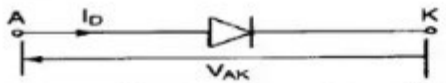
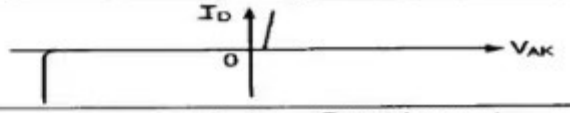
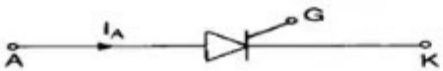
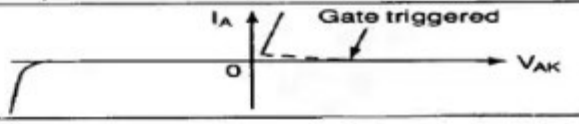
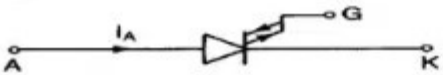
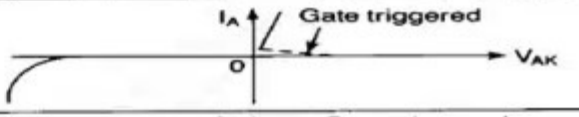
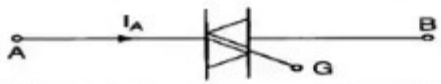
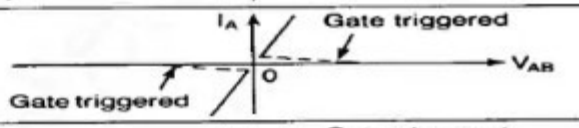
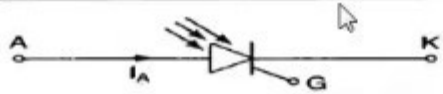
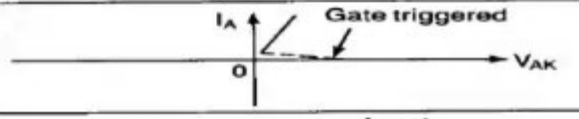
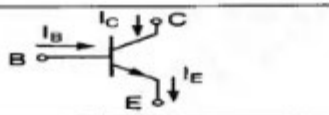
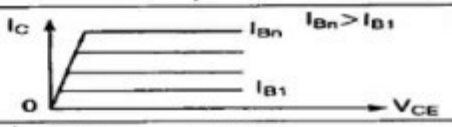
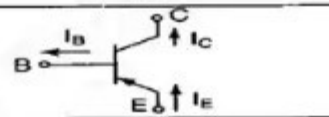
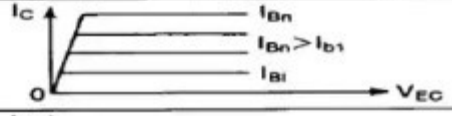
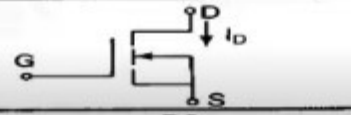
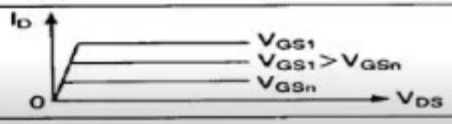
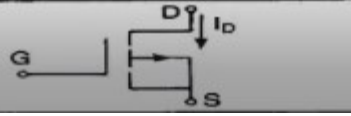
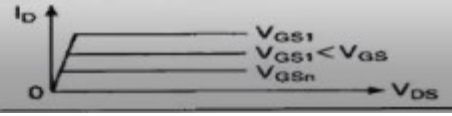
There are 8 types of power devices in thyristor family, they are:

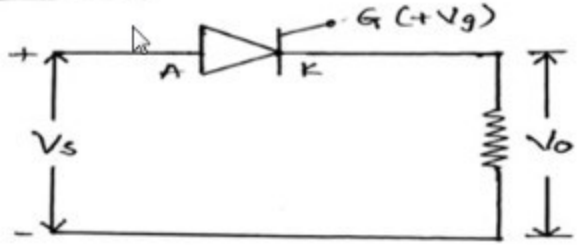
1. **Silicon Controlled Rectifiers (SCR)**
2. **Gate turn-OFF thyristor (GTO)**
3. **Reverse conducting thyristor (RCT)**
4. **Static Induction thyristor (SITH)**
5. **Gate assisted turn-OFF thyristor (GATT)**
6. **Light activated silicon controlled rectifier (LASCR)**
7. **MOS- Controlled thyristor (MCT)**
8. **TRIAC**

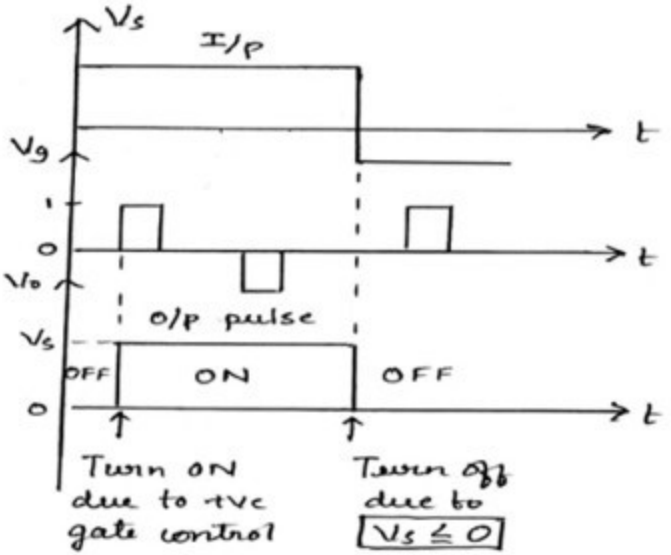
Note: TRIAC (triode for alternating current)
A **triode** is an electronic amplifying vacuum tube consisting of three electrodes an anode, a cathode, and a control grid

CHARACTERISTICS AND SYMBOLS OF SOME POWER DEVICES

Devices	Symbols	Characteristics
Diode		
Thyristor		
GTO		
TRIAC		
LASCR		
NPN BJT		
PNP BJT		
N-Channel MOSFET		
P-Channel MOSFET		

i) Control characteristics of SCR (Thyristor):-





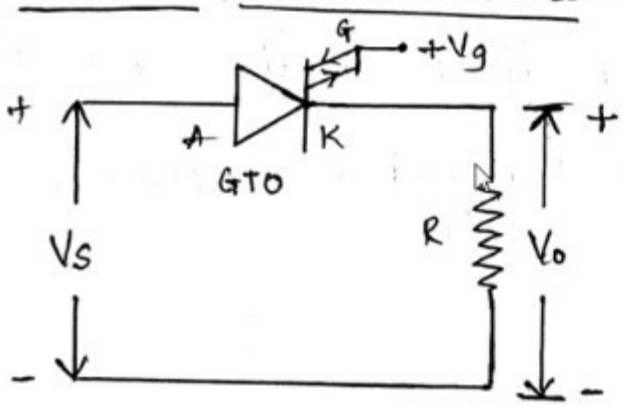
* A thyristor (SCR) can be made to conduct by applying a +ve pulse to its gate, when its anode Vtg is more +Ve than its cathode Vtg

