

# 淡江大學八十九學年度日間部轉學生招生考試試題

49

系別：電機工程學系三年級

科目：電路學

本試題共 / 頁

1. (Fig. 1) Find the steady-state value of  $v_2(t)$ .  
25%

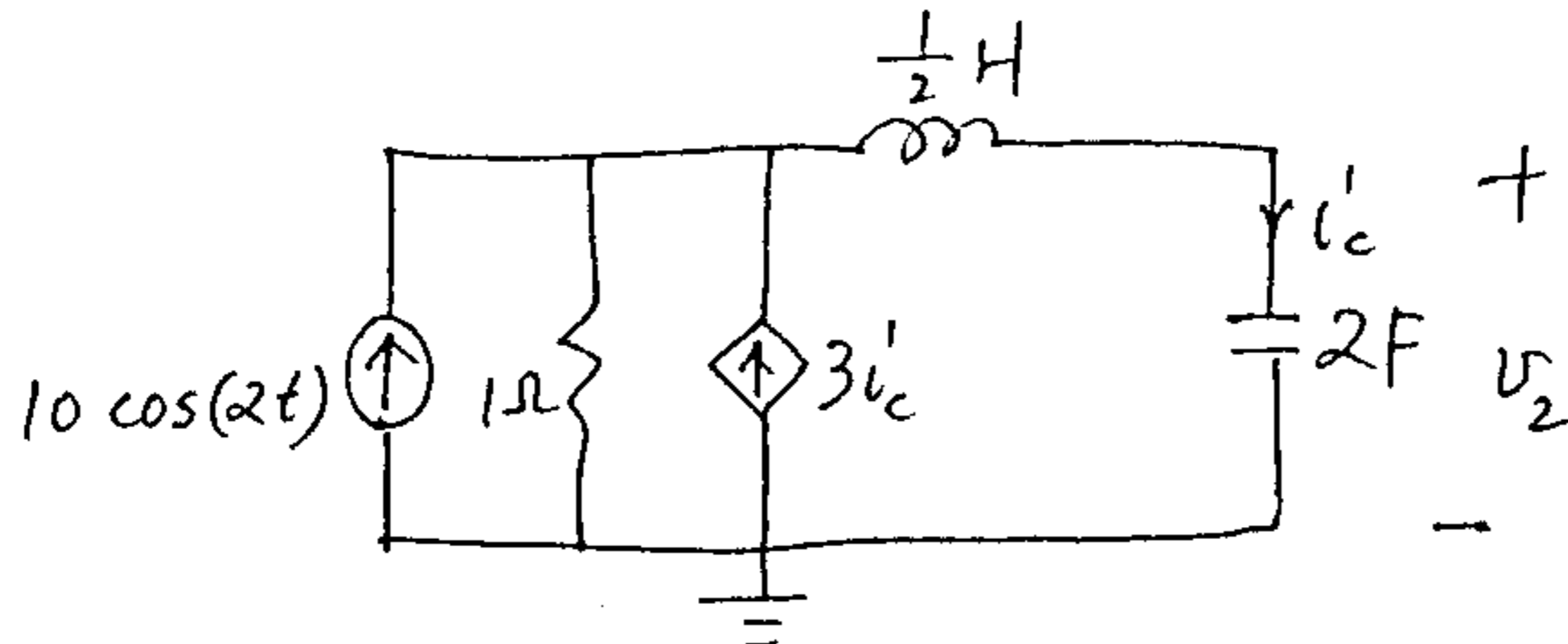


Fig. 1

2. (Fig. 2) Plot the magnitude and phase verse  $\omega$  for the network function  $H(j\omega) = V_2(j\omega)/V_1(j\omega)$ . Also find the 3-db frequency,  $\omega_{3db}$ .  
25%

