**Severe Weather Study Guide**

Refer to chapter 12: Meteorology and chapter 13: The Nature of Storms

Define the following.

-Storm surge (p. 359) *When hurricane force winds drive a mound of ocean water over land.*

-Severe weather warning *when severe weather conditions already exist*

-Severe weather watch *when there is a potential for the severe weather storm*

- Weather (p.314)*short-term variations in the atmosphere phenomena that interact and affect the environment*

-Coriolis effect (p.318)*deflection of air due to the rotation of the Earth.*

- Drought *Extended periods of well below average rainfall.*

- Tropical cyclone/hurricanes *During the summer and fall, the tropics experience conditions ideal for the formation of large, rotating, low-pressure storms*

-Tornado (p. 352)*Violent whirling column of air in contact with the ground*

-stepped leader (p. 348) *Channel of negatively charged air the descends to the ground*

-return stroke *A channel of positively charged ions that rushes up to meet the stepped leader when lightning strikes.*

1. The rising, moist updrafts and falling, cool downdraft's form a convection cell that produces the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ associated with thunderstorms.

*Gusty surface winds*

2. What other kinds of severe weather can be produced with thunderstorms?

*tornadoes*

3.What kind of damage could a drought cause?

*Destruction of crops, increased probability of forest fires, and food shortages*

4. What kind of damage can a hurricane cause?

*Storm surge, flooding, severe winds*

5. What kind of social damage can a hurricane cause?

*Lack of food*

6. What should you do if a hurricane is coming your way?

*Evacuate*

7. What should you do if a tornado is coming your way? Do tornadoes occur in Michigan?

*Go to a room with no windows*

8. Why do different regions of the world experience different forms of severe weather at different times?

*Different seasons*

9. What time of the year do hurricanes occur most frequently? Tornadoes?

*Hurricanes- summer/fall Tornadoes-spring/summer*

10. Describe the weather during..

-high-pressure systems (p.322-323 ) *Fair weather*

-in polar zones

-in low pressure systems *Cloudy weather with low precipitation*

-at a front *range of different weather*

-a cold front *intense precipitation and T-storms*

- an occluded front *Strong winds and high precipitation*

- warm front *widespread light precipitation*

- stationary front *Light wind and precipitation*

11. What do mountains, convection, convergence and frontal wedging all cause?

*Cause air to rise forming clouds and precipitation*

12. Can hurricanes occur over any large body of water?

*No needs to have warm water and unstable air*

13. Describe an example of weather and of climate.

*Thunderstorm, Average rainfall over 30 years*

14. List the three conditions that must exist for a thunderstorm to form.(p.344)

*A source of moisture, lifting of an air mass and an unstable atmosphere*

16. Where do hurricanes occur and why? (p. 355)

*All tropical oceans except the south Atlantic because the water is too cold and the air is stable.*

17. What are the three stages of thunderstorm development in the correct order. (p. 347)

*Cumulus stage, mature stage, dissipation stage*

18. Practice reading the Windchill chart on page 367.