

淡江大學八十九學年度碩士班招生考試試題

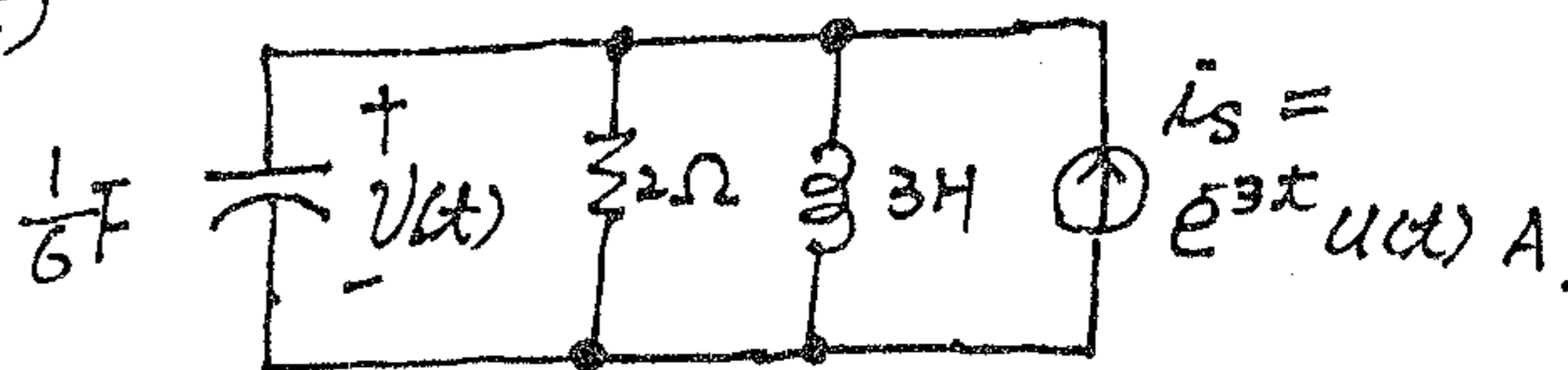
系別：電機工程學系

科目：電路學

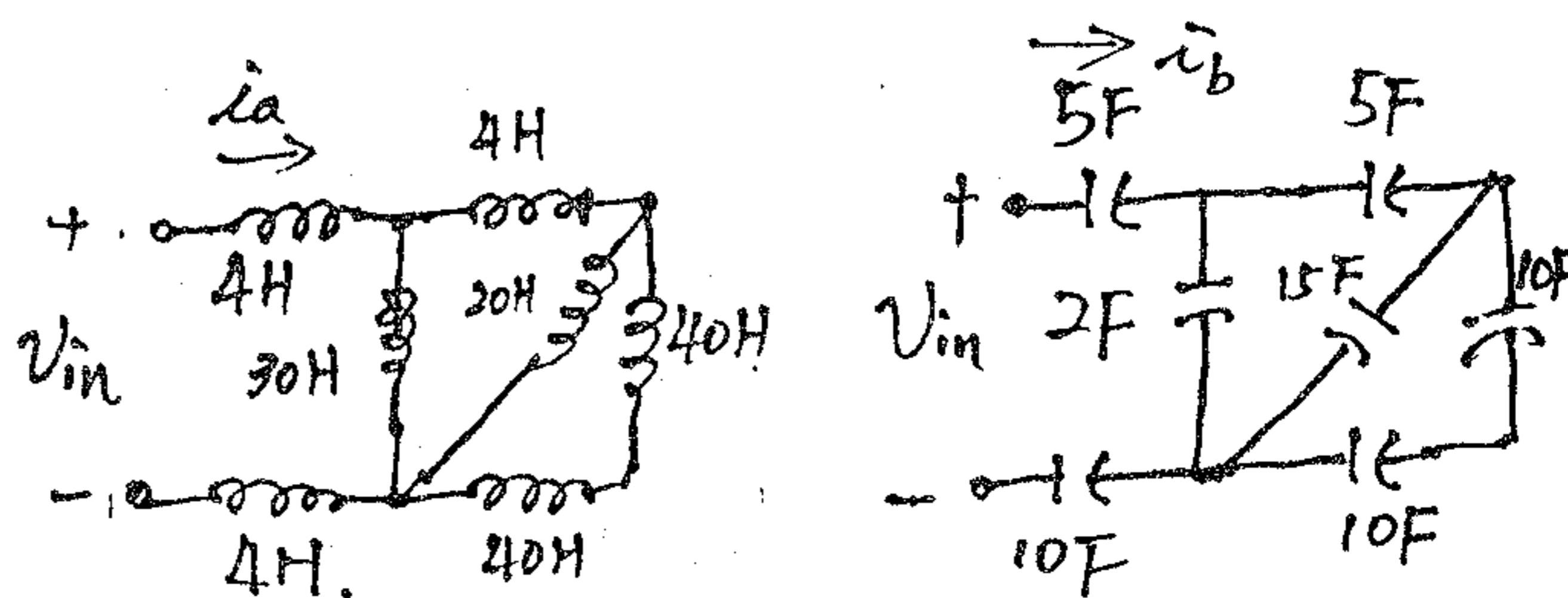
本試題共 2 頁 1/2

本試題雙面印製

1. Determine the particular response $v(t)$ for $t > 0$ in the second-order circuit.



