

LAHORE UNIVERSITY OF MANAGEMENT SCIENCES  
Department of Electrical Engineering

EE240 Circuits I  
Quiz 05

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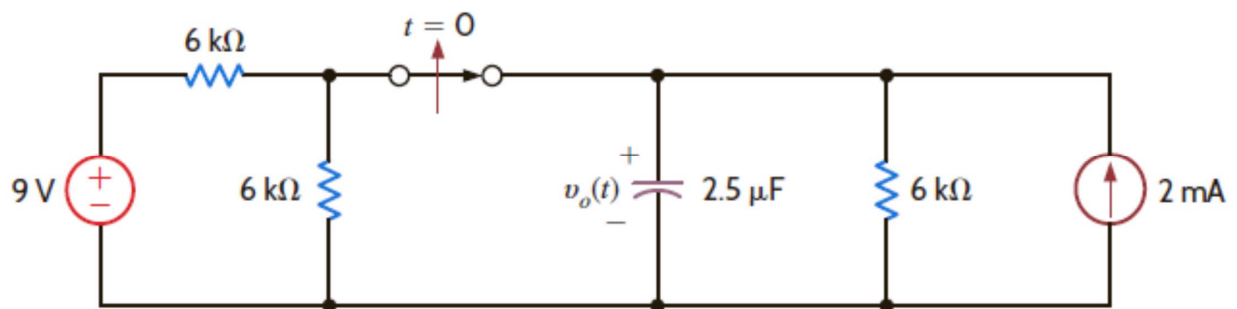
Total Marks: 10

Time Duration: 20 minutes

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Question 1 (10 marks)

Assume that the switch is opened at  $t = 0$  in the circuit below.



- [3 marks] Determine  $v_o(t)$  at  $t = 0^-$ .
- [1 mark] Determine  $v_o(t)$  at  $t = 0^+$ .
- [2 marks] Write down the differential equation, in terms of  $v_o(t)$ , describing the circuit after the switch is opened.
- [1 mark] Determine  $v_o(t)$  at  $t = \infty$ .
- [3 marks] Determine  $v_o(t)$  for all values of  $t$  and plot (and label) it.