



ASSIGNMENT #5

CE4214 Hydrology

Engr. Reynaldo P Ramos, PhD

DUE DATE: 22 FEB 2019

NOTE: This homework will be solved and it should be written in the notebook. It will be checked and graded. Please show complete computations. Identical answers (verbatim) as if copied from classmates will get a 0 point.

1. Table below shows the rainfall amounts recorded during a storm. Calculate the (a) total rainfall (b) average intensity (c) the duration (d) peak intensities for 15, 25, 35, and 45 minutes. All answers in metric system (mm and mm/hr).

Time, minutes	Rainfall Amount, inches
5	0.06
10	0.25
15	0.35
20	0.51
25	0.59
30	0.49
35	0.45
40	0.56
45	0.28
50	0.20
55	0.15
60	0.04



2. You have to read the two e-books (*Concise Hydrology and Fundamentals of Hydrology*) to get the answers. You can also use google search engine to get additional information.

- a. What are the three types of precipitation? Define and draw/sketch each type.
- b. Differentiate the following types of recording rain gauges: (a) tipping bucket rain gauge (b) weighing type rain gauge (c) float type rain gauge.
- c. Draw/Sketch a tipping bucket rain gauge and label the main parts.
- d. What are the conditions that need to be met prior to precipitation forming?
- e. What are the static variables on precipitation distribution?
- f. Define the following: (a) throughfall (b) stemflow (c) interception loss (d) interception gain
- g. What are some of the errors in measuring rainfall that need to be considered in designing a method for the accurate measurement of rainfall?
- h. Define the following: (a) flux (b) radiation emission (c) net radiation (d) vapour pressure (e) relative humidity (e) sensible heat (f) latent heat (g) potential evapotranspiration
- i. What are the factors that influence evapotranspiration on land?
- j. What are the field measurements used in determining quantity of evaporation?