2. Calculate the current i_a and i_b if $V_{in} = 40 e^{5t}$



3. The differential equation relating the input $i(t)$ to the output $v(t)$ of a circuit is

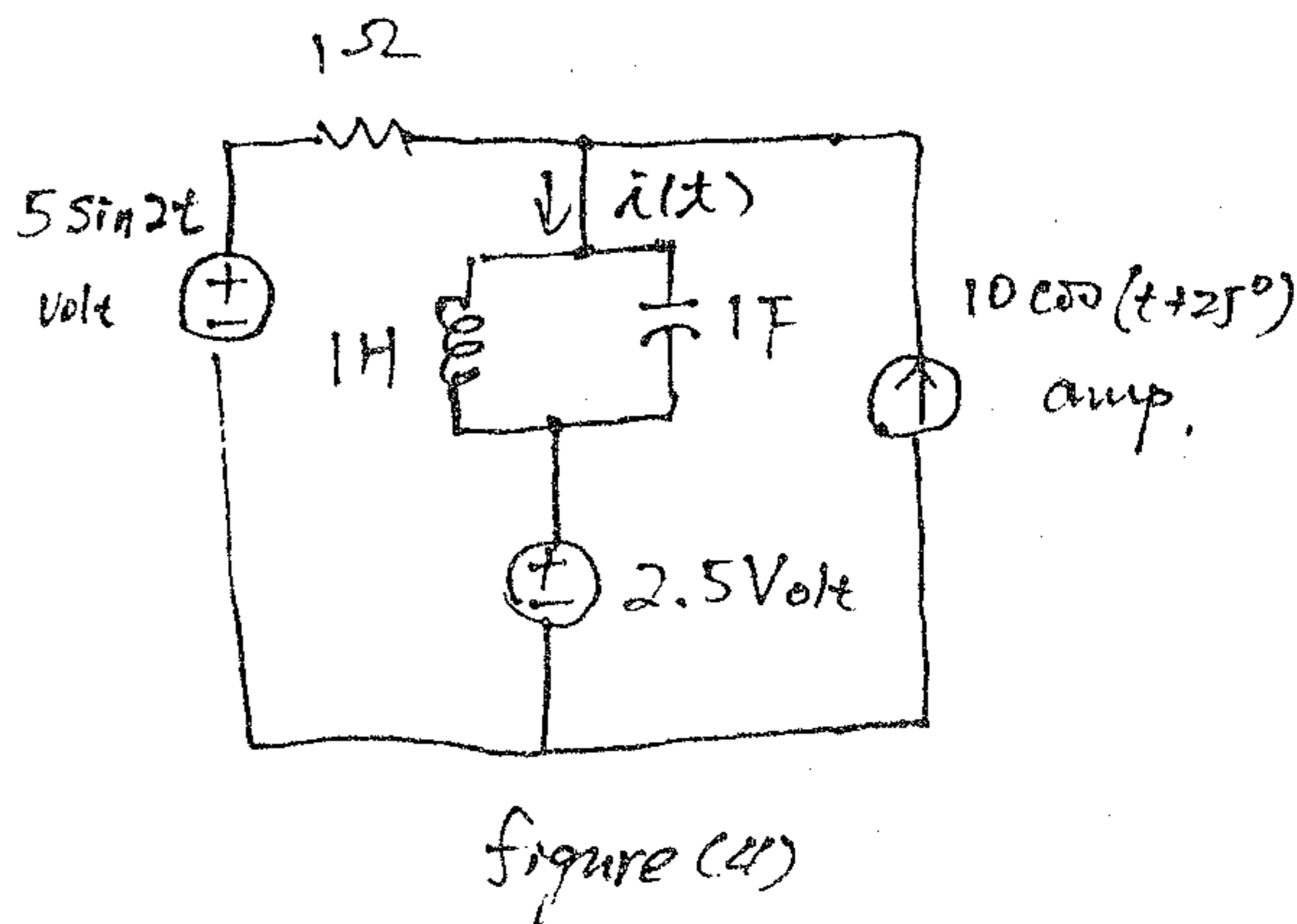
$$\frac{d^2}{dt^2} v + 4 \frac{d}{dt} v + 3v = \frac{d}{dt} i + 2i$$

