

114EE02

國立臺北科技大學 114 學年度碩士班招生考試

系所組別：2120 電機工程系碩士班乙組

第一節 電路學 試題

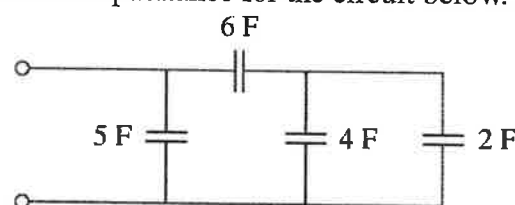
第 1 頁 共 1 頁

注意事項：

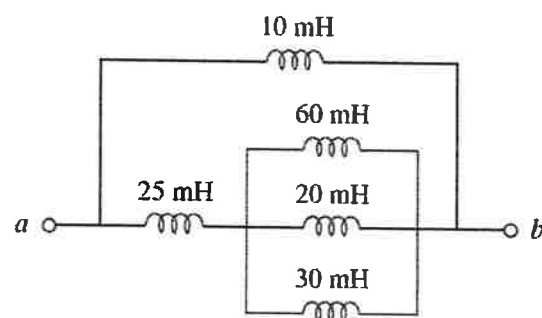
1. 本試題共 5 題，每題 20 分，共 100 分。
2. 不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

1.

- (a) Determine the equivalent capacitance for the circuit below. (10%)

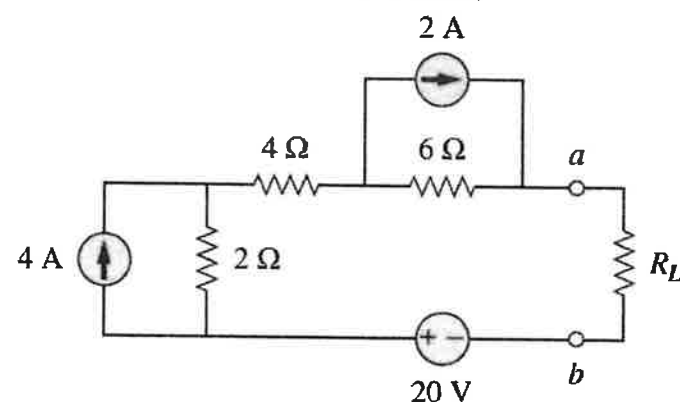


- (b) Determine the equivalent inductance at terminals
- a
-
- b
- of the circuit below. (10%)

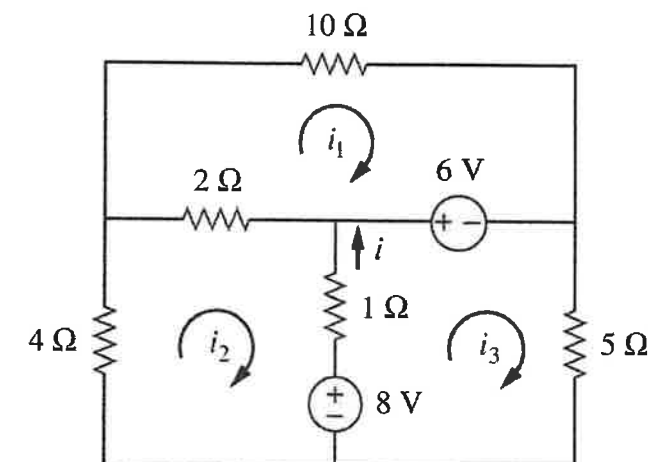


2.

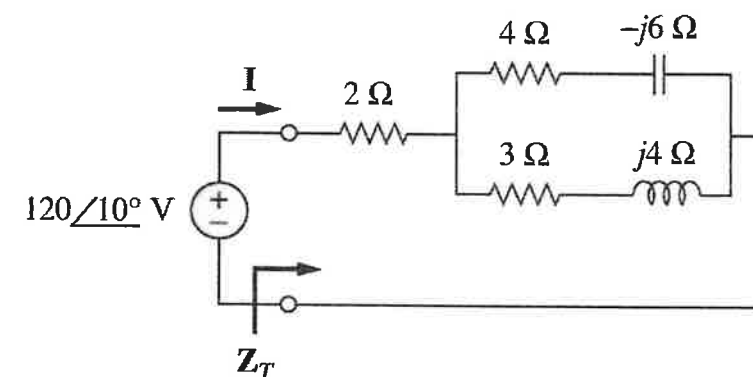
- (a) For the circuit shown below, obtain the Thevenin equivalent at terminals a - b . (10%)
- (b) Find the maximum power deliverable to R_L . (10%)



3. Find
- i_1
- ,
- i_2
- ,
- i_3
- , and
- i
- in the following circuit. (20%)



4. For the circuit shown below, calculate
- Z_T
- and
- I
- . (20%)



5. Consider the circuit below. Use the Laplace transform to find the value of the voltage across the capacitor assuming that the value of
- $v_s(t) = 10u(t)$
- V and assume that
- $i_L(0) = -1$
- A and
- $v_c(0) = +5$
- V. (20%)

