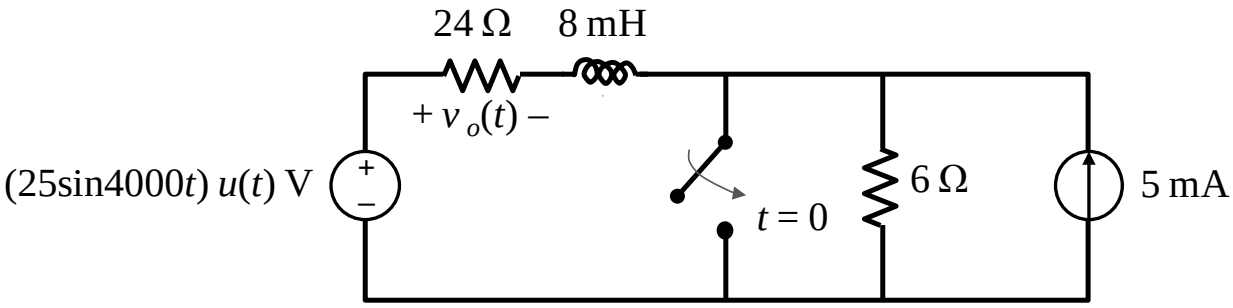
Circuit Theorem **Electronic Engineering, Taipei Tech**

Final (8, Jan. 2019) **Lecturer: Dr. Yen-Sheng Chen**

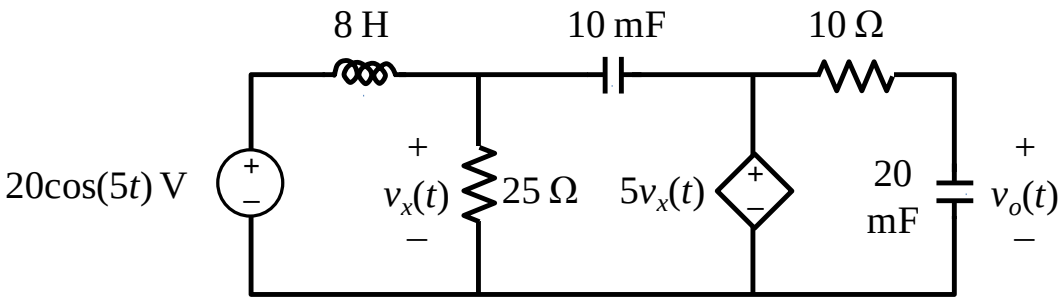
ID: **Name:**

1. The switch is turned off before $t = 0$ for a long time. At $t = 0$, the switch is turned on.
   (a) [20 pt] Calculate the **complete solution** of $v_o(t)$ for $t \geq 0^+$.
   (b) [10 pt] Based on the solution of (a), as the transient component vanishes, find out the **steady-state solution** of $v_o(t)$ for $t \geq 0^+$.
   (c) [20 pt] Use Phasor analysis and calculate the **steady-state solution** of $v_o(t)$ for $t \geq 0^+$. Compare your solution with the one for (b).

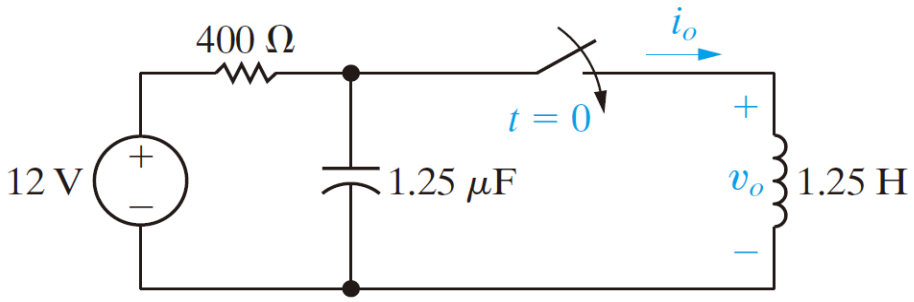


Note: $u(t)$ is a step function.

2. [30 pt] Calculate the **steady-state solution** of $v_o(t)$



3. [20 pt] The switch is turned off before $t = 0$ for a long time. At $t = 0$, the switch is turned on. Calculate the **complete solution** of $v_o(t)$ for $t \geq 0^+$.



- **Please detail the computational process. Failure to do so will result in less or no points at all.**
- **The grade will be sent to your e-mail by this Friday. If there is any issue related to your grade, come to Complex Building 407-1 on Friday afternoon.**