

# 國立虎尾科技大學 107 學年度第一學期博士班資格考試題

系別：動力機械系機械與機電工程博士班

科目：電路學

注意事項：

- (1) 本試題共有 8 題，答對每題 15 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 exam

1. Determine the values of  $R_1$ ,  $R_2$  and  $R_3$  in Fig. 1 if  $R_2 = 2R_1$ ,  $R_3 = 2R_2$  and the total resistance is  $16\text{k}\Omega$ .

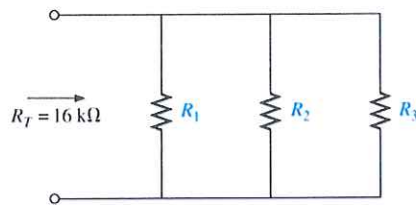


Fig. 1

2. Find the  $I$  for the network of Fig. 2

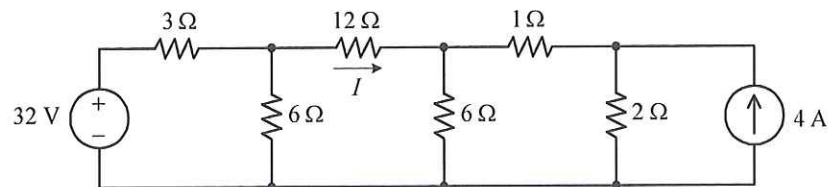


Fig. 2

3. Find the  $I$  for the network of Fig. 3

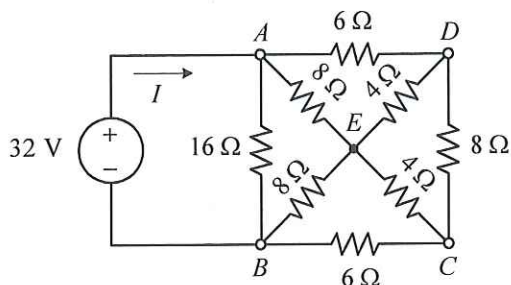


Fig. 3

4. Find the Current flow the  $R$  of Fig. 4 ( $R=5\Omega$ )

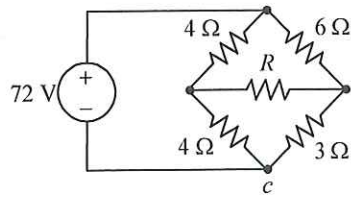


Fig.4

5. if  $v(0) = 0$ , find the  $v(t)$  and  $i(t)$  when  $t > 0$  of Fig.5

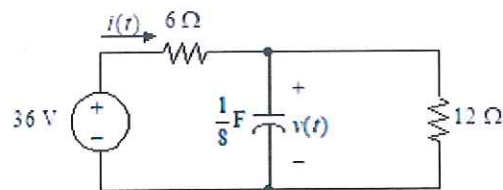


Fig.5

6. if  $i(0^-) = 2\text{ A}$ , find the  $i(t)$  when  $t > 0$  of Fig.6

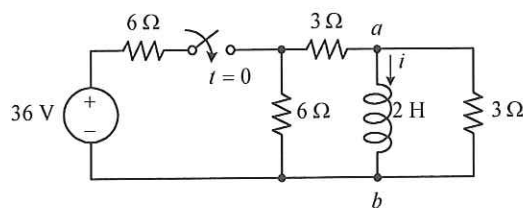
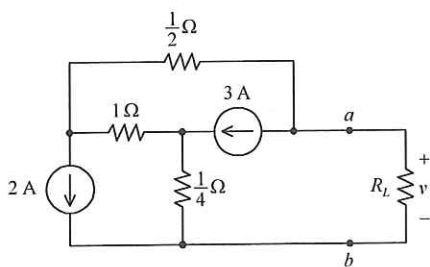


Fig.6

7. Find  $v$  when  $R_L = \frac{1}{3}\Omega$  of Fig.7



8. Find the  $I$  for the network of Fig.8

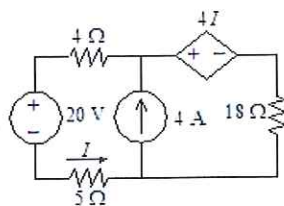


Fig.8