P426. 8.2

(1) C

(2) B

(3) $(\frac{15-3}{\sqrt{2}})^2/R_L = 72/8 = 9W$ C

(4). C

(5) A

P427. 8.3

(1) 无正半波 (2). T_1 烧断 (3) 无负半波 (4) 正半波很小

(5) ~~无正半波~~ (6) 交越失真

$U_o = 14.3V$

P427. 8.4

(1) $P_{om} = U_{om}^2/R_L = \frac{1}{2}(V_{cc}-U_{CES})^2/4 = \frac{1}{8}(16-2)^2 = 24.5W$

$\eta = \frac{P_{om}}{P_V}$, $P_V = V_{cc}\cdot I_{RL} = (\frac{1}{T_1}\int_0^{T_1}\frac{V_{cc}-U_{ces}}{R_L}\cdot\sin\omega t\, d\omega t)\cdot V_{cc}$

$= \frac{2}{\pi}\frac{V_{cc}(V_{cc}-U_{ces})}{R_L} \Rightarrow \eta = \frac{\pi}{4}\frac{V_{cc}-U_{ces}}{V_{cc}} = \frac{7\pi}{32}$

(2). $P_{T max} = \frac{1}{T_1}\int_0^{T_1} u_{CE}\cdot i_c\, dt$

$= \frac{1}{T_1}\int_0^{T_1}(V_{cc}-U_{om}\sin\omega t)\cdot\frac{U_{om}\sin\omega t}{R_L}dt = \frac{1}{R_L}(\frac{V_{cc}U_{om}}{\pi}-\frac{U_{om}^2}{4})$.

$\therefore P_{T max} = P_{T max}(U_{om} = \frac{2}{\pi}V_{cc}) = \frac{V_{cc}^2}{\pi^2 R_L} = \frac{64}{\pi^2}W$

(3). ~~$U_{om} = U_i = U_{CES}$~~

$U_o = U_i = \frac{1}{\sqrt{2}}(V_{cc}-U_{CES}) = 7\sqrt{2}V$.

P427. 8.5.

(1) ~~$U_{BQ1}=1.4V$~~ ~~$U_{BQ3}=-0.7V$~~, ~~$U_{BQ5}=0$~~ 0V

(2) ~~$U_{BQ1}=U_{BQ3}=0V$~~, ~~$U_{BQ5}=-18V$~~. $U_{BQ2}=$.

(2). (1) $U_{BQ1}=1.4V$, $U_{BQ3}=-0.7V$, $U_{BQ5}=$ ~~0~~ $-12.3V$.

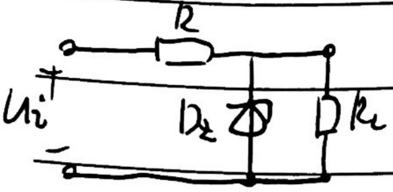
(2). $I_{R2}=\frac{V_{CC}-U_{BQ1}}{R_2}=1.66mA$, $I_{R3}=\frac{1.4+0.7-1.4}{R_3}=7mA$?

$U_I=0V$.

(3). R_3, ~~减小~~ 增大 R_3.

(4). 可以. 两个二极管加一个 R_0 以用于调节 I_{BQ1}, I_{BQ3}, 而个D 消除交越失真; 太多 r_d 太大.

P479. 9.11



$U_{DZ}=6V$. $I_Z=5mA$. $P_{ZM}=240mW \Rightarrow I_{ZM}=40mA$

$r_Z<15\Omega$.

(1) $I_{RL}=\frac{U_Z}{R_L}$, $(I_{RL}+I_Z)R+U_{DZ}=U_i \Rightarrow R=\frac{U_i-U_{DZ}}{I_{RL}+I_Z}$

$\therefore$ ~~$R\in[514\Omega$, $[267\Omega, 433\Omega]$~~ $R\in[360\Omega, 400\Omega]$.

(2) $S_r=\frac{U_I}{U_O}\cdot\frac{\partial U_O}{\partial U_I}\Big|_{R_L=const}$

$=\frac{r_Z}{R}\cdot\frac{U_I}{U_Z}=\frac{15}{390}\cdot\frac{24}{6}=0.154$

$\frac{15}{390}\cdot\frac{20}{6}=0.128$

P ~~48~~ 480. 9.15.

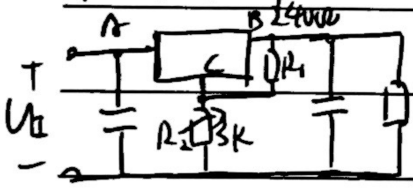
(1) 整流 $D_1\sim D_4$. 滤波：C_1；调整管 T_1, T_2.

基准：R', D_Z', R, D_Z；比较：A；采样：R_1, R_2, R_3.

(2) 上 − 下 +

(3) $\frac{R_1+R_2+R_3}{R_2+R_3}\cdot U_Z \le U_O \le \frac{R_1+R_2+R_3}{R_3}U_Z$

P481. 9.17

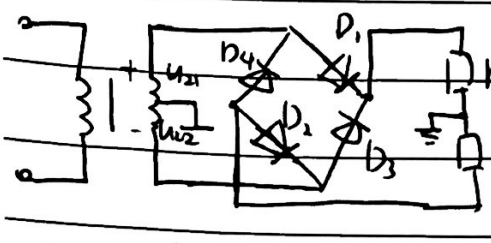


$U_{AB}:3\sim40V$. ~~U_{CB}~~ $U_{BC}=U_{R1}=1.25V$

(1) $U_O=(1+\frac{R_2}{R_1})U_{REF}\in[1.25V, 16.875V]$

(2) $U_I-U_O\in[3, 40]V \Rightarrow U_I\in[19.875V, 41.25V]$.

P479. 9.8.



(1) U_{O1} +, U_{O2} −. ~~U_{O1}正, U_{O2}负.~~

(2) 全波.

(3). $U_{O(AV)} = \frac{2\sqrt{2}}{\pi}(U_2+U_D) \times \frac{1}{2} \approx 0.9U_2$. $U_{O1(AV)} = 18V$, $U_{O2(AV)} = -18V$.

~~$U_{O1(AV)} \approx 4.5V$, $U_{O2(AV)} \approx -4.5V$.~~

(4). $U_{O1(AV)} = -U_{O2(AV)} = \frac{2\sqrt{2}}{\pi} \frac{1}{2}(U_1+U_2) = 18V$.