CIVL 3066 Engineering Hydrology
Spring Semester 2009

Quiz No. 1 (Solution)

Name: **ID #:**

Total marks: 10   Time allowed: 40 minutes
Attempt all the questions.

1. What is a watershed divide? [1]

   Answer:
   Boundary of the watershed found by joining the points separating adjacent watershed

2. What is relative humidity? [1]

   Answer:
   Ratio of the vapor pressure in the air to the saturation vapor pressure

3. What is a front? [1]

   Answer:
   Boundary between two air masses, for example, cold and warm air masses

4. What is lapse rate? [1]

   Answer:

   Rate of change of air temperature with the elevation

5. What is a rating curve? [1]

   Answer:

   The relationship between discharge and water surface elevation

5. Briefly explain what is orographic rainfall? [1]

Answer:
When the clouds are lifted up because of the mountains blocking their movement, the resulting rainfall is called orographic rainfall

6. What is the purpose of using Theissen Polygon method? [1]

Answer:
To find average precipitation over the watershed area from gauge precipitation values

7. Which quantity is expressed in terms of Langleys per day? [0.5]

Answer:
Energy in a watershed

8. In the following equation, define all the variables and show their units. [2.5]

$$f = f_c + (f_0 - f_c)e^{-kt}$$

Answer:

f = Rate of infiltration (length/time)

f_c = Equilibrium or final rate of infiltration (length/time)

f_0 = Initial rate of infiltration (length/time)

k = Constant (1/time)

t = time (time)