# 國立成功大學 工程科學系 試題

## 電子學 (總分 100 分)

學號_____姓名_____ 2018/04/12

計算題 5 題(100 分，**共三頁**)。**推導過程須要詳細寫出來，若觀念正確，才能斟酌給分。**

1. Assume the op amplifier in Fig.1 is ideal.
   (a) Find the condition of the resistances that makes $A_{cm}$=0. (10%)
   (b) Assume $R_1$= 1kΩ, $R_2$= 2kΩ, $R_3$= 2kΩ and $R_4$= 4kΩ, find the resistance seen by $V_{Icm}$. (10%

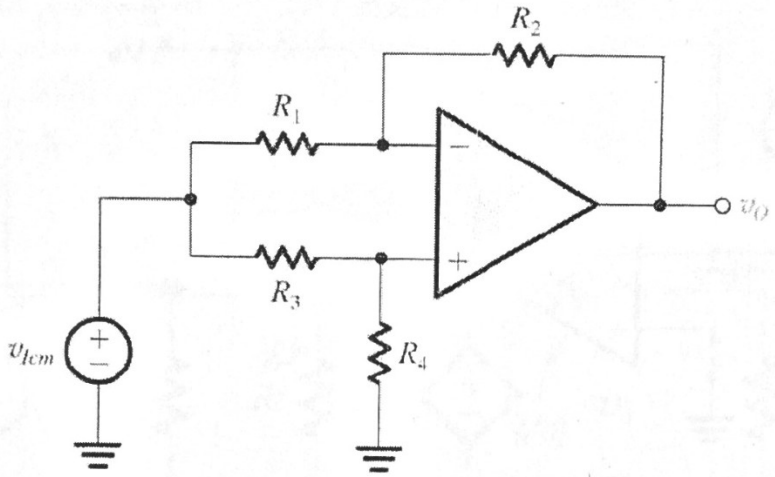


Fig.1

2. Consider the instrumentation amplifier in Fig.2. Let $R_1$ =0.5 kΩ, $R_2$ =0.5 MΩ, $R_3$ = $R_4$ =10 kΩ.
   (a) Find $A_{Id} = v_o/v_{Id}$.($v_{Id} = v_{I2}$-$v_{I1}$) (10%)
   (b) For $v_{I1}$= 5-0.005sinωt and $v_{I2}$= 5+0.005sinωt, find the output voltage.(Hint: $A_{cm}$ = 0) (10%)

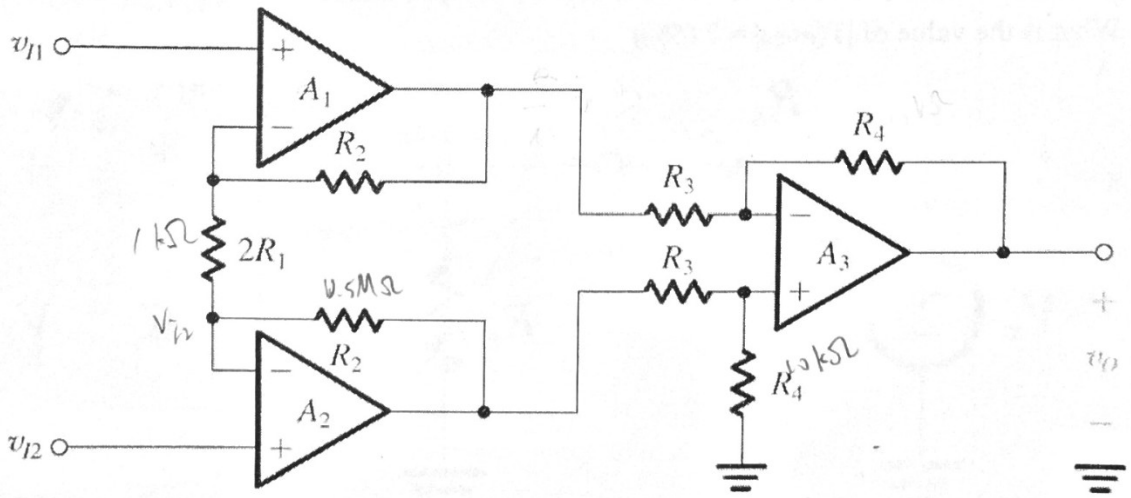


Fig.2

下頁還有題目