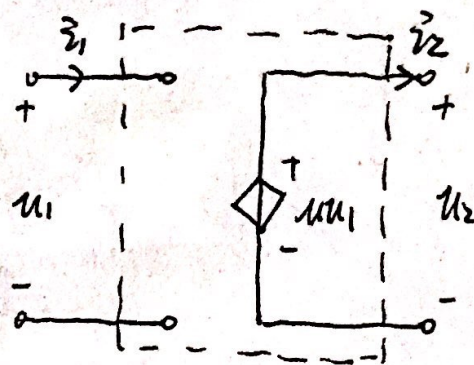
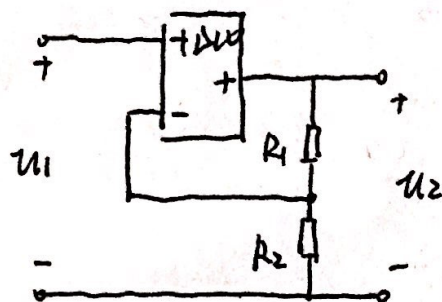
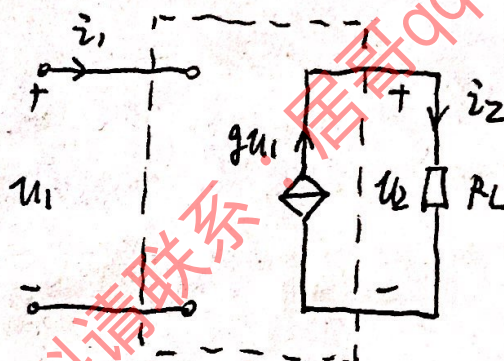
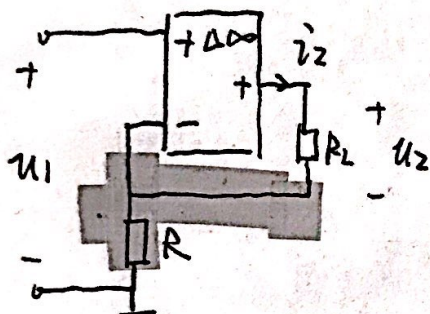


1. 运放和受控源

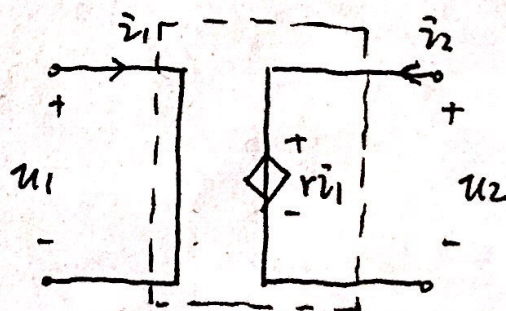
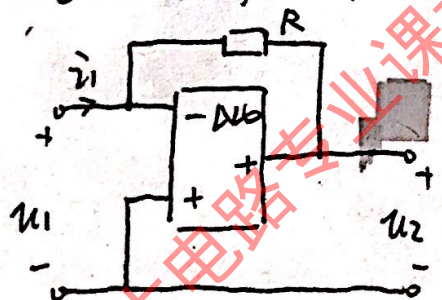
① 电压控制型电压源



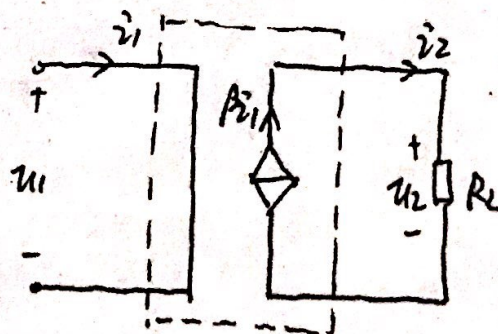
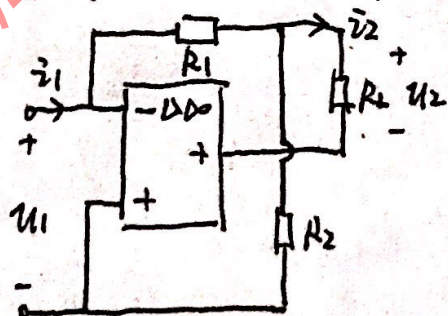
② 电压控制型电流源



