

Name _____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. (a) On what parameters does capacitance typically depend? (b) When a capacitor is fully charged in an RC circuit, what current exists in it? Please show a detailed explanation. (5 pts)

2. (a) What is the potential difference across a capacitor after it has been discharging for a very long time? Please give a detailed explanation. (b) Solve the equation $V_c = V_0 e^{-t/RC}$ for t . (c) What is the difference between the natural and common logarithm? (15 pts)