Name: _____ Weather

Date: _____ Period: _____ The Physical Setting: Earth Science

Air Masses and Fronts

CLASS NOTES

- Air Masses - _____

  _____

- Source Region - _____

  _____

  - Air masses are named after their source region and are designated by letters

	continental arctic
	continental polar
	continental tropical
	maritime tropical
	maritime polar

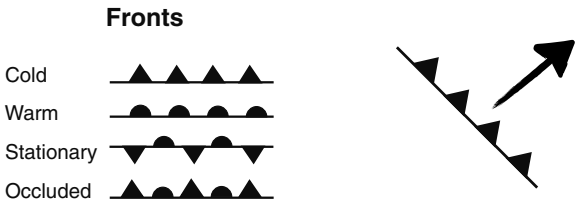
- Jet Stream - _____

  _____

  - Help move air masses around the globe

Air Masses and Fronts

- When two unlike air masses collide a weather front is created
- The boundary between the two different air masses is represented on a map with a symbol
- The side that the shapes are on shows the direction the front is moving towards



- Cold Front - _____

  _____

  - Weather: thunderstorms, heavy rain, and a sharp decrease in temperature

Cold Front

- Warm Front - _____

  _____

  - Weather: low clouds and widespread rainfall

Warm Front

Air Masses and Fronts

- Stationary Front - _____

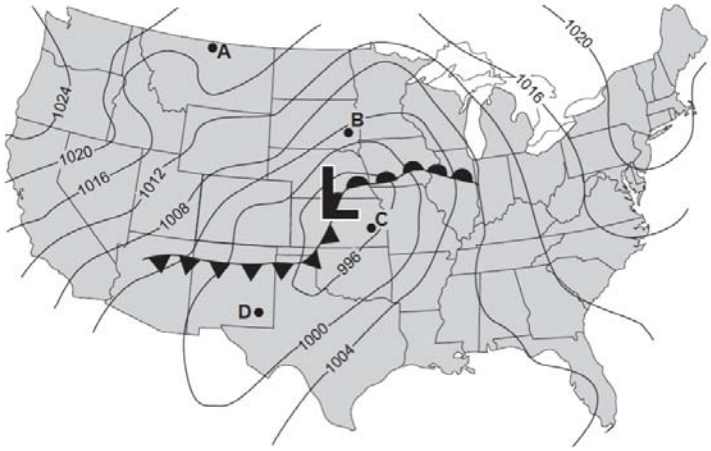
  _____

  - Weather: long widespread rain

Stationary Front

- Occluded Front - forms along a boundary where neither air mass is moving
  - Weather: long widespread rain and thunderstorms

Occluded Front



Air Masses and Fronts

PART I QUESTIONS: MULTIPLE CHOICE

1. A mT air mass 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

2. An air mass located over the central United States will most likely move toward the
    a. southwest
    b. southeast
    c. northwest
    d. northeast

3. Why do clouds usually form at the leading edge of a cold air mass?
    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.

4. A high-pressure center is generally characterized by
    a. cool, wet weather
    b. cool, dry weather
    c. warm, dry weather
    d. warm, wet weather

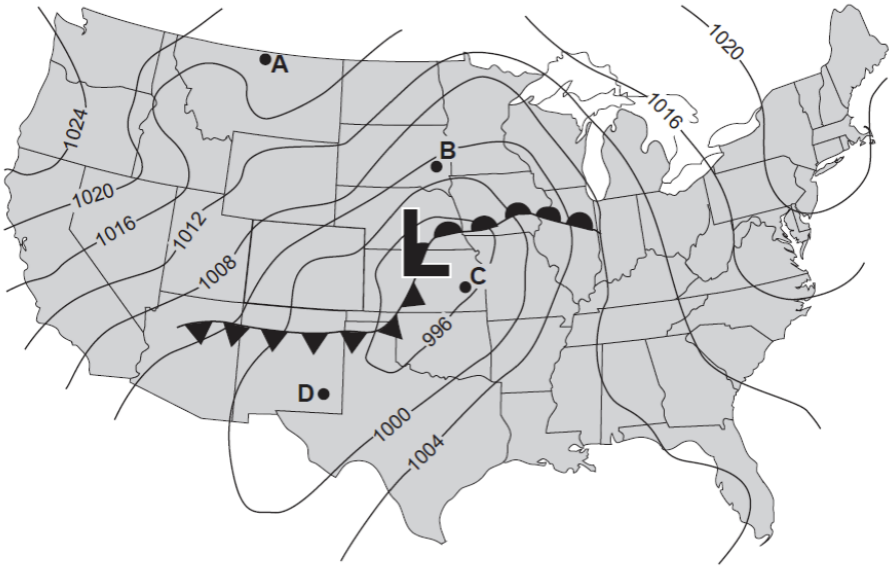
5. A cP airmass would most likely originate over which type of Earth surface?
    a. warm and moist
    b. cold and dry
    c. cold and moist
    d. warm and dry

