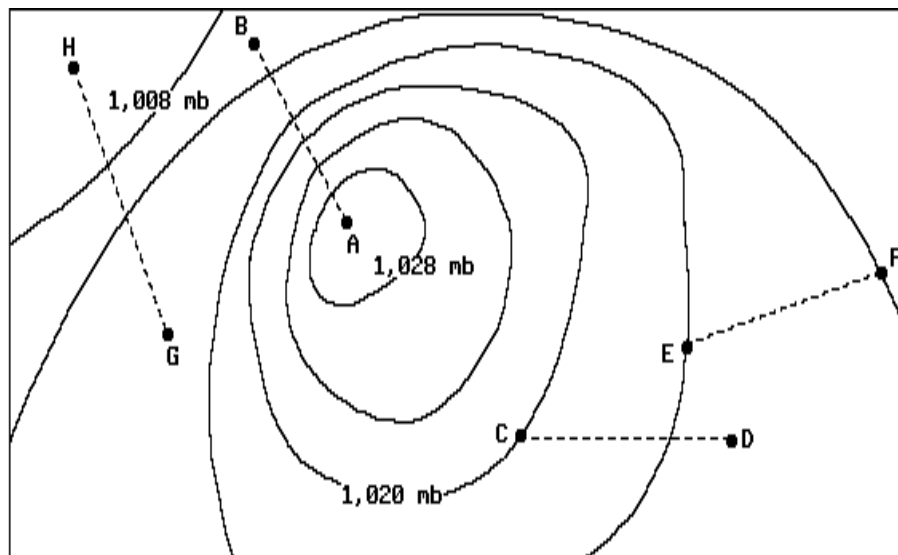
- 32) Which diagram best shows the fronts and their locations on the weather map?



- 33) Which weather station is *least* likely to experience precipitation during the next six hours?
 A) A B) C C) G D) F
- 34) If the weather system follows a typical storm track, it will move toward the
 A) west C) east
 B) north D) south

Questions 35 and 36 refer to the following:

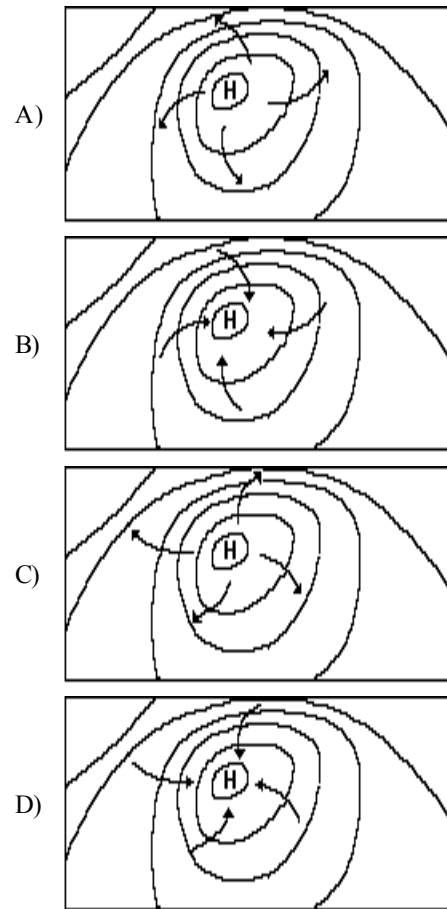
The surface weather map below represents a high-pressure center located over the central United States. The air pressure field lines are in millibars and the letters represent the locations of weather stations.



35) If the high-pressure center follows the typical direction of movement of an air mass across the United States, it will probably move toward the

- A) northwest
- B) northeast
- C) southeast
- D) southwest

36) In which diagram do the arrows best represent actual surface wind directions in this Northern Hemisphere high-pressure center?



- 1) A
- 2) A
- 3) D
- 4) C
- 5) D
- 6) C
- 7) B
- 8) D
- 9) A
- 10) D
- 11) B
- 12) C
- 13) B
- 14) C
- 15) A
- 16) D
- 17) C
- 18) B
- 19) D
- 20) B
- 21) A
- 22) D
- 23) B
- 24) D
- 25) B
- 26) A
- 27) B
- 28) C
- 29) C

- 30) C
- 31) D
- 32) C
- 33) A
- 34) C
- 35) B
- 36) C