

淡江大學八十七學年度碩士班入學考試試題

系別：電機工程學系

科目：電路學

本試題共 2 頁

1.
20% Solve for the currents I_1 and I_2 shown in the network of Fig. 1.

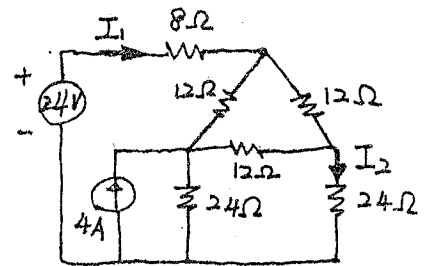


Fig. 1.

2.
10% Find the equivalent inductance at the terminals ab for the circuit shown in Fig. 2.

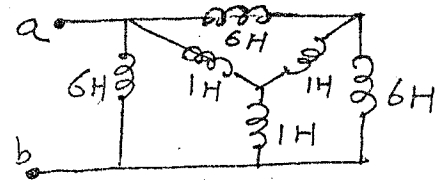


Fig. 2.

3.
20% For the circuit shown in Fig. 3, calculate the current supplied by the voltage source and the voltage across the current source.

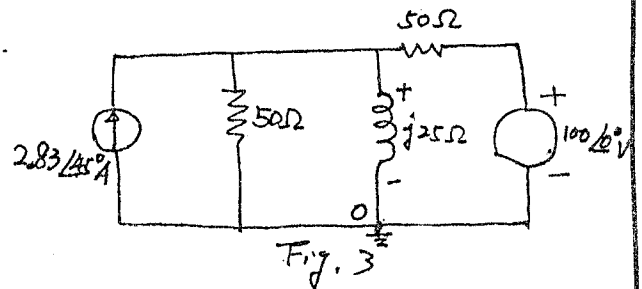


Fig. 3.

4.
20% For the circuit shown in Fig. 4, find (a) $i_1(t)$ for $t > 0$ and (b) Determine $i_2(t)$ at $t = 0.1s$.

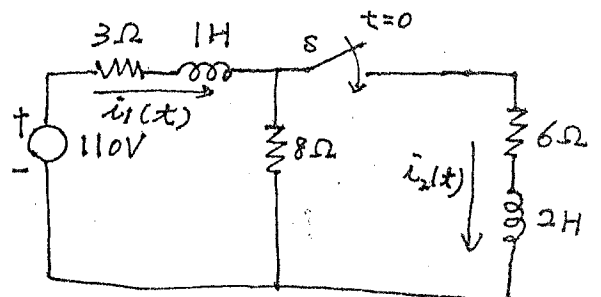


Fig. 4.

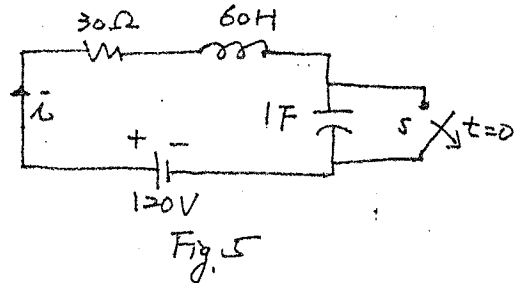
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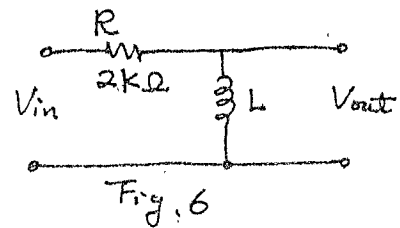
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5. In the circuit of Fig. 5,
10% Switch S is opened at $t=0$.
Determine $I(s)$



6. The RL high-pass filter shown
10% in Fig. 6 having a cutoff frequency
of 2 kHz. Find $L = ?$ mH



7. Find the input impedance of the
10% circuit shown in Fig. 7

