

系組： 電機系乙組、電機系海外

准考證號碼：

科目： 電路學

(請考生自行填寫)

注意事項	一、請先檢查准考證號碼、報考系(組)別、考試科目名稱，確定無誤後再作答。 二、所有答案應寫於答案紙上，否則不予計分。 三、作答時應依試題題號，依序由上而下書寫，作答及未作答之題號均應抄寫。
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1. Determine the values of the mesh currents, i_1 and i_2 , for the circuit shown in Figure 1. (20%)

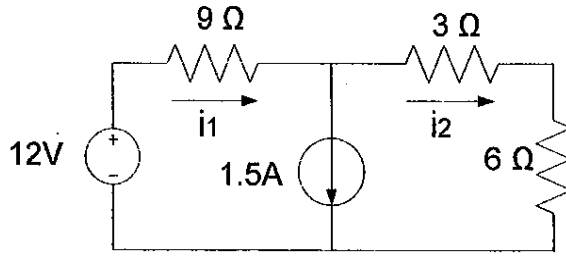


Fig. 1

2. For the circuit of Figure 2, specify the value of the resistance R_L that will cause current i_L to be $-2A$. (20%)

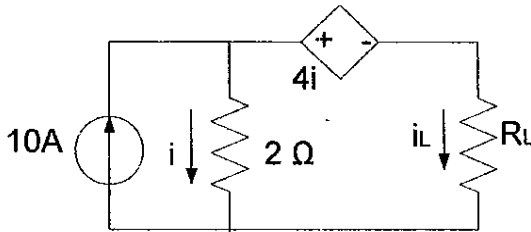


Fig. 2

3. Find V_0 for the circuit shown in Figure 3. Assume an ideal operational amplifier. (20%)

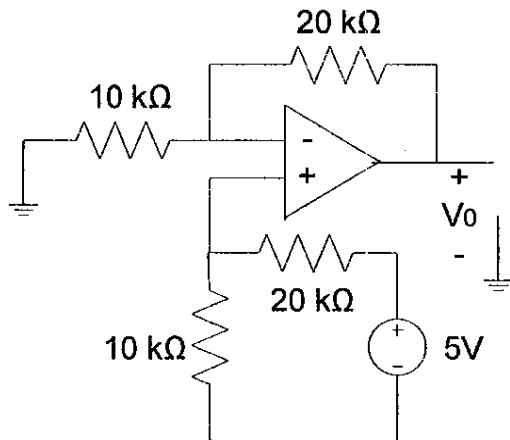


Fig. 3

4. Find the steady-state voltage V_0 for the circuit of Figure 4. (20%)

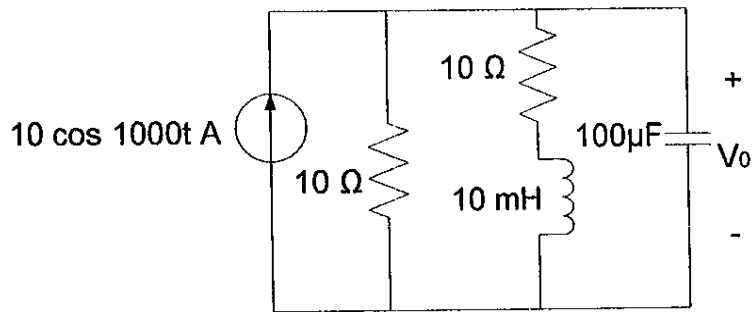


Fig. 4

5. Consider the circuit shown in Figure 5. The input to the circuit is the voltage of the voltage source, 24V. The output of this circuit, the voltage across the 6Ω resistor, is given by $V_0(t) = 12 - 6e^{-0.35t}$ V when $t > 0$. Determine the values of the inductance, L , and of the resistances, R_1 and R_2 . (20%)

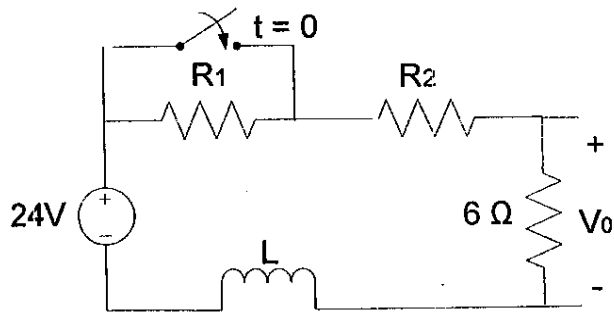


Fig. 5