6. Which symbol would be used to identify an air mass originating in central Canada?
    a. cP
    b. mT
    c. cT
    d. mP

7. 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

Air Masses and Fronts

Base your answers to questions 8 through 11 on the weather map below, which shows a low-pressure system over the central United States. Isobars are labeled in millibars. Points A, B, C, and D represent locations on Earth's surface.



8. The circulation of surface winds associated with this low-pressure system is
    a. clockwise and toward the center of the low
    b. clockwise and away from the center of the low
    c. counterclockwise and toward the center of the low
    d. counterclockwise and away from the center of the low

9. The air pressure at the center of this low is
    a. 991 mb
    b. 997 mb
    c. 994 mb
    d. 1001 mb

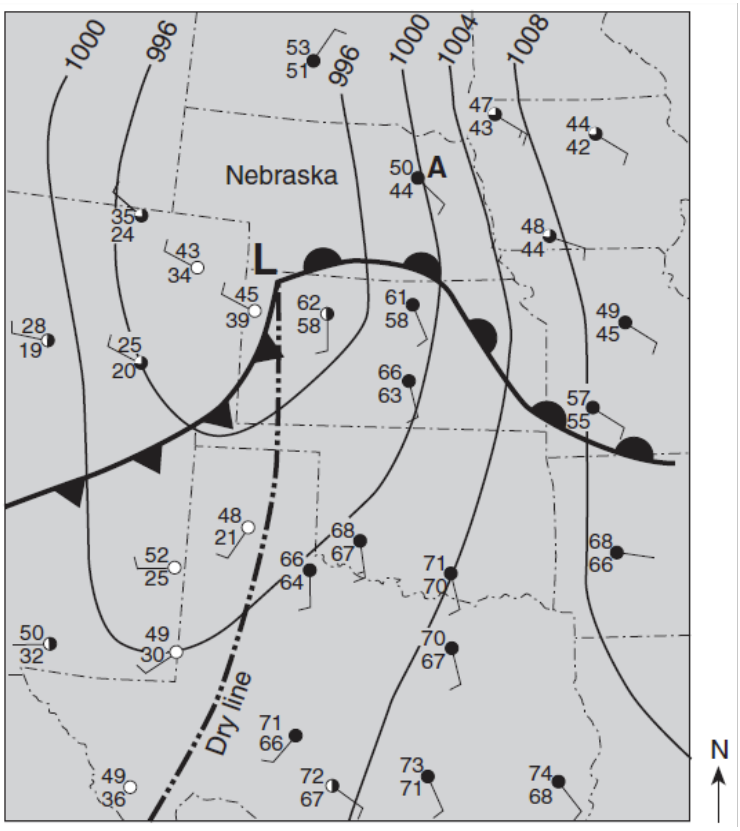
10. Which location is most likely experiencing the fastest wind speed?
    a. A
    b. B
    c. C
    d. D

11. Which direction will the low pressure most likely move towards over the next few days?
    a. southwest
    b. southeast
    c. northwest
    d. northeast

Air Masses and Fronts

PART II QUESTIONS: FREE RESPONSE

Base your answers to questions 12 through 13 on the information and weather map below. The weather map shows the center of a low pressure system. The symbol —··—··— represents the dry line which separates cT and mT air masses. Isobars are drawn at intervals of 4 millibars. Letter A indicates a weather station model.



12. The atmospheric conditions in eastern Nebraska are represented on the map by a station model labeled A. List all the weather variables below based on station model A.

13. Compared to the temperature and humidity of the air on the east side of the dry line, describe the temperature and humidity of the air on the west side.