

國立高雄應用科技大學

九十七學年度碩士班招生考試

電子工程系（甲組）

准考證號碼 （考生必須填寫）

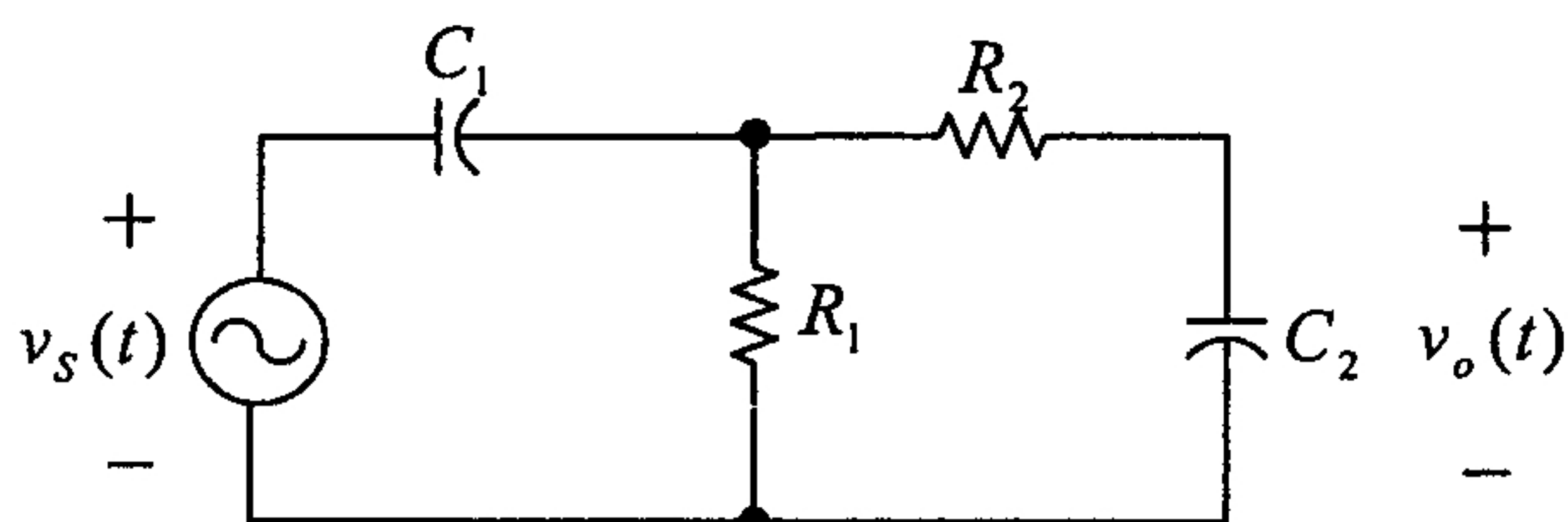
電子學

試題 共 2 頁，第 1 頁

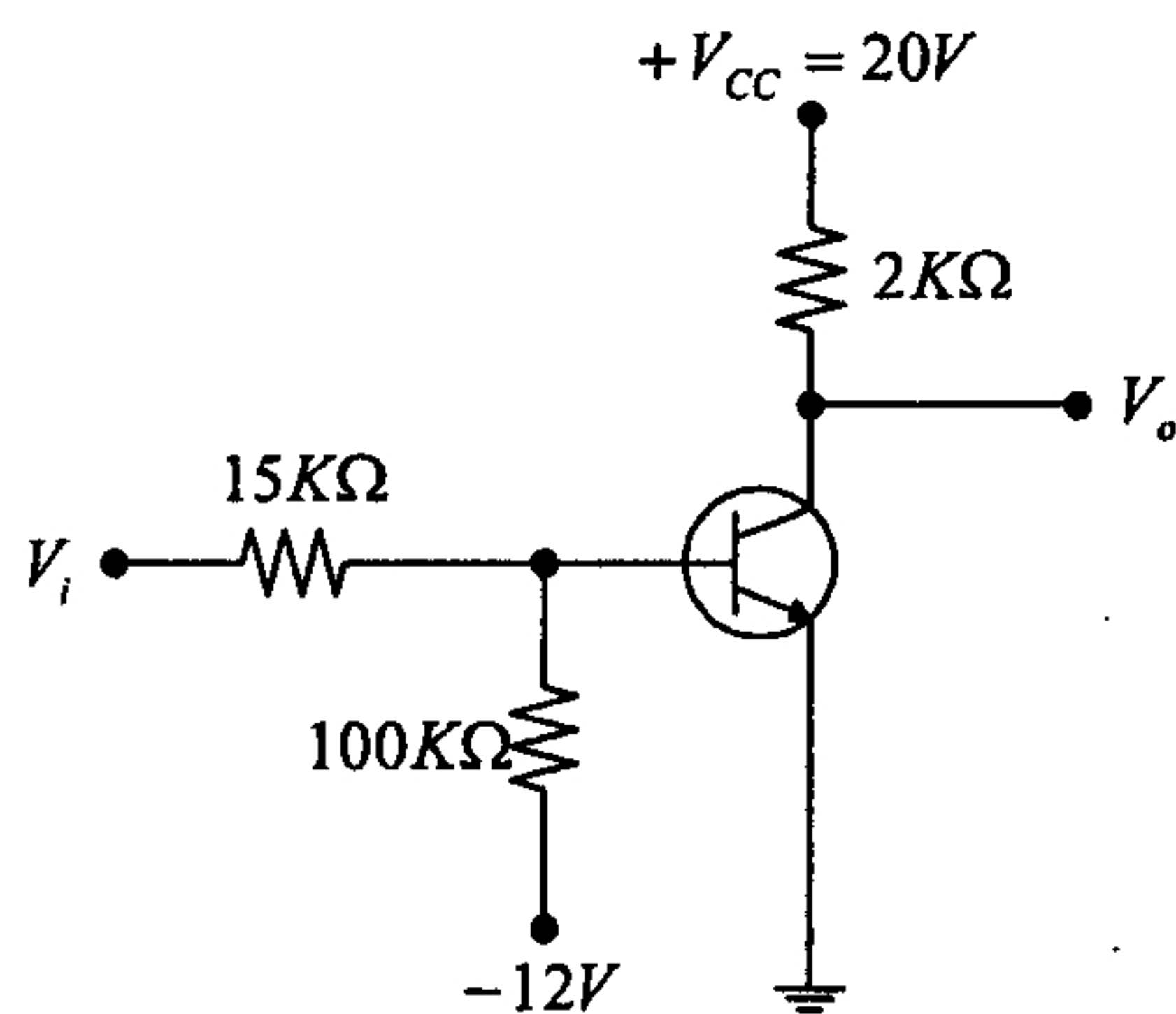
- 注意：a. 本試題共 5 題，每題 20 分，共 100 分。
 b. 作答時不必抄題。
 c. 考生作答前請詳閱答案卷之考生注意事項。

一、(a) Find the transfer function of $A_v(s) = \frac{V_o(s)}{V_s(s)}$

(b) If $A_v(s) = \frac{KS}{1 + a_1S + a_2S^2}$, then find the values of a_1 and a_2 by using time constant method.

