

NATS 101 Introduction to Weather and Climate, Section 54, Fall 2005
Study Guide: Questions for 17 November - 6 December readings

1. A ridge is associated with _____ pressure and a trough is associated with _____ pressure.
 a. high, low
 b. low, high
2. The seasons in the tropics are determined by,
 a. temperature
 b. precipitation
 c. number of hurricanes
 d. moisture
3. Name three characteristics of a severe thunderstorm.
4. What atmospheric scale are hurricanes?
 a. mesoscale
 b. synoptic scale
 c. global scale
 d. microscale
5. The lowest pressure of a hurricane is in the,
 a. eye
 b. eye wall
 c. rain bands
 d. outflow
6. When do most tornadoes form?
 a. summer
 b. fall
 c. winter
 d. spring
7. What are streamlines and what do they replace on a surface map in the tropics?
8. Where does the energy fueling a hurricane mainly come from?

Solutions to select study guide questions:

1. a

2. b

3. large hail, strong surface winds, longer than an hour duration, presence of a funnel cloud or tornadoes, multicellular or supercellular structure

4. b

5. a

6. d

7. Streamlines depict the flow of wind and are used to show where surface air converges and diverges. They replace isobars on a surface map for the tropics. This because there is little variance in sea level pressure in this region, creating only small deviations in the isobars which are difficult to read on a surface map.

8. Energy fueling a hurricane comes mainly from two sources: 1) the direct sensible heat transfer from the warm surface waters to the lower atmosphere; 2) the condensation of moisture within the cloud and the resulting latent heat release, where the moisture, like the sensible heat, is primarily supplied by the ocean surface.