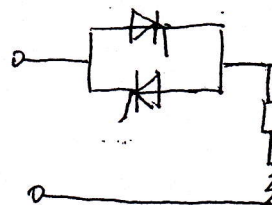
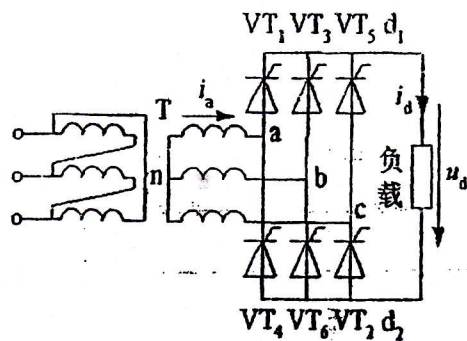


$$2.34 U_2 [1 + \cos(\frac{\pi}{3} + \alpha)]$$



$$U_o = U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

2. 单相交流调压电路, 阻感性负载, 阻抗角 30° . $\varphi = 30^\circ$ $\pi - \alpha + \varphi$ (10分)

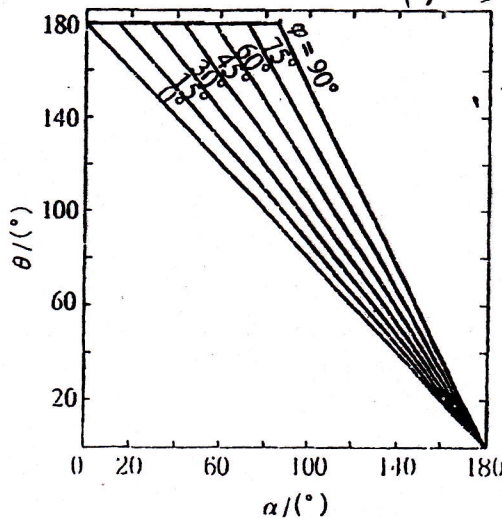
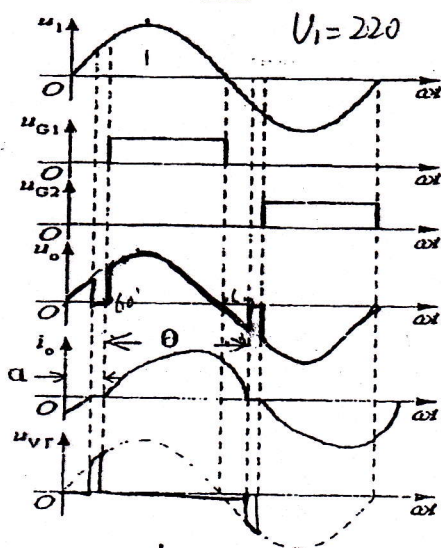
(1) 画出主电路的原理图

(2) 请在下图画开通角 $\alpha = 60^\circ$ 时, 负载电压和晶闸管电压波形

(3) 可控移相范围是多少? $\alpha = 30^\circ$ 和 $\alpha = 60^\circ$ 时导通角是多少?

(4) 若为电阻性负载开通角为 $\alpha = 15^\circ$, $\alpha = 30^\circ$, $\alpha = 60^\circ$ 时, 每管导通角分别为多少?

(5) 若为电阻性负载 $U_1 = 220V$, $R = 10\Omega$, $\alpha = 30^\circ$ 时负载电流有效值是多少?

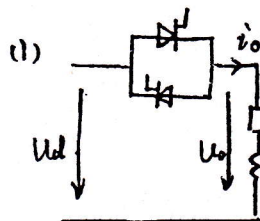


$$\theta = \frac{180 - \alpha}{180 - \varphi} \times 180^\circ$$

移相

移相

$$\theta = 180^\circ - \alpha$$



$$U_o = U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

$$I_o = \frac{U_o}{R}$$

$$U_o = \sqrt{\frac{1}{\pi} \int_{\alpha}^{\pi} (U_1 \sin \omega t)^2 d\omega}$$

$$I_o = \frac{U_o}{R}$$

$$U_o = U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

$$U_o = U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

$$= U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

$$U_o = U_1 \sqrt{\frac{1}{2\pi} \int_{\alpha}^{\pi} \sin^2 \omega t d\omega + \frac{\pi - \alpha}{\pi}}$$

$$I_o = \frac{U_o}{R}$$