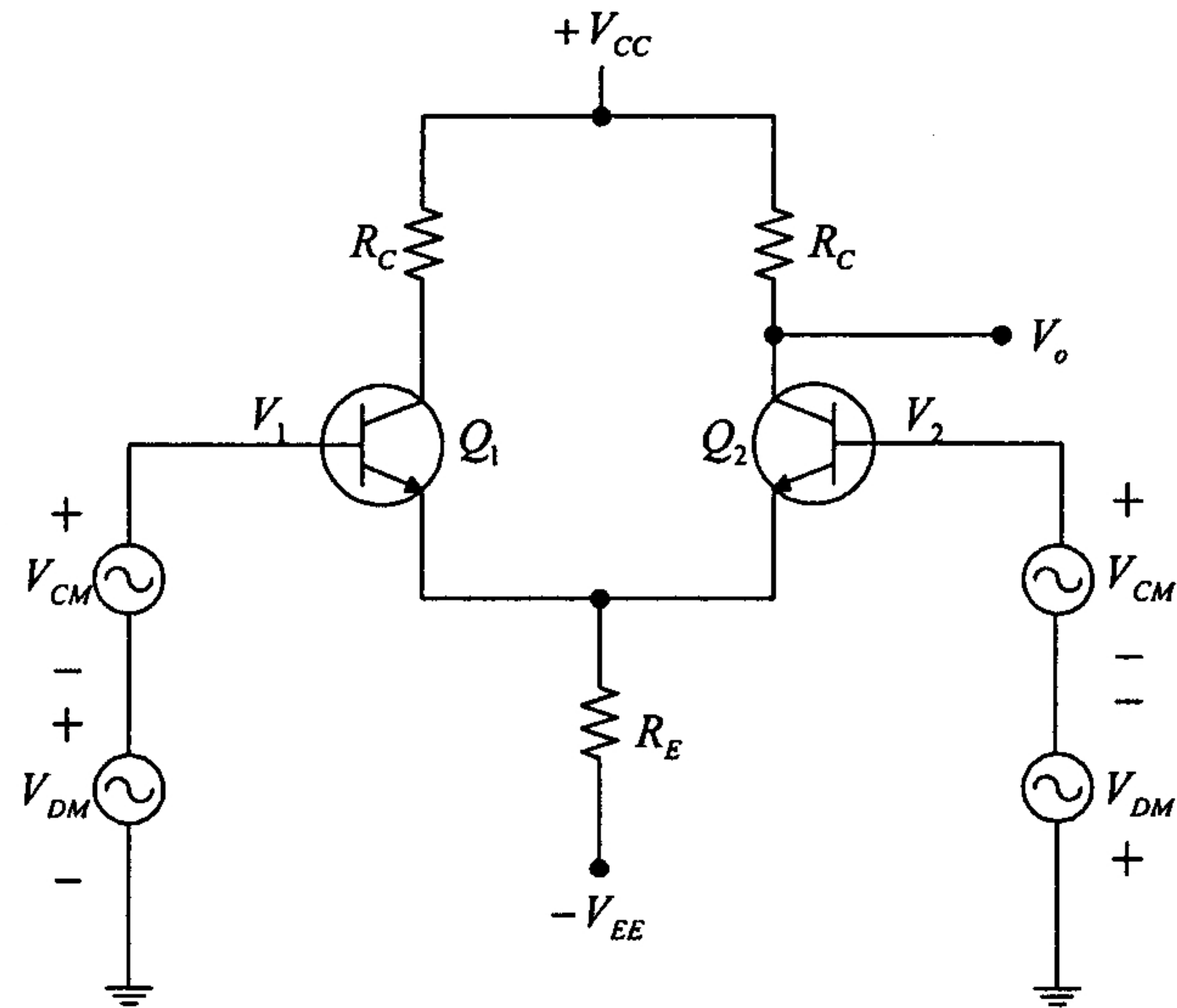


二、If $\beta = 75$, then plot out the characteristic curve of V_o and V_i relationship in the following circuit.

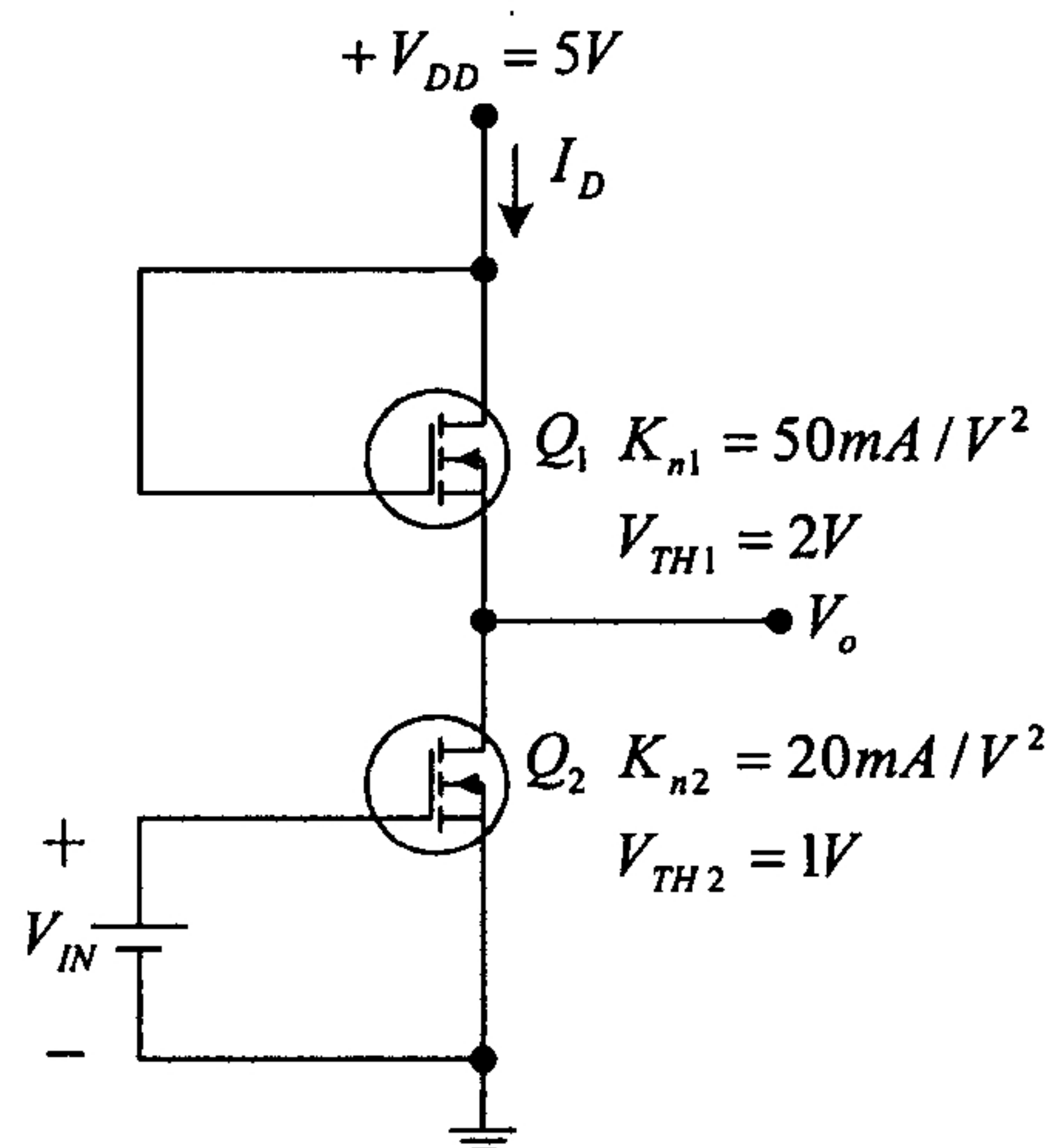


試題 共 2 頁，第 2 頁

- 三、(a) If transistors Q_1 and Q_2 are identical, then find A_{CM} , A_{DM} and CMRR;
 (b) Find the condition of the circuit can be converted to differential amplifier.



- 四、Find I_D and V_o in the following cases: (a) $V_{IN} = 5V$ (b) $V_{IN} = 2V$



- 五、Find: (a) $A_v(s) = \frac{V_o(s)}{V_s(s)}$ (b) ω_0 and Q value (c) determine the type of the filter circuit.

