Roland-Story Natural Resources Class

Meteorology Unit
Chapter 5 Study Guide

Name _____ _____points earned
20 possible points

1. Clouds are classified on what two criteria?

2. Why are high clouds always thin in comparison to middle and low clouds?

3. Which cloud types are associated with the following characteristics:

   a. Thunder –

   b. Halos –

   c. Precipitation –

   d. Hail –

   e. Mackerel sky –

   f. Lighting –

   g. Mare's tail --

4. What do layered clouds indicate about the stability of the air? What do clouds of vertical development indicate about the stability of air?

5. What is the importance of condensation nuclei?

6. Distinguish between clouds and fog.

7. List five types of fog and discuss how they form.

8. What actually happens when a radiation fog 'lifts'?

9. Identify the fogs described in the following situation:

   a. You have stayed the night in a motel and decide to take an early morning swim. As you approach the pool, you notice fog over the water.

   b. You are located in the western Great Plains and the winds are from the east and fog is extensive.

   c. You are driving through hilly terrain during the early morning hours and experience fog in the valleys but clearing on the hills.

10. Why is there a relatively high frequency of dense fog along the Pacific Coast?

11. Describe the steps in the formation of precipitation according to the Bergeron process. Be sure to include importances of super cooled cloud droplets, the role of freezing nuclei, and the difference in saturation vapor pressure between liquid water and ice.

12. How does the collision-coalescence process differ from the Bergeron process?

13. If snow is falling from a cloud, which process produced it? Explain.

14. Describe sleet and glaze and the circumstance under which they form. Why does glaze result on some occasions and sleet on others?

15. How does hail form? What factors govern the ultimate size of hailstones?

16. Although an open container can serve as a rain gauge, what advantages does standard rain gauge provide?

17. How do recording rain gauges work? Do they have advantages over a standard rain gauge? If so, what are they?

18. Describe some of the factors that could lead to an inaccurate measurement of rain or snow.

19. Why are silver iodide crystals used to seed super cooled clouds?

20. If cloud seeding is to have a chance of success, certain atmospheric conditions must exist. Name them.

21. How do frost and white frost differ?

22. Describe how smudge fires, sprinkling, and air mixing are used to prevent frost.

23. List three factors that contribute to greater precipitation in and downwind of cities.

24. Define the following terms by using the web site at www.rsffa.com, go to Meteorology link and play the hangman game.

a. Advection fog –

b. Bergeron process –

c. cirrus –

d. condensation nuclei –

e. clouds –

f. cumulus –

g. dew–

h. fog –

i. freezing nuclei –

j. frost –

k. glaze –

l. hail –

m. rain –

n. rime –

o. sleet –

p. snow –

q. steam fog –

r. stratus --

s. supercooled –

t. upslope fog –

u. white frost –