③ 电流控制型电压源

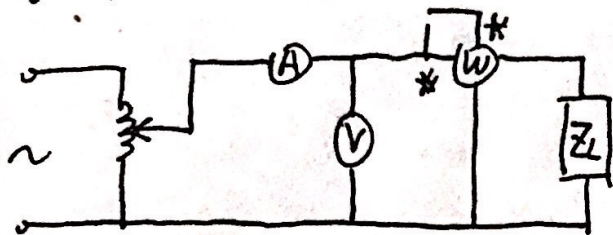


④ 电流控制型电流源

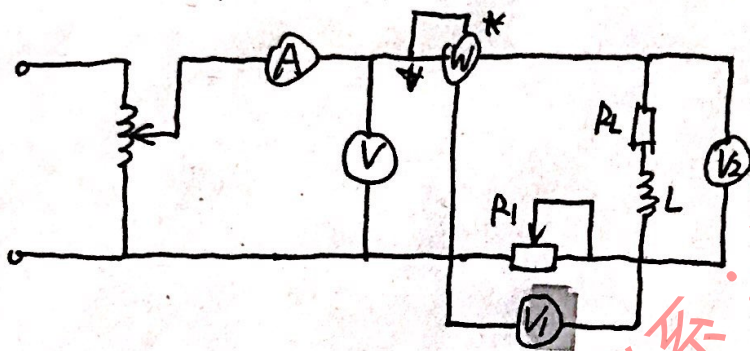


2. 交流参数测量

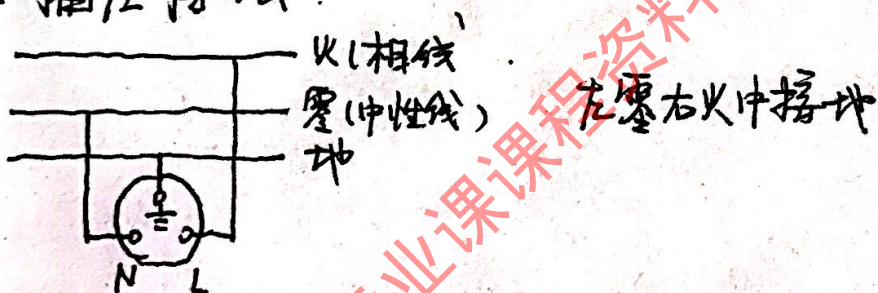
① 三表法 (测纯电阻、纯电容、电感线圈及 $R+L$ 及 $R+L+C$)