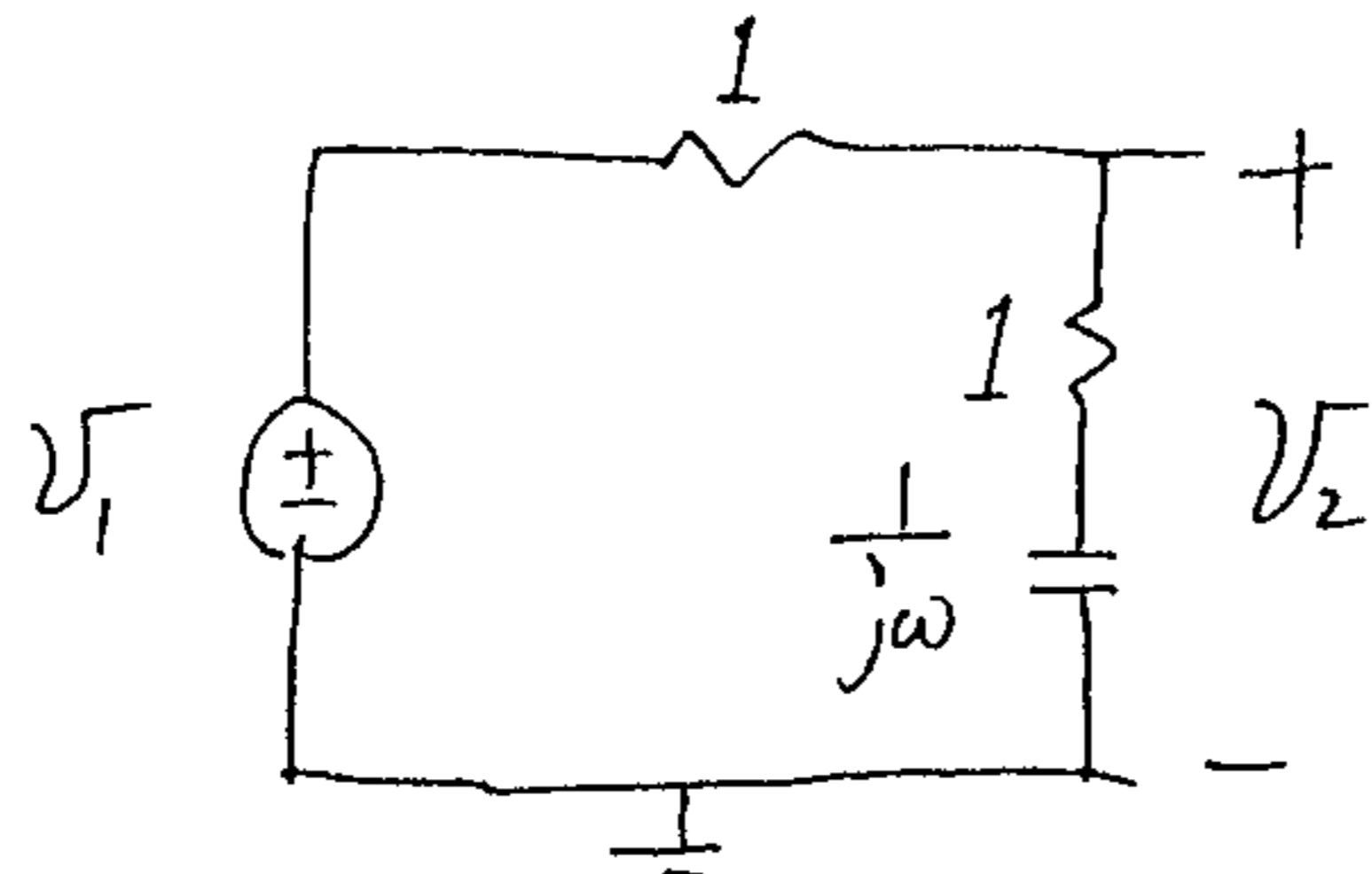


Fig. 2

3. (Fig. 3) (a) Find the network function  $H(s) = V_2(s)/V_1(s)$ .  
(b) If  $v_1(t) = 5e^{-t}u(t)$ , find  $v_2(t)$ .  
25%

