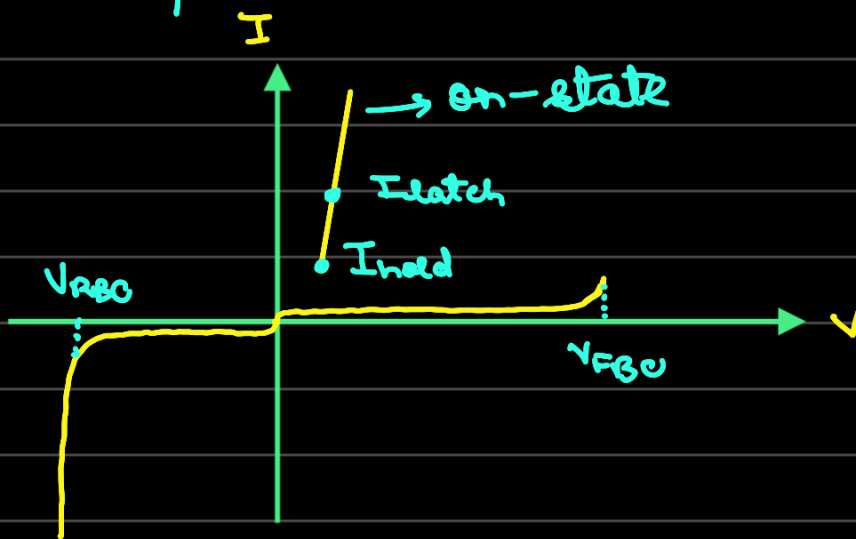
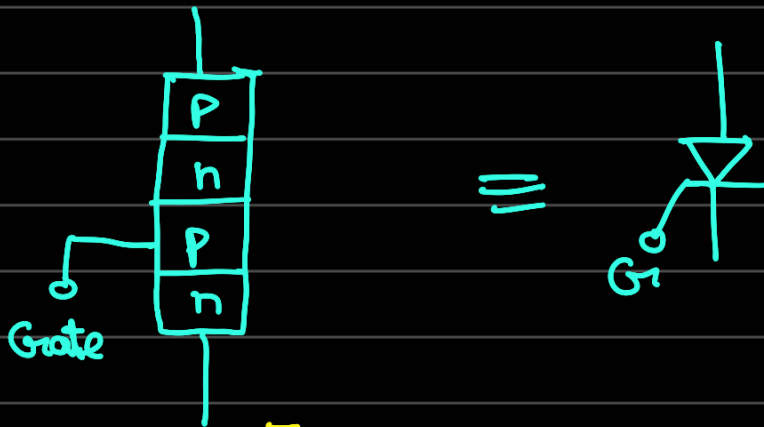


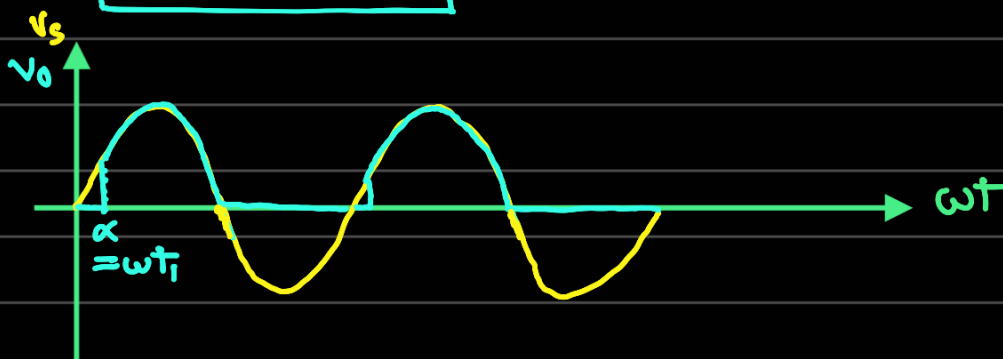
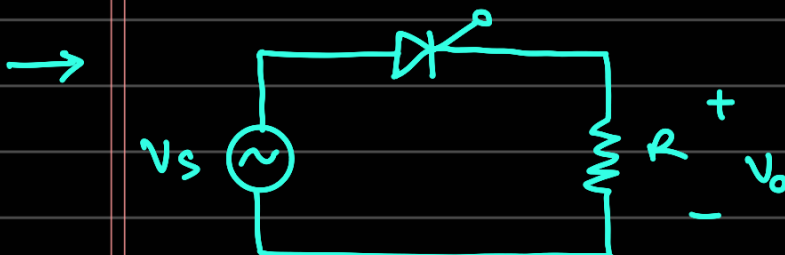
Day-7

→ Silicon-controlled Rectifier (SCR)/Thyristor:



$I \geq I_{latch} \rightarrow \text{ON state}$
 $I < I_{hold} \rightarrow \text{OFF state}$

(Naturally commutating device)



$$V_s = V_m \sin \omega t$$

$$V_{o,avg} = \frac{1}{2\pi} \int_{\alpha}^{\pi} V_m \sin \theta d\theta$$

$$= \frac{V_m}{2\pi} (1 + \cos \alpha)$$

$$V_{o,rms} = \frac{V_m}{2} \sqrt{1 - \frac{\alpha}{\pi} + \frac{\sin 2\alpha}{2\pi}}$$

$$P.f. = \frac{1}{\sqrt{2}} \sqrt{1 - \frac{\alpha}{\pi} + \frac{\sin 2\alpha}{\pi}}$$

$$THD = \sqrt{\frac{2}{1 - \frac{\alpha}{\pi} + \frac{\sin 2\alpha}{2\pi}} - 1}$$

→

