

國立臺北科技大學九十五學年度碩士班招生考試

系所組別：1620 電機工程系碩士班乙組

第一節 電路學 試題

填准考證號碼

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第一頁 共二頁

注意事項：

1. 本試題共六題，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

1. Please find v_x and i_y in the circuit shown in Fig. 1. 15%

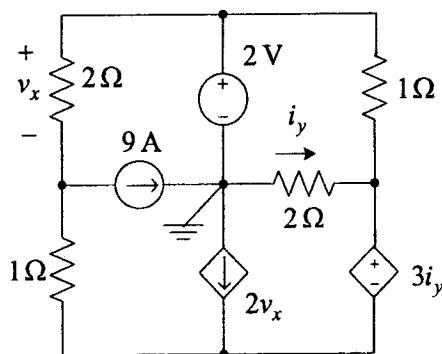


Fig. 1

2. Please find the Thevenin and Norton equivalent circuits of the network of Fig. 2 at terminals $a-b$. 10%

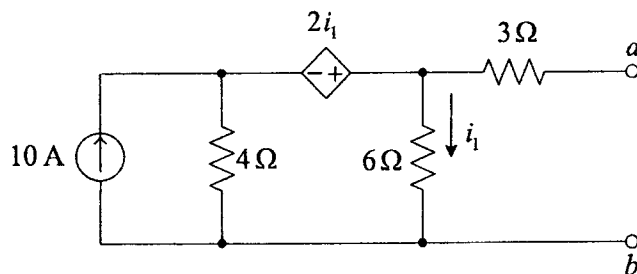


Fig. 2

3. Please find the graph and any five trees of the circuit shown in Fig. 3, illustrate the links associated with the five trees, and verify that the number of links in the graph is $B - N + 1$, where B is the number of branches and N is the number of nodes. 25%

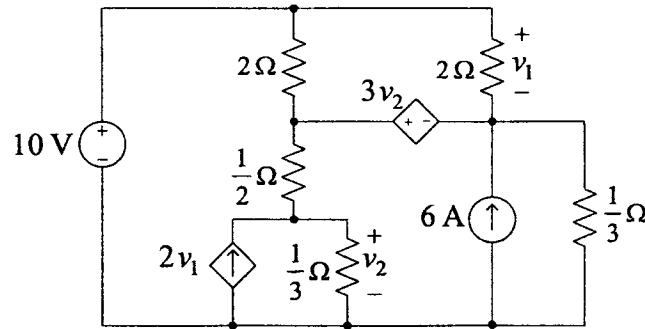


Fig. 3

4. Please find the complete response v , $t > 0$, in the circuit of Fig. 4 if $v_1(0) = v(0) = 0$ and $v_g = 5\cos 2000t$ V. 15%

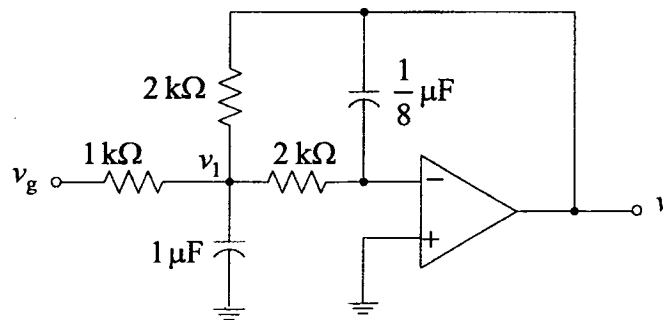


Fig. 4

5. Please find the forced response i in the circuit of Fig. 5 if the source voltage is given by
 $v = 4$ V , $0 < t < 1$ s
 $v = 0$ V , 1 s $< t < 4$ s
 $v(t + 4) = v(t)$.
 20%

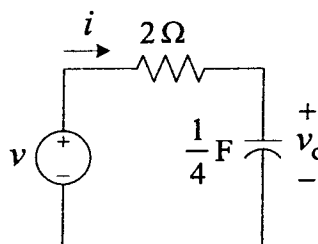


Fig. 5

注意：背面尚有試題

6. Please find the transfer function V_2/V_g in the circuit of Fig. 6. 15%

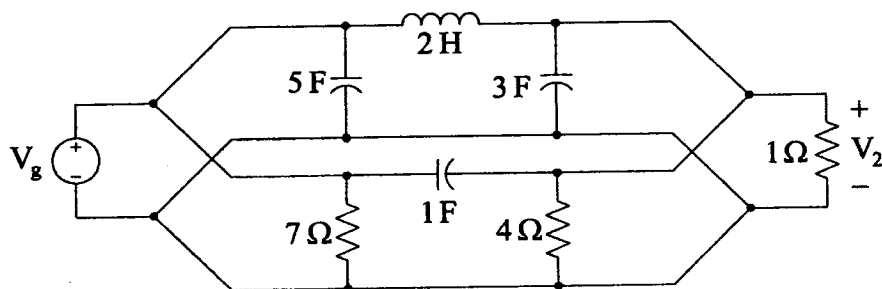


Fig. 6