大同大學 107 學年度(暑)轉學入學考試試題

考試科目:電路學　　系別: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)Determine the node voltages v_1, v_2, *and* v_3 in the circuit in Fig. 1. (20%)

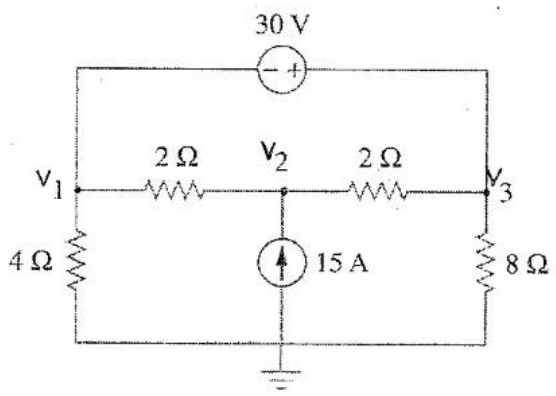

Figure 1

(2)Find the Thevenin equivalent of the circuit in Fig. 2. (20%)

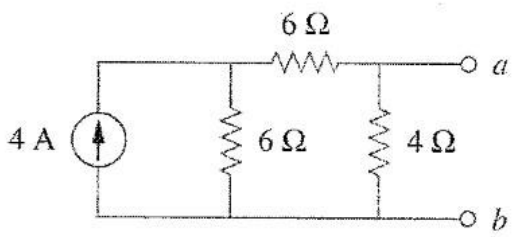

Figure 2

(3)In Fig. 3, let $v_C = 15$ V. Find v_C, v_x, and i_x for $t > 0$. (20%)

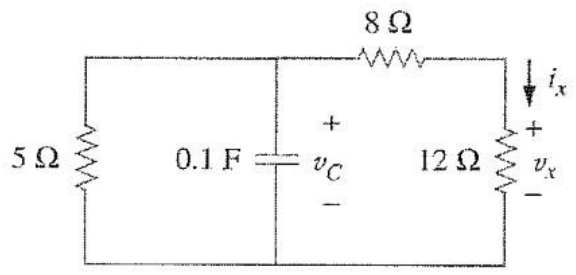

Figure 3

(4)For Find $v(t)$ and $i(t)$ in the circuit shown in Fig. 4. (20%)

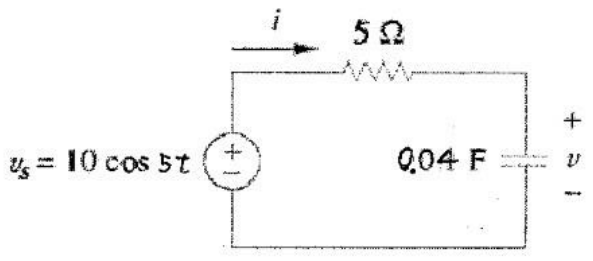

Figure4

$v_s(t)$=10cos5t, C=0.04 F, R=5 ohm

(5) The voltage across a 200-mH inductor is given by $v(t) = 3t^2 + 2t + 4$ V, for $t > 0$. Determine the current $i(t)$ through the inductor. Assume that $i(0) = 1$ A. (20%)