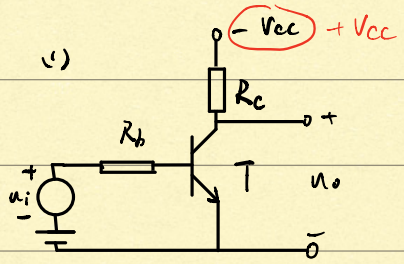
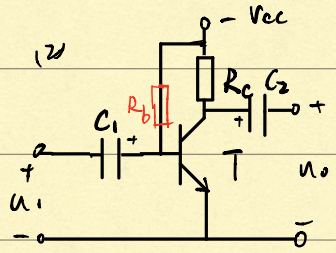
T1.

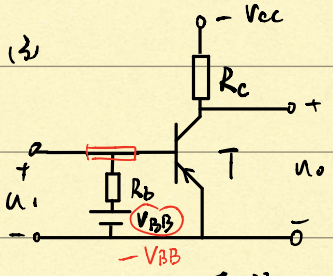
(1)



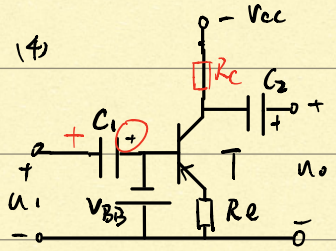
(2)



(3)



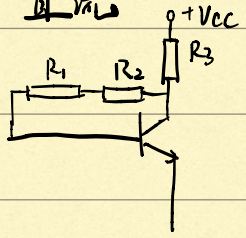
(4)



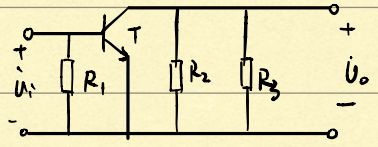
T2.

(a)

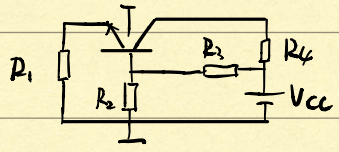
直流

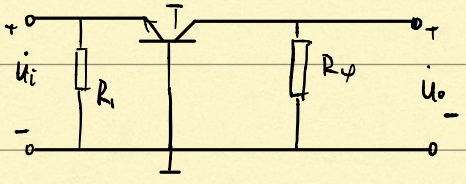


交流通路

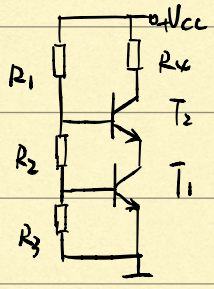


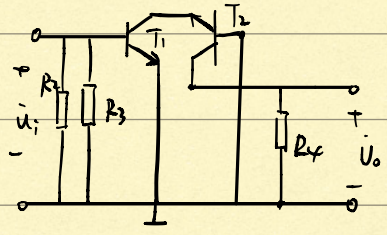
(b)



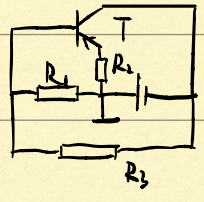


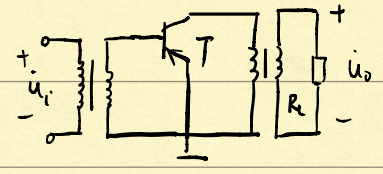
(c)





(d)





T4 估算静态工作时 $I_B = 0.3V / 15k\Omega = 20\mu A$

又由 $U_{CE} = 12 - (i_C + \frac{U_{CE}}{R_L}) \cdot R_C$ 可作负载线. 图上负载线与 $i_b = 20\mu A$ 交点即为 Q.

$R_L = \infty$ 时. $I_{BQ} = 20\mu A$. $I_{CQ} = 2mA$. $U_{CEQ} = 6V$.

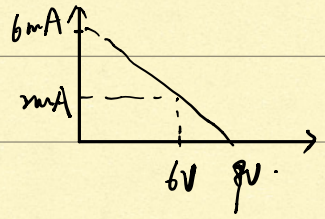
$U_{omax} = U_{CEQ} - U_{CES} = 5.3V$. $U_{om} = U_{omax} / \sqrt{2} = 3.75V$

$R_L = 3k\Omega$ 时. $I_{BQ} = 20\mu A$. $I_{CQ} = 2mA$. $U_{CEQ} = 3V$.

$U_{omax} = 2.3V$. $U_{om} = 2.3 / \sqrt{2} = 1.63V$

T2.10 $\therefore I_{CQ}=1mA$ $\therefore U_{CEQ}=V_{CC}-R_c\cdot I_{CQ}=6V$

$I_{BQ}=I_{CQ}/\beta=2\mu A$



$R_L // R_c = 1.5k\Omega$

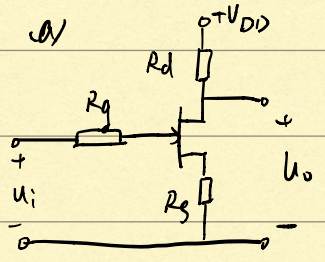
$U_{om}=3/\sqrt{2}=2.12V$

为使U_{om}最大 $I'_{CQ}\cdot R'_L=U'_{CQ}-U_{CES}$ $\therefore I'_{CQ}=2.53mA$.

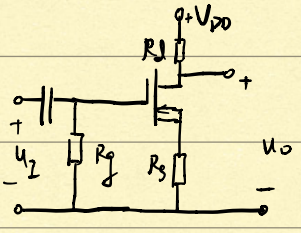
$U'_{CQ}=V_{CC}-I'_{CQ}\cdot R_c$

$\therefore I_B=\frac{I_{CQ}}{\beta}$. $R_B=\frac{V_{CC}-V_{CES}}{I_B}$ $\therefore R_b=447k\Omega$. $U_{om}\approx 2.68V$

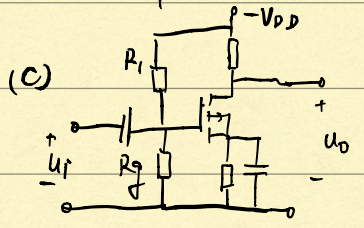
T2.14 (a)



(b)



(c)



补3. (1) 反相

(2) 截止.; 饱和 ; 饱和

(3) 截止

(4) 消除饱和失真:适当降低Q点 { 增大RB 减小I_{BQ} / 减小R_c .增大负载线斜率

消除截止失真:适当升高Q点 { 减小RB. / 增大R_c.