② 三电压表法测电感线圈参数

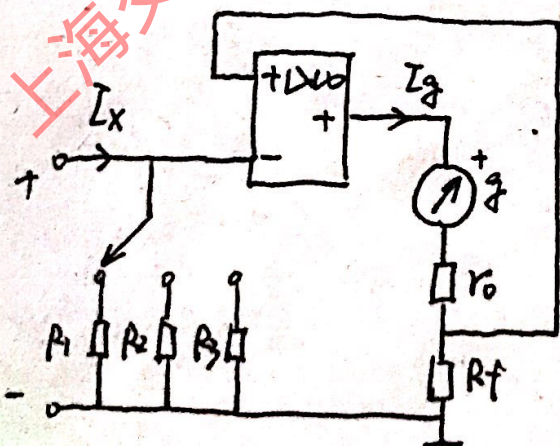


3. 插座接法

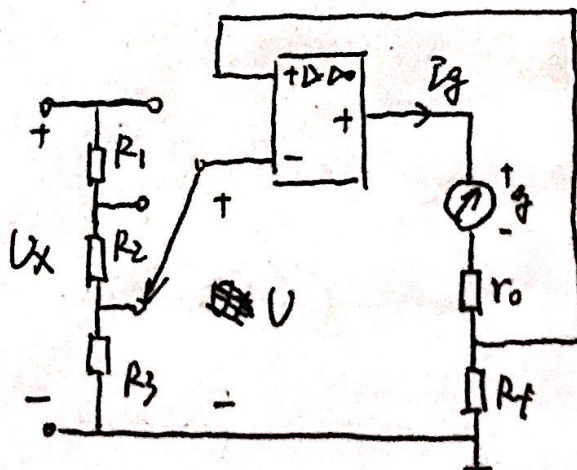


4. 高精度电表制作

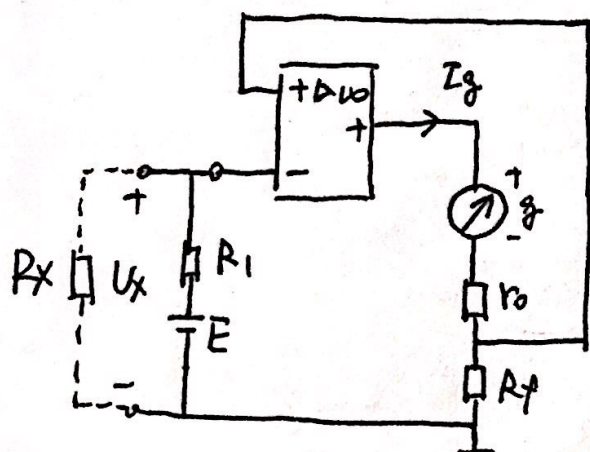
① 高精度电流表



② 高精度电压表



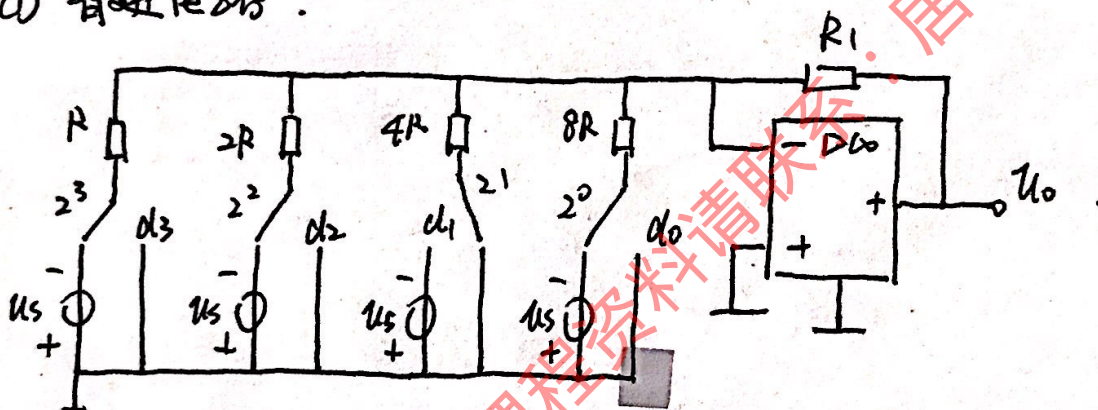
③ 高精度电阻表



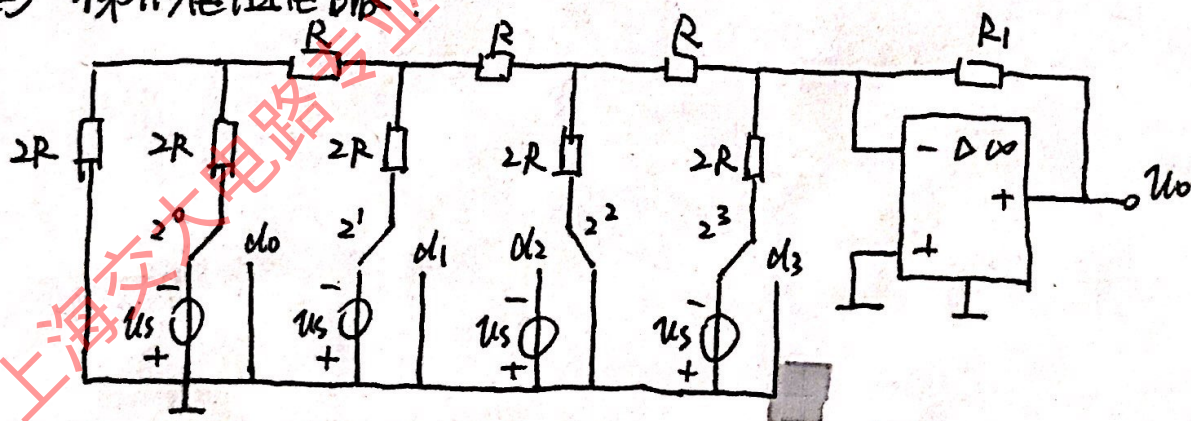
① ② ③
分别用 I_g 表示出 I_x, U_x, R_x
即可。

5. 数模转换器 (DAC)

