

大同大學 101 學年度轉學入學考試試題

考試科目：電路學

所別：電機工程學系

第 全 頁

註：本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

- (1) Use superposition method to find v_o in the circuit of Figure 1.

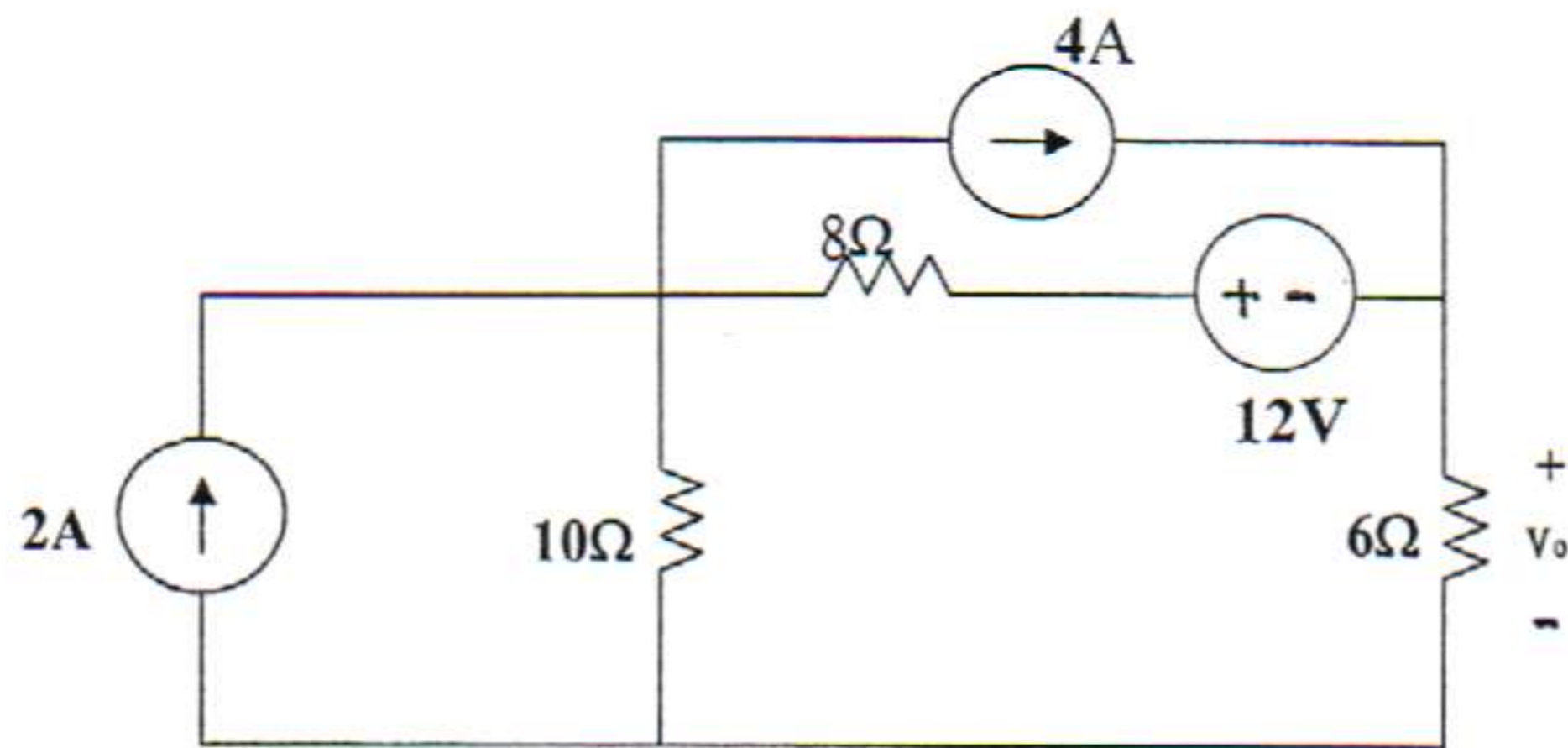


Figure 1

- (2) Consider the circuit in Figure 2. Find: (a) $i_1(t)$ and $v_o(t)$ if $i_s = 3e^{-t}$ mA, (b) energy stored in the 20-mH inductor at $t = 1$ s.

