

LAHORE UNIVERSITY OF MANAGEMENT SCIENCES
Department of Electrical Engineering

EE240 Circuits I
Quiz 01

Name: _____

Campus ID: _____

Total Marks: 10

Time Duration: 15 minutes

Question 1 (4 marks)

The charge on the capacitor of capacitance $0.5F$ is plotted against time in Figure 1 below.

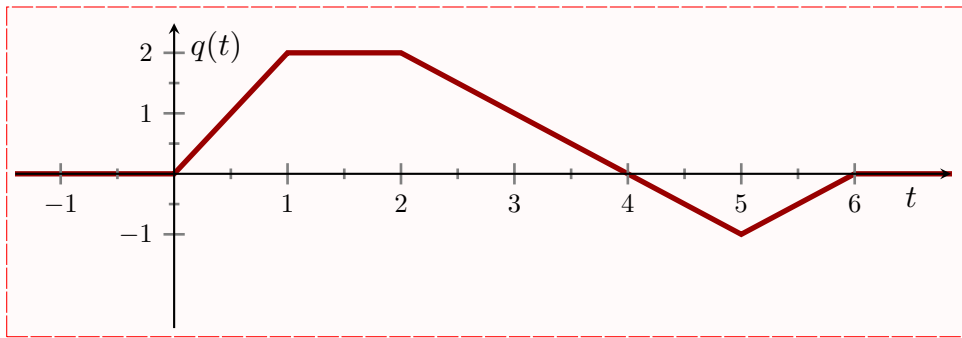
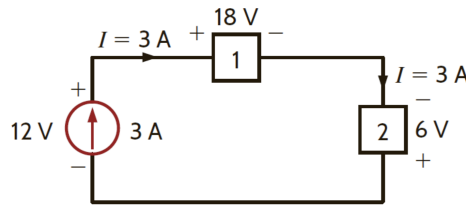


Figure 1: Charge on the Capacitor.

- (a) [3 marks] Determine (or plot) the current $i_c(t)$ through the capacitor.
- (b) [1 mark] Determine the energy stored in the capacitor at $t = 1.5s$.

Question 2 (2 marks)

The current source is connected to elements 1 and 2 in series in the circuit given below. Determine the power being *supplied* by the current source and the power being *absorbed or dissipated* by the elements.



Question 3 (4 marks)

Consider the circuit given below. Assume that the switch is at position 1 for very long time and the capacitor is fully charged. The switch is moved from position 1 to position 2 at $t = 0$. Plot $v_R(t)$ and $i_R(t)$ for all times.