① 普通电路



② 梯形电阻电路

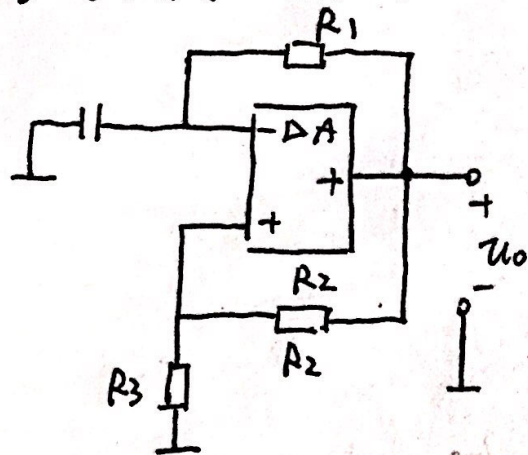


两种电路的排序是相反的。

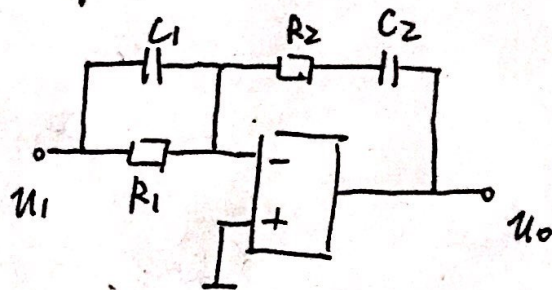


6. 波形发生器

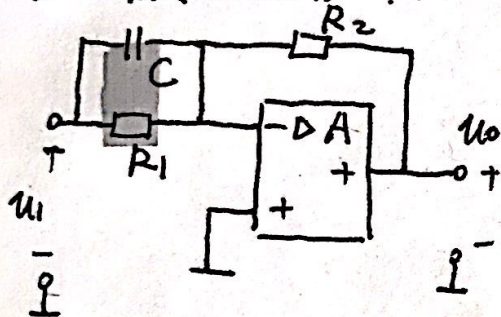
① 方波发生器



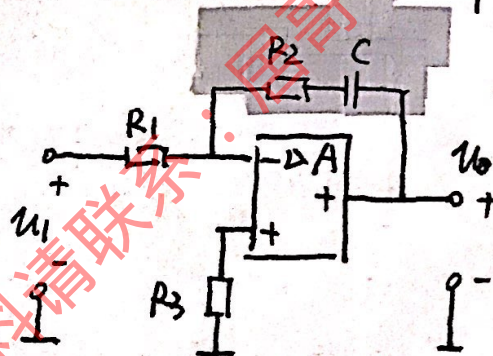
⑤ PID



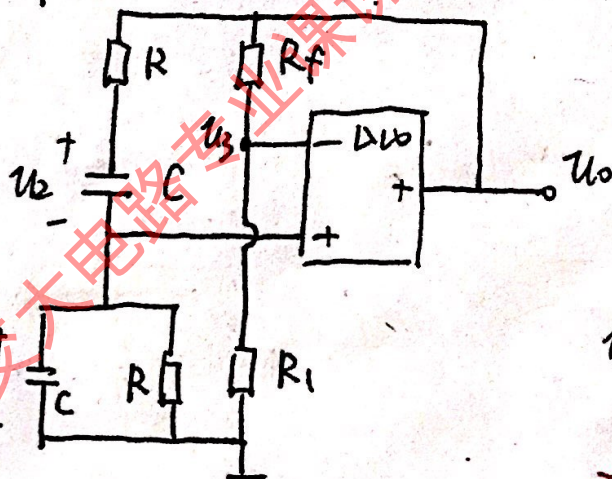
② 微分电路 PD



③ 积分器电路 PI



④ 文氏桥式振荡电路 (正弦波发生器)