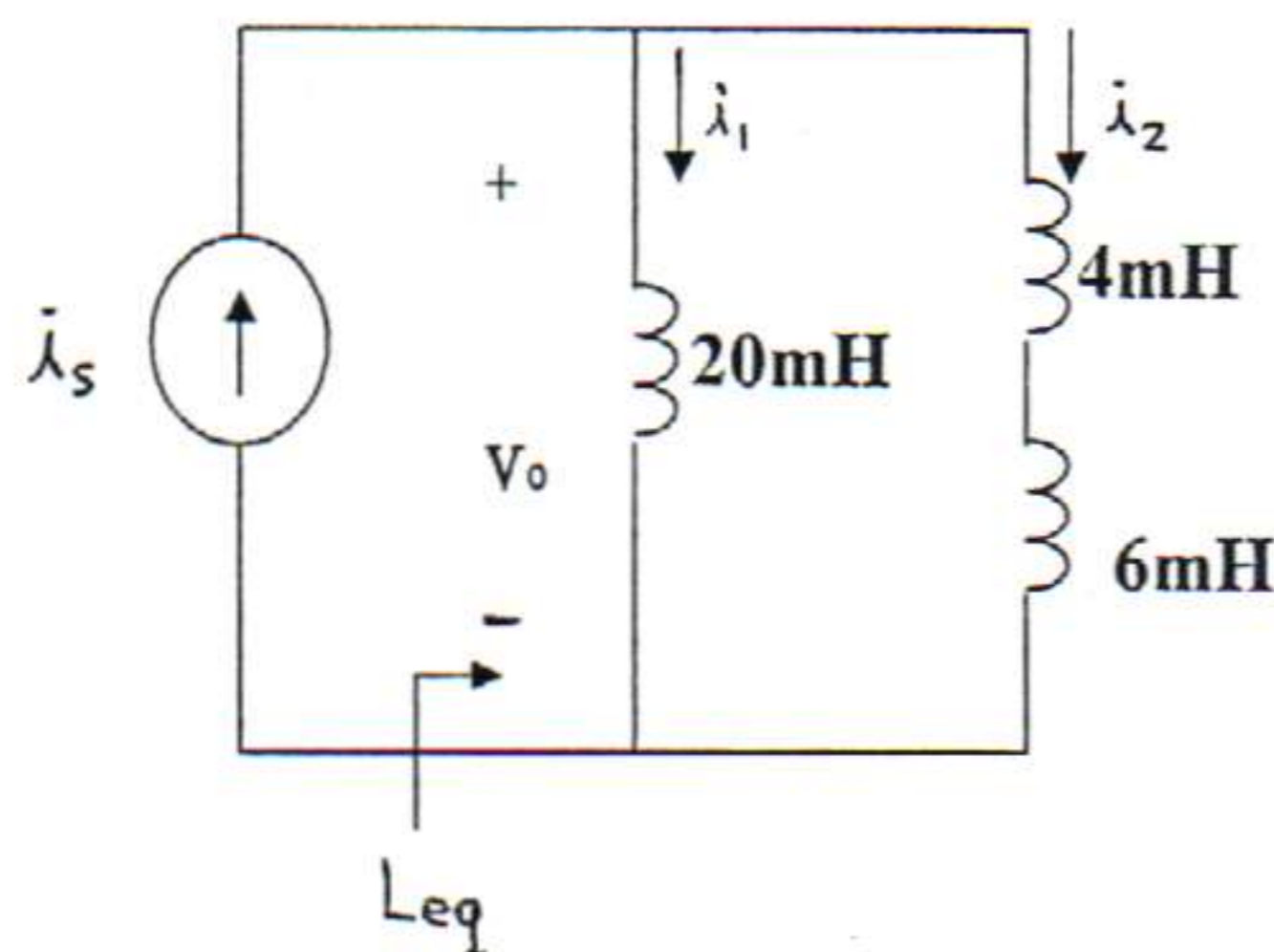


Figure 2

- (3) Find v_o in the circuit of Figure 3 when $v_s = 6u(t)$ (where $u(t)$ is step function). Assume that $v_o(0) = 1$ V.