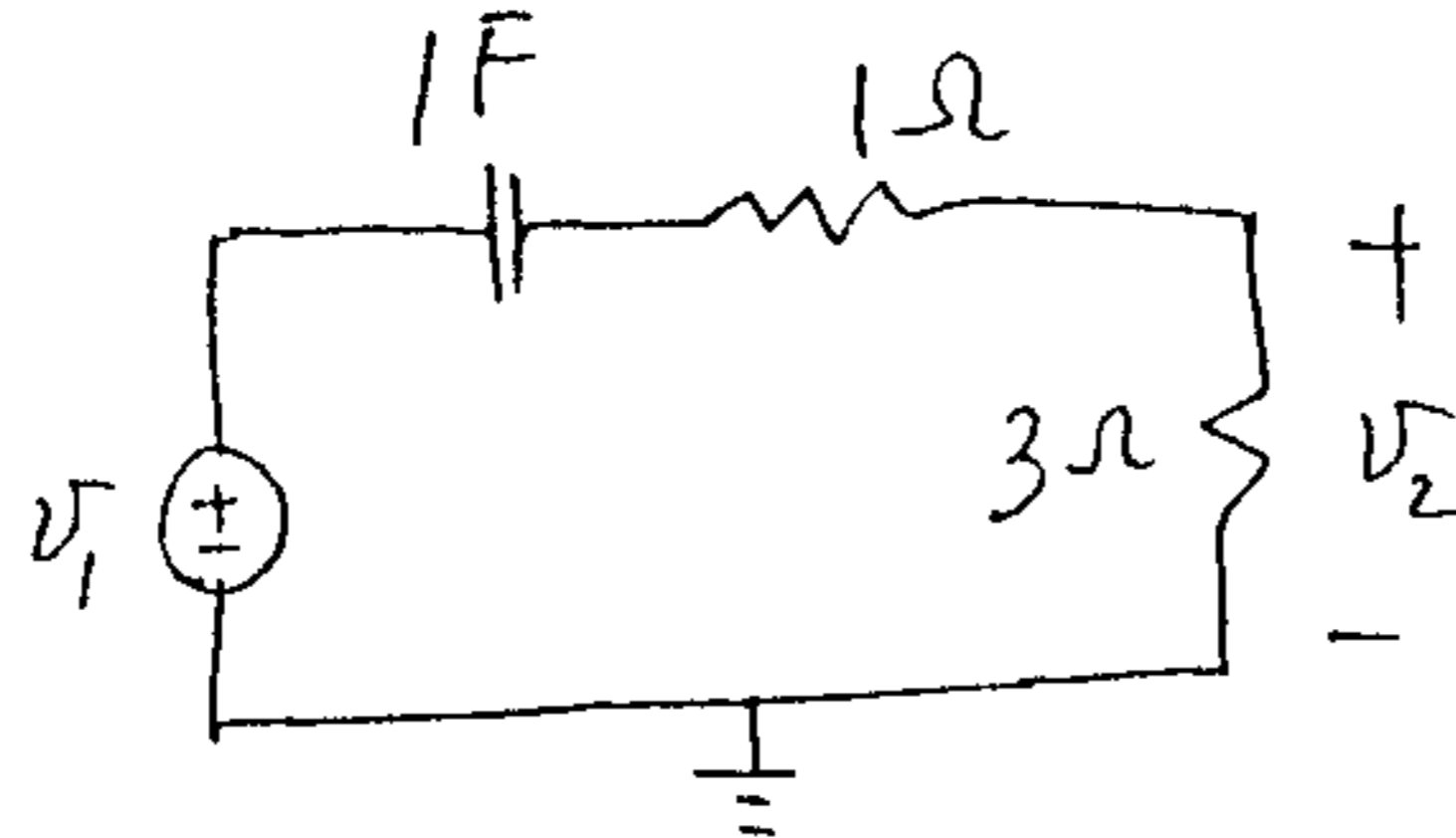


Fig. 3

4. (Fig. 4) The switch is moved from  $a$  to  $b$  at  $t = 0$ . The circuit is in a steady state for  $t < 0$ . Find  $i_L(t)$ ,  $t > 0$ .  
25%

