

# 國立虎尾科技大學 109 學年度第 1 學期博士班資格考試題

系別：動力機械工程系機械與機電工程博士班

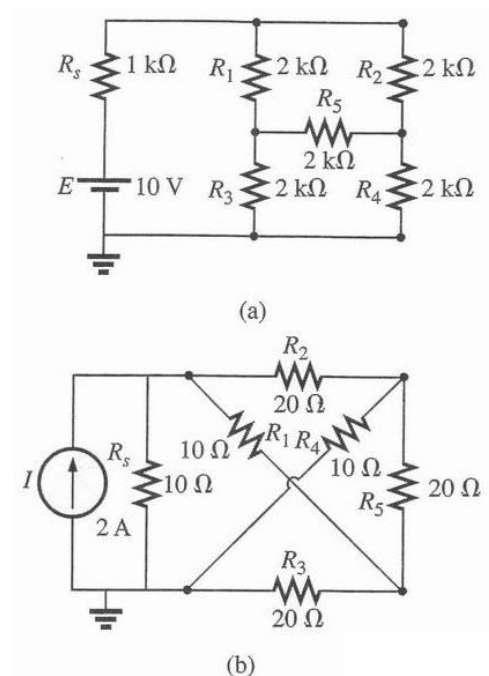
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科目：電路學

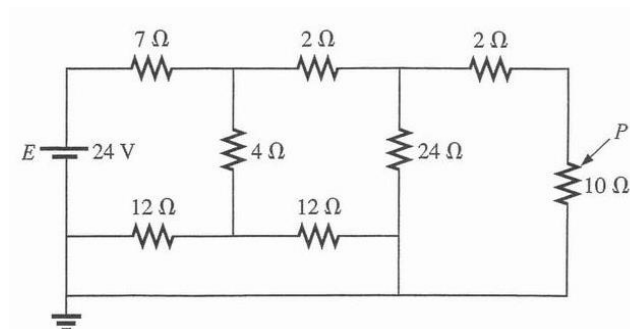
注意事項：

- (1) 本試題共有 10 題，每題 10 分，合計一百分。
- (2) 請依序作答於答案卷上並註明題號，若未註明選答題號及超過規定題數時，謹採計作答順序較前之題目計分。
- (3) 可使用計算機 close book

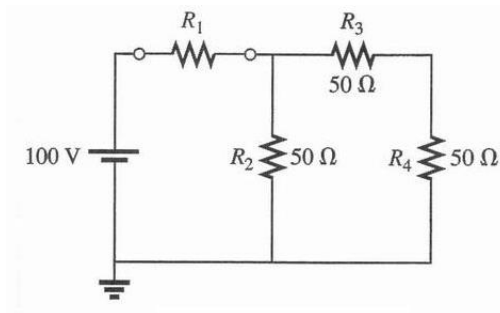
1. Find the current through the  $R_s$



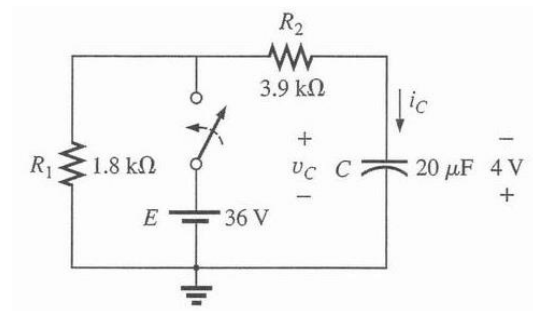
2. Find the power  $P$  from 10  $\Omega$



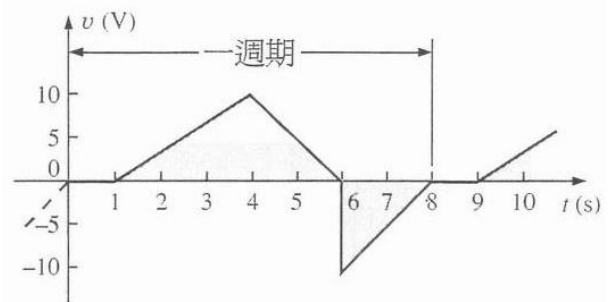
3. Find  $R_1$  such that the  $R_4$  will receive maximum power