find the impulse response $h(t)$ of this circuit

4. The current $i(t)$ in figure (4) is

$$i(t) = A \sin(Bt + \angle C^\circ) - D \text{ (amp)}$$

find A, B, C, and D



淡江大學八十九學年度碩士班招生考試試題

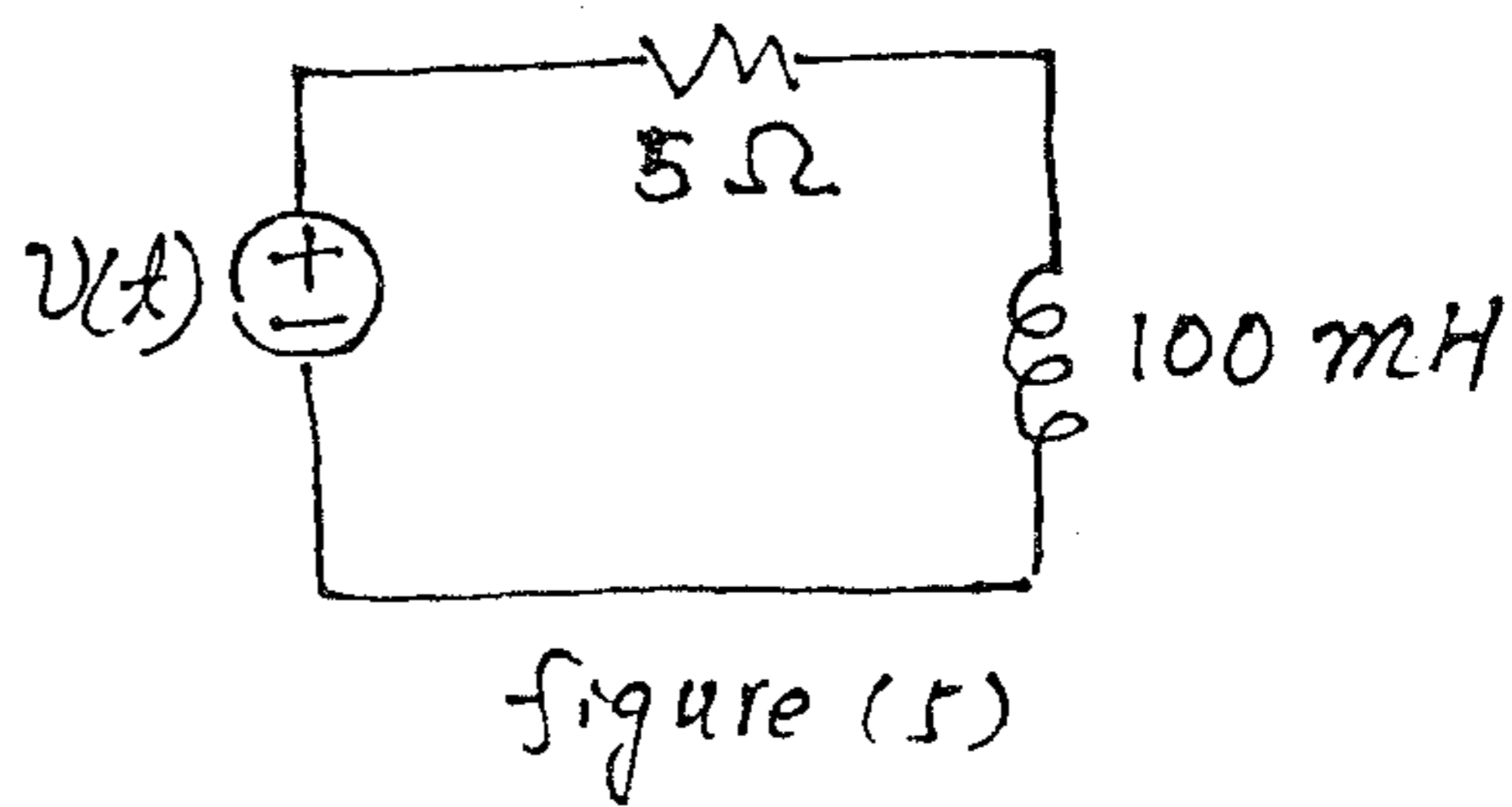
系別：電機工程學系

科目：電路學

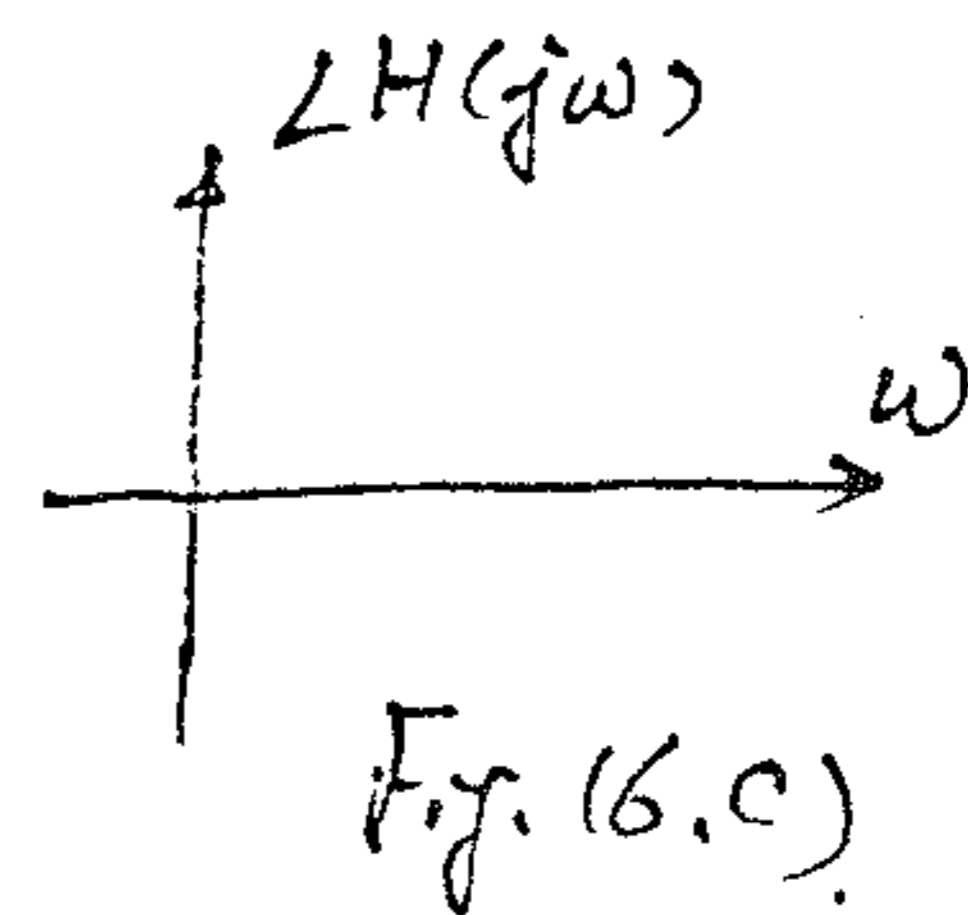