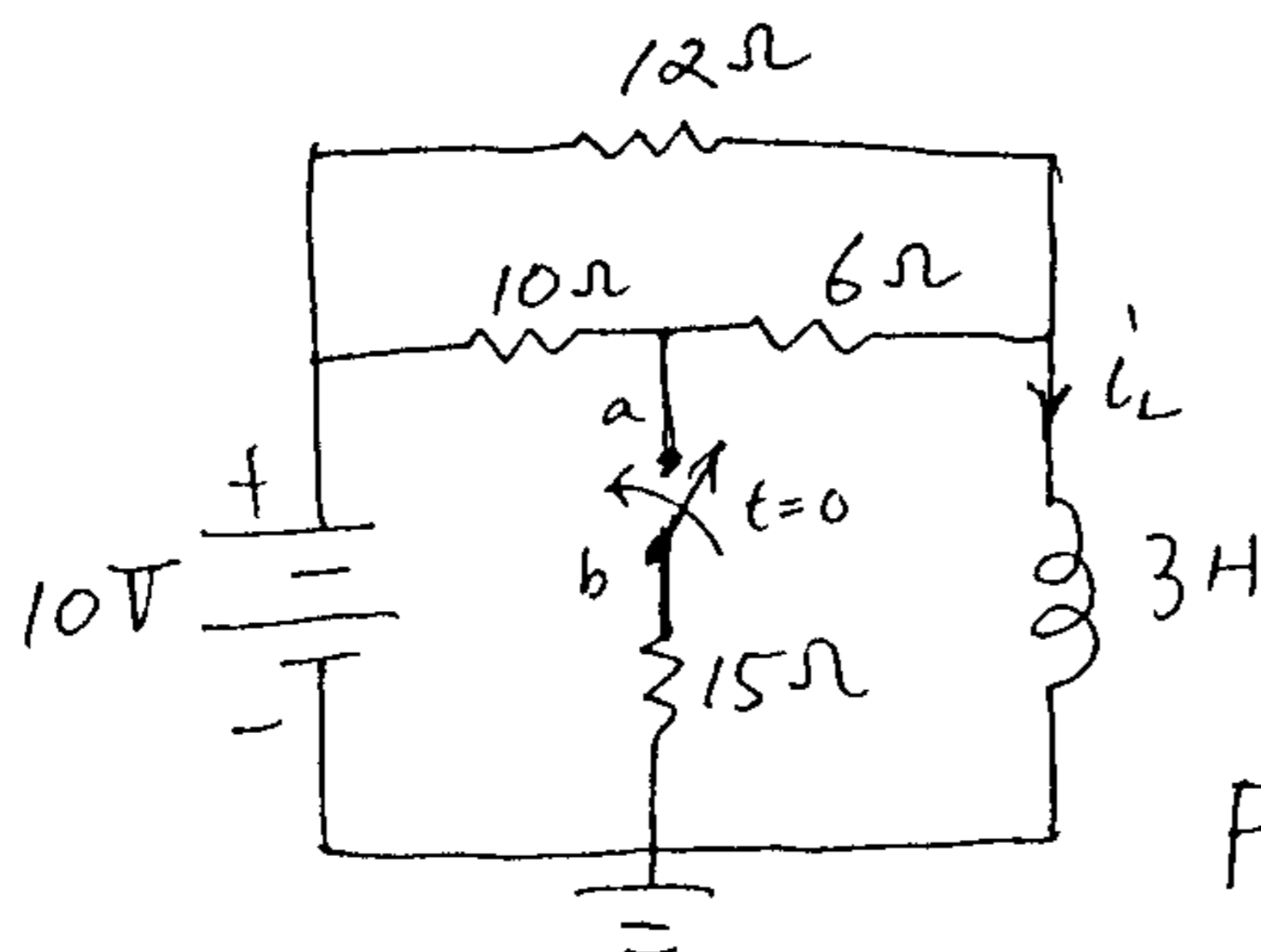


Fig. 4