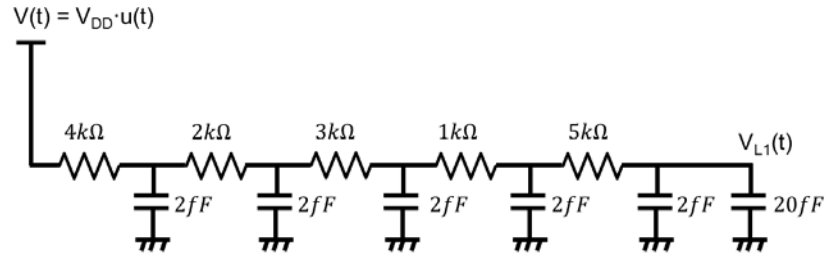


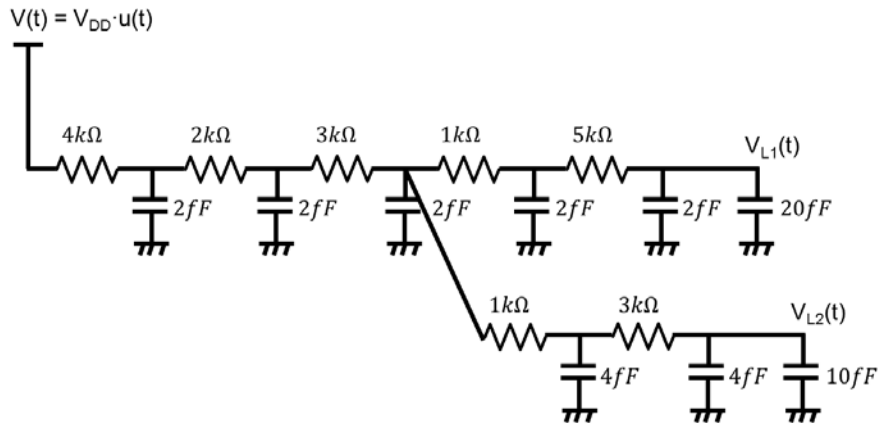
## Homework Assignment 7

(Due Mar. 29th at the beginning of the class)

- (1) [Elmore Delay, 10 points] Compute Elmore delay at L1 in the following figure.



- (2) [Elmore Delay, 10 points] Compute Elmore delays at L1 and L2 in the following figure.



- (3) [Switching Characteristics, 10 points] Compute the rise time at the output node in the following figure.  $C_1$  and  $C_2$  are parasitic capacitances at the internal nodes (and they are fully discharged at time 0). The input switches from (A, B, C, D, E, F) = (1, 1, 1, 1, 1, 1) to (0, 0, 1, 1, 0, 1). Use  $R_X$  (where X=A, B, C, D, E, F) for the resistance of transistor X.