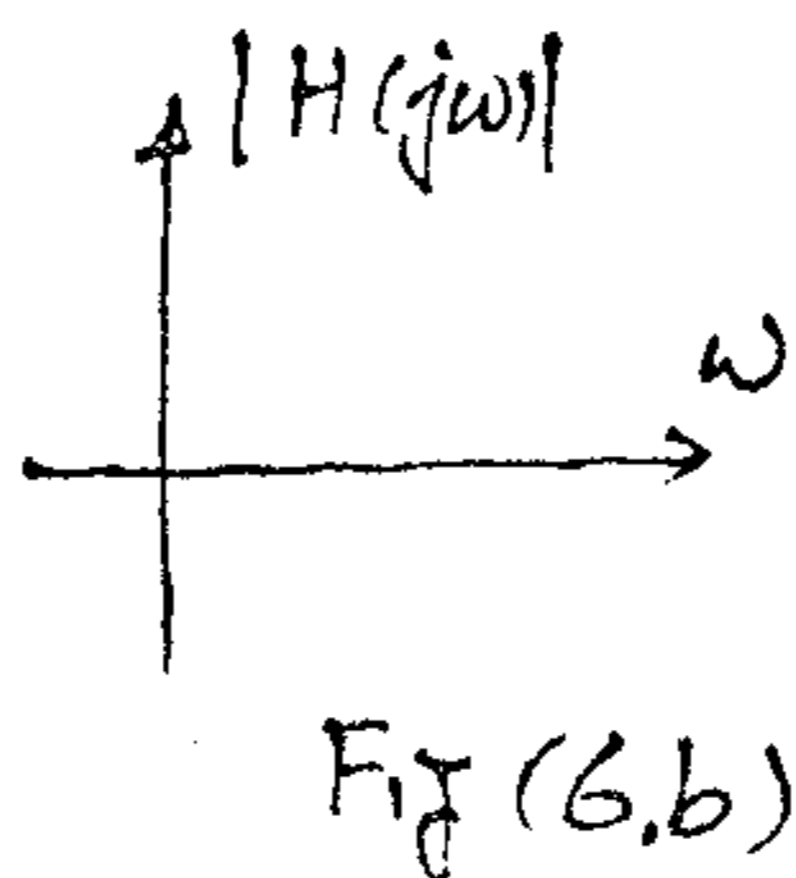
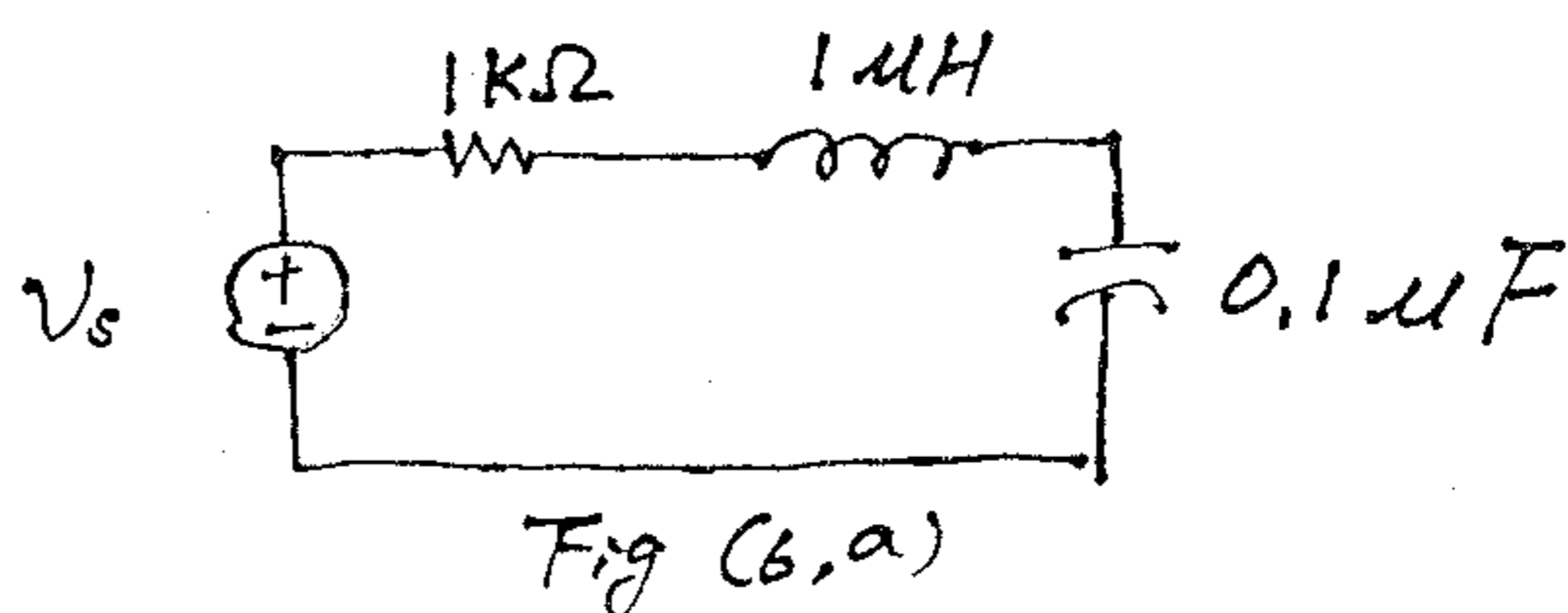
本試題共 2 頁 $\frac{1}{2}$

本試題雙面印製

5. The circuit shown in figure (5)
 10% $v(t) = 10 \cos 10t$, find the
 (a) power delivered to the resistor
 (b) average power delivered by the source



6. For the circuit shown in figure (6, a)
 20% find the voltage transfer function
 $H(j\omega) = ?$
 and show the frequency response characteristics as in figures (6, b) & (6, c)



7. For the circuit shown in figure (7, a)
 10% find the frequency response characteristics as in figures (7, b) & (7, c)

