



5. Describe the three basic mechanisms of energy transfer. Which mechanism is least important meteorologically?
6. What is the difference between convection and advection?
7. Compare visible, infrared and ultraviolet radiation. For each, indicate whether it is considered short wavelength or long wavelength.
8. In what part of the electromagnetic spectrum does solar radiation have the highest intensity?

9. Describe the relationship between the temperature of a radiating body and the wavelengths it emits.

10. Why does the daytime sky usually appear blue?

11. Why may the sky appear to have a red or orange tint near sunrise or sunset?

12. What factors influence albedo from time to time and from place to place?

13. Explain why the atmosphere is heated chiefly by radiation from Earth's surface rather than by direct solar radiation.

14. Which gases are the primary heat absorbers in the lower atmosphere? Which one is the most influential in weather?

15. How does Earth's atmosphere act as a 'greenhouse'?

16. What is responsible for absorbing the largest portion of incoming solar radiation?

17. What is the atmospheric window? How is it 'closed'?

18. What two phenomena are driven by the imbalance of heating that exists between the tropics and poles?

19. Refer to figure 2-6 and calculate the noon Sun angle on June 21 and December 21 at 50 degrees north latitude, 0 degrees latitude (equator) and 20 degrees south latitude. Which of these latitudes has the greatest variation in noon Sun angle between summer and winter?

20. How would our seasons be affected if Earth's axis were not inclined 23.5 degrees to the plane of its orbit but were instead perpendicular?

21. Define the following terms by using the web site at [www.rsffa.com](http://www.rsffa.com), go to Meteorology link and play the hangman game.

- a. Albedo
- b. Equinox
- c. blackbody radiation
- d. conduction

- e. convection
- f. electromagnetic radiation
- g. electromagnetic spectrum
- h. greenhouse effect
- i. infrared radiation
- j. kinetic
- k. light scattering
- l. longwave radiation
- m. perihelion
- n. advection
- o. potential
- p. revolution
- q. rotation
- r. shortwave radiation
- s. spring equinox

- t. solstice
- u. Tropic of Cancer
- v. Tropic of Capricorn
- w. ultraviolet