

Closed book and notes.

**Show your work for credit and place a box around each of your answers.**

1. Write two equations for  $V_c(t)$  (one for each transition in the input,  $V_s$ ) in the following circuit noting  $RC$  ( $= 100$  ns) is much smaller than the pulse width ( $1\mu\text{s}$ ) and period ( $2\mu\text{s}$ ) of the input. What is  $V_c(t)$  if the pulse width and period are changed so that they are much shorter than the  $RC$  time? (5 points)