$$k = \frac{R_1}{R_1 + R_f}$$

$$U_3(s) = k U_o(s)$$

u_1, u_2 为有初值

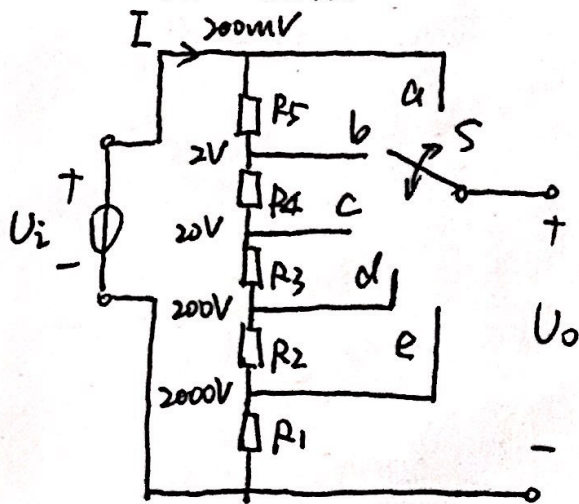
$k = \frac{1}{3}$ 时 输出正弦波

考试时计算

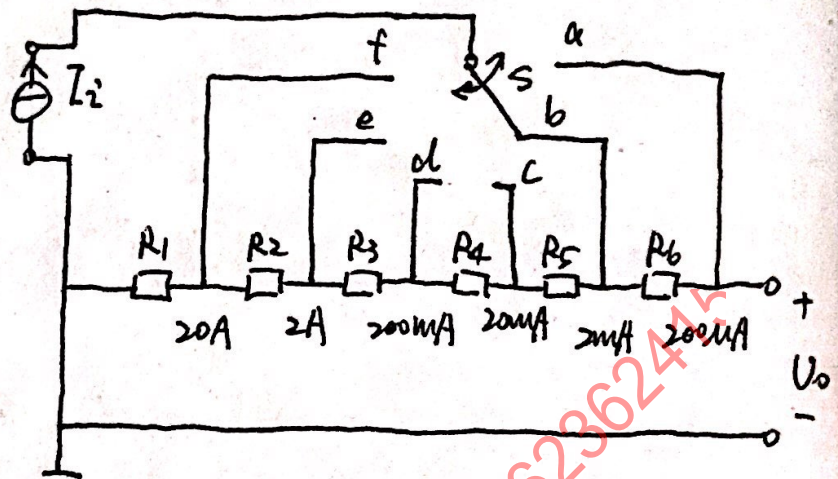


7. 万用表量程切换电路

① 电压量程切换

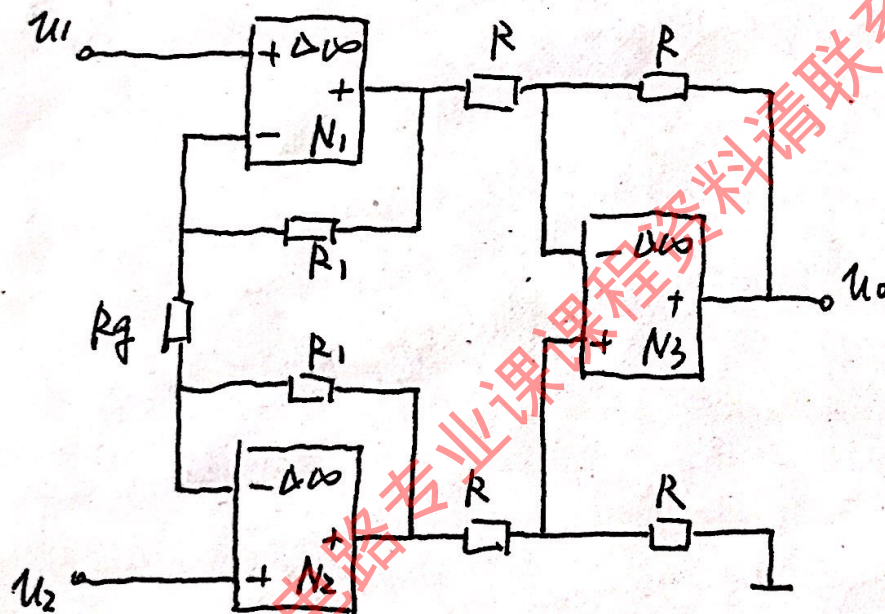


② 电流量程切换



把握 U_o $|U_o|$ 不变 U_i 大用电阻分压 I_i 大减少串入电阻

8. 仪表放大器



$$u_o = u_o' + u_o''$$

$$= (1 + \frac{2R_1}{R_2})(u_2 - u_1)$$

