

淡江大學九十四學年度轉學生招生考試試題

系別：電機工程學系三年級 科目：電 路 學

准帶項目請打「V」	
V	簡單型計算機

節次： 7 月 13 日 第 3 節
本試題共 1 頁

1. The switch in the circuit of Fig. 1 has been closed for a long time. It is opened at $t = 0$. Find $v_o(t)$ for $t > 0$. (25%)

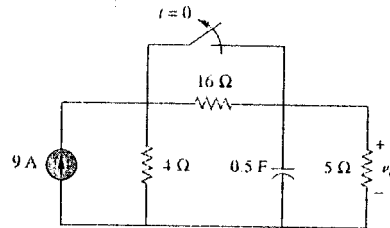


Fig. 1

2. Find the complete response $i(t)$ for $t > 0$ in the circuit of Fig. 2. (25%)

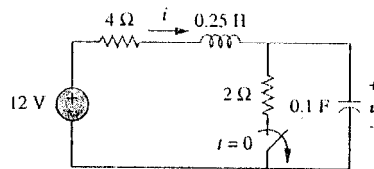


Fig. 2

3. In the circuit of Fig. 3, let $R_1 = R_2 = 1 \Omega$, $C_1 = 0.2 \text{ F}$, and $C_2 = 0.1 \text{ F}$. (25%)
 (a) Find $\mathbf{H}(j\omega) = \mathbf{V}_o(j\omega)/\mathbf{V}_i(j\omega)$
 (b) Find the frequency response. (i.e., plot the magnitude and phase of $\mathbf{H}(j\omega)$ versus ω , respectively.)

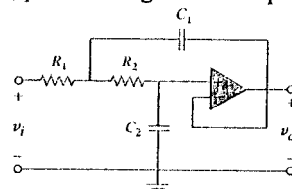


Fig. 3

4. Find the complete response $v_o(t)$ for $t > 0$, in the circuit of Fig. 4 if $v_s(t) = 10u(t) \text{ V}$ and $v_c(0) = -5 \text{ V}$. (25%)

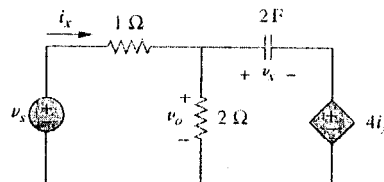


Fig. 4