

LAHORE UNIVERSITY OF MANAGEMENT SCIENCES
Department of Electrical Engineering

EE 240 Circuits I
Quiz 6

Name: _____

Campus ID: _____

Total Marks: 10

Time Duration: 15 minutes

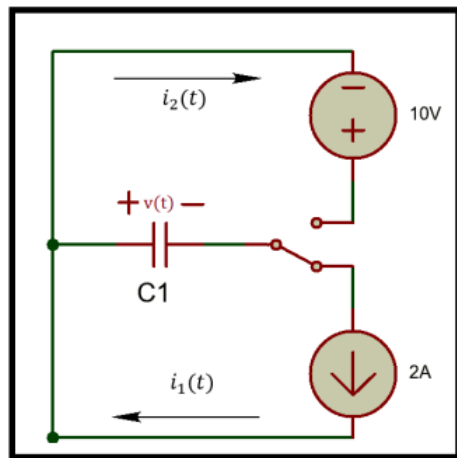
Question 1 (10 marks)

Study the figures below with ideal voltage and current sources. Given that an initially uncharged capacitor is connected to the configuration in figure a) at $t = 0$ s.

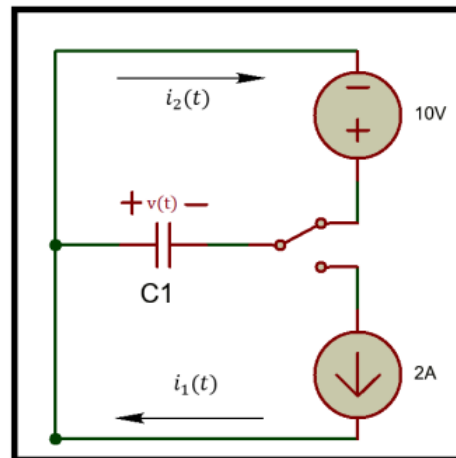
- (a) [5 marks] Given that the capacitor is charged by a current source from $t = 0$ s to $t = 4$ s and $v(4^-) = 80$ V, find the value of capacitance C_1 .

The switch is now moved to the configuration in figure b) at $t = 4$ s.

- (b) [5 marks] Find a piecewise function for and sketch the current $i_1(t)$ and $i_2(t)$ for $t \in (-\infty, \infty)$.



(a) Circuit for $0 \leq t < 4$ s



(b) Circuit for $t \geq 4$ s