

# 大同大學 102 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； 可以 使用計算器。

(1). In Fig. 1, calculate the power supplied by each source ( $P_{V_s}$  and  $P_{i_s}$ ).

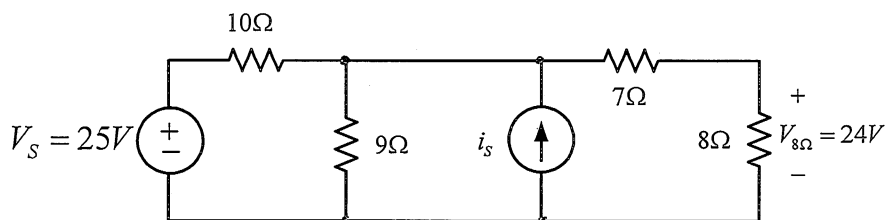


Fig. 1

(2).

(a) Obtain the Norton equivalent circuit at terminal a-b for the circuit in Fig. 2.

(b) When  $R = \frac{5}{6}\Omega$ , find the current  $i$ .

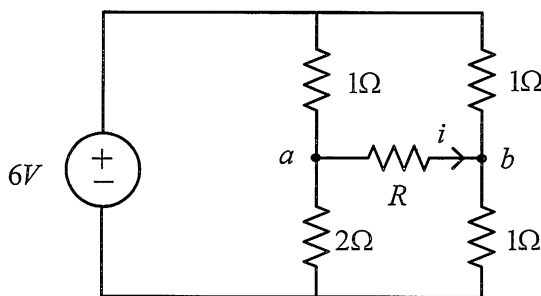


Fig. 2

(3). Find  $V_2(t)$  in Fig.3 when  $V_1(t) = 10 \cos 30t + 10 \cos 300t$ ,  $R = 8\Omega$ , and  $L = 0.2H$ .

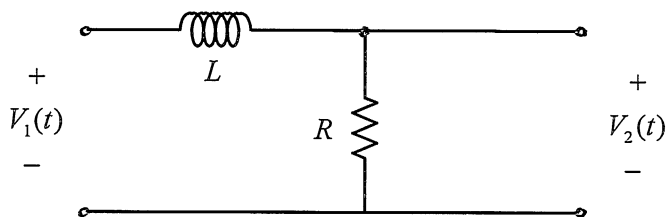


Fig.3

(4). Find the Z parameters for the two-port in Fig. 4.

$$\begin{cases} V_1 = Z_{11}i_1 + Z_{12}i_2 \\ V_2 = Z_{21}i_1 + Z_{22}i_2 \end{cases}$$

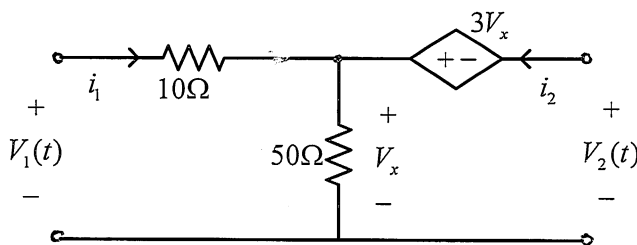


Fig. 4