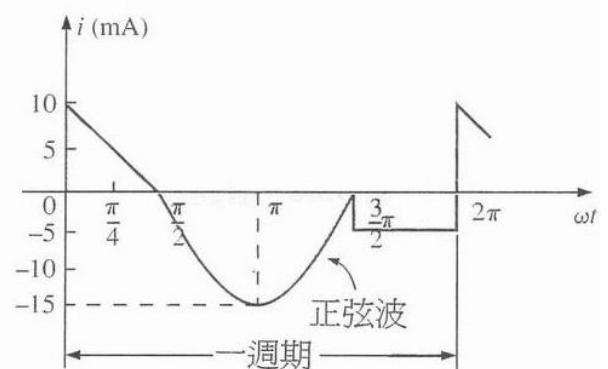
4. The  $C$  is initially charged to 4V with the polarity shown. Write the mathematical expressions for the  $v_C$  and  $i_C$  when the switch is closed.



5. Find the average value of the periodic waveform in Fig. over one full cycle.

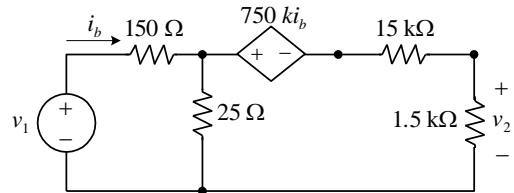


(a)

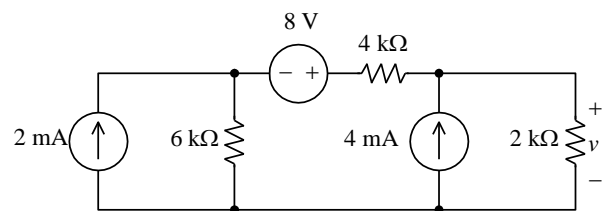


(b)

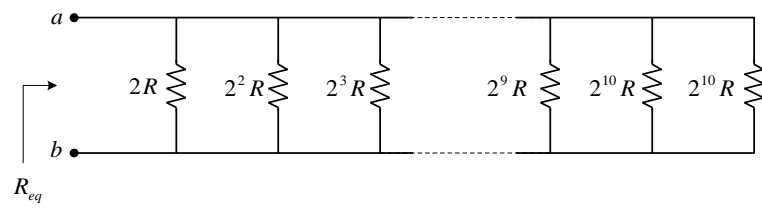
6. Find  $\frac{v_2}{v_1}$



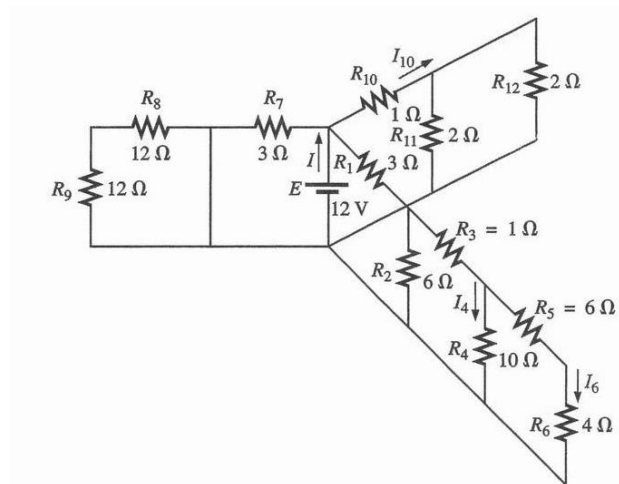
7. Find  $v$



8. Find  $R_{eq}$



9. Find  $I$  and  $I_4$



10. Find  $R_1$