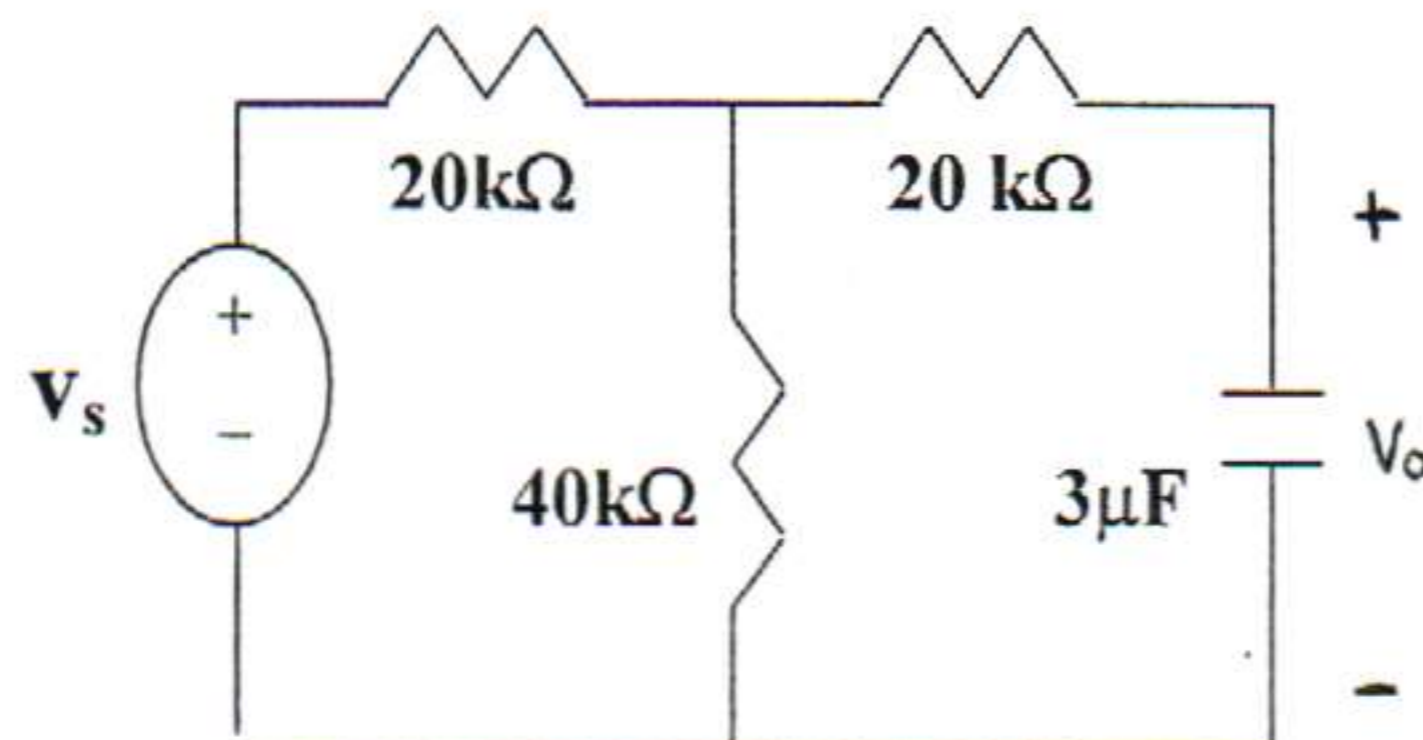


Figure 3

- (4) For the circuit in Figure 4, determine the turns ratio n that will cause maximum average power transfer to the load. Calculate that maximum average power.

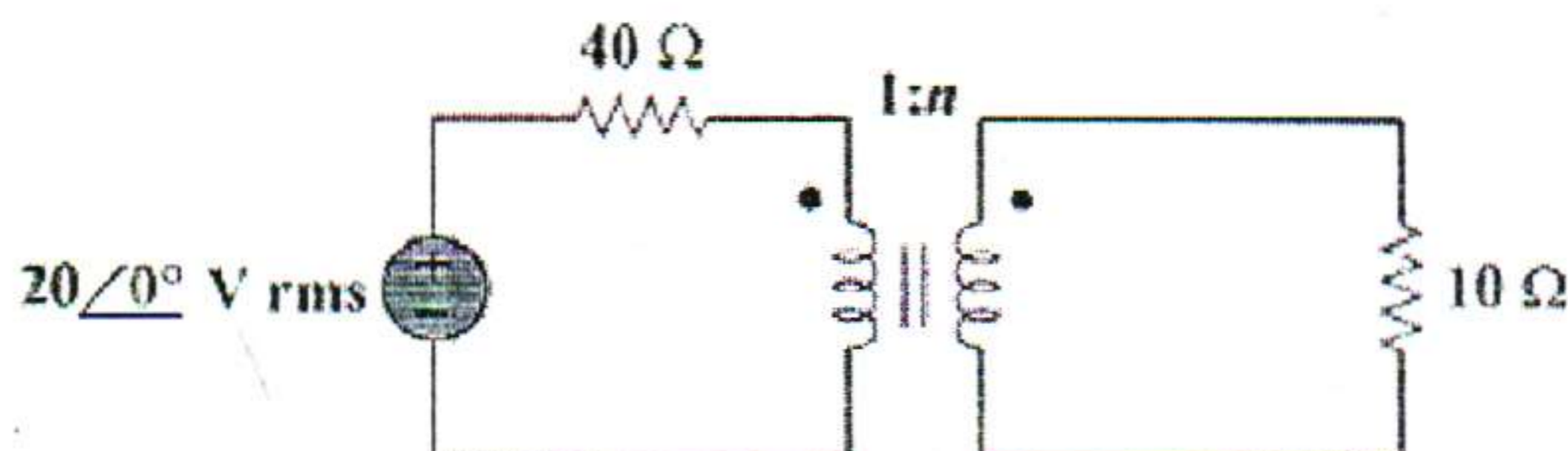


Figure 4