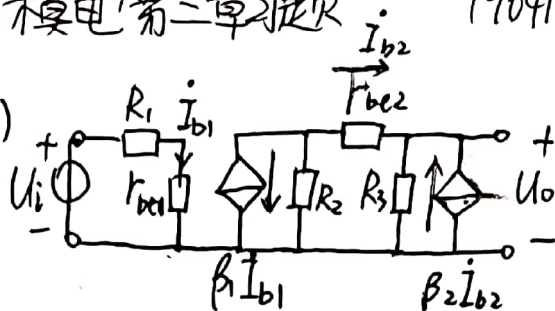


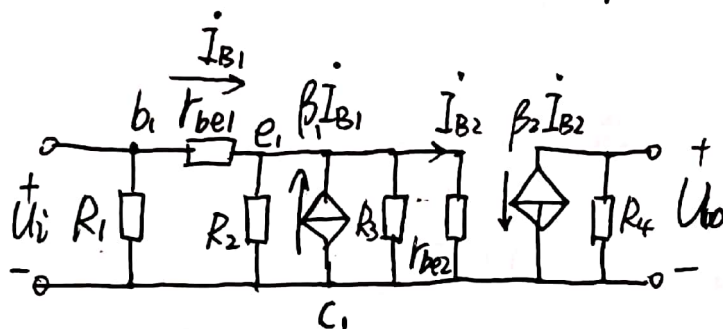
3.2 (a)



$$\dot{A}_u = - \frac{\beta_1 \{R_2 // [r_{be2} + (1+\beta_2)R_3]\}}{R_1 + r_{be1}} \cdot \frac{(1+\beta_2)R_3}{r_{be2} + (1+\beta_2)R_3}$$

$$R_i = R_1 + r_{be1} \quad ; \quad R_o = R_3 // \frac{r_{be2} + R_2}{1+\beta_2}$$

(b)

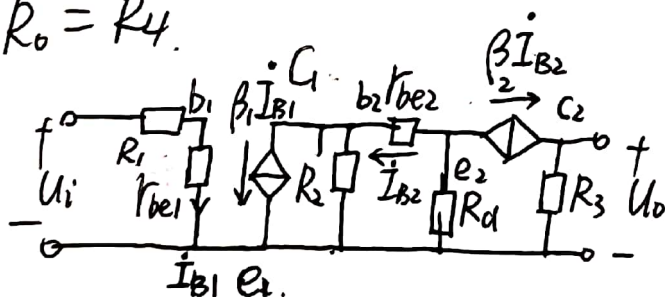


$$\dot{A}_u = \frac{(1+\beta_1)(R_2 // R_3 // r_{be2})}{r_{be1} + (1+\beta_1)(R_2 // R_3 // r_{be2})} \cdot \left(- \frac{\beta_2 R_4}{r_{be2}} \right)$$

$$R_i = R_1 // [r_{be1} + (1+\beta_1)(R_2 // R_3 // r_{be2})]$$

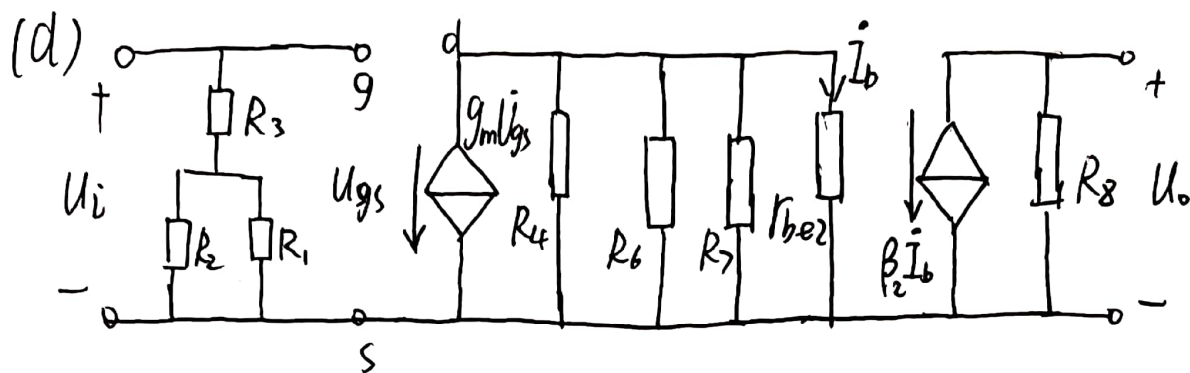
$$R_o = R_4$$

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$$\dot{A}_u = - \frac{\beta_1 \{R_2 // [r_{be2} + (1+\beta_2)R_d]\}}{R_1 + r_{be1}} \cdot \left[- \frac{\beta_2 R_2}{r_{be2} + (1+\beta_2)R_d} \right]$$

$$R_i = R_1 + r_{be1} \quad R_o = R_3$$



$$\dot{A}_u = -g_m (R_4 \parallel R_6 \parallel R_7 \parallel r_{be2}) \cdot \left(-\frac{\beta_2 R_8}{r_{be2}} \right)$$

$$R_i = R_3 + R_1 \parallel R_2 \quad R_o = R_8$$

3.3 电路I $R_i = R_{b1} \parallel R_{b2} \parallel r_{be} \quad R_o = R_c \quad \dot{A}_{uI} = -\frac{\beta R_c}{r_{be}}$

电路II $R_i = R_b \parallel [r_{be} + (1+\beta)R_e] \quad R_o = R_e \parallel \frac{R_b + r_{be}}{1+\beta}, \quad \dot{A}_{uII} = \frac{(1+\beta)R_e}{(1+\beta)R_e + r_{be}}$

(1) (d)(e) 第一级均为电路II. 故 \$R_i\$ 比较大.

(2) (c)(e) 最后一级均为电路II. 电路II \$R_o\$ 较小, 故 (d)(e) \$R_o\$ 较小.

(3) (c).(d) 放大倍数明显小于 \$|\dot{A}_{uI}|\$. (e) 近似等于, 故 (e) \$|\dot{A}_{uI}|\$ 最大.