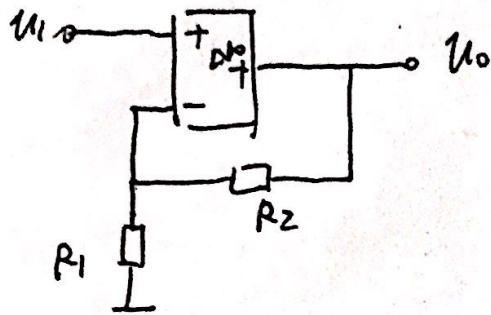
分析见书 P.196.

(三运放)



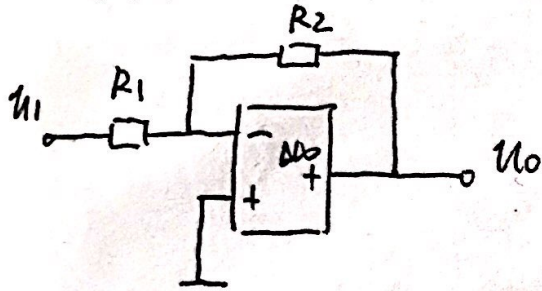
扫描全能王 创建

11) 同比例放大电路.



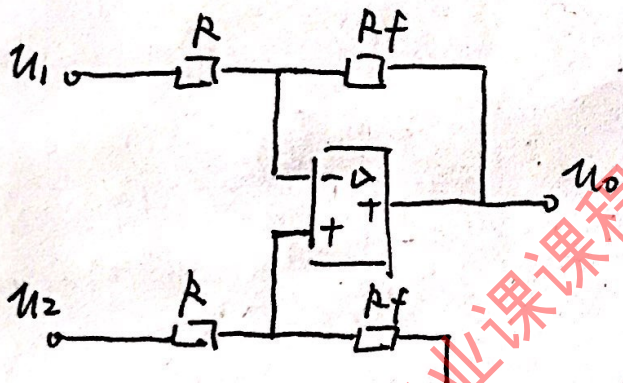
$$u_0 = (1 + \frac{R_2}{R_1}) u_1$$

12) 反同比例放大电路.

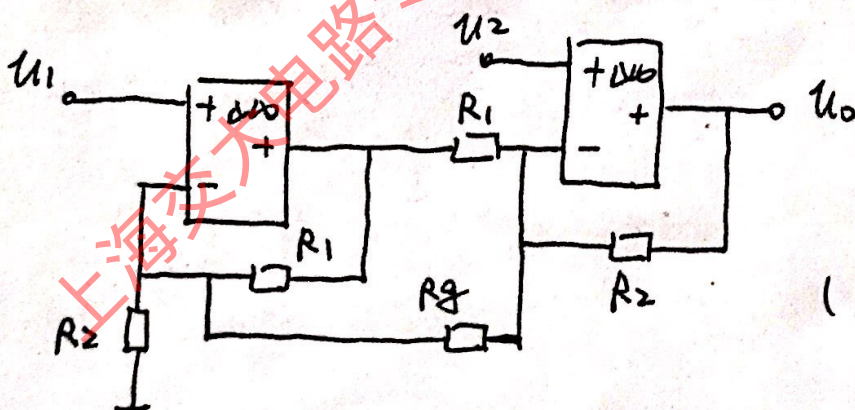


$$u_0 = -\frac{R_2}{R_1} u_1$$

13) 差分放大电路.



$$u_0 = \frac{R_f}{R} (u_2 - u_1)$$



$$(1 + \frac{R_2}{R_1} + \frac{2R_2}{R_2}) (u_2 - u_1)$$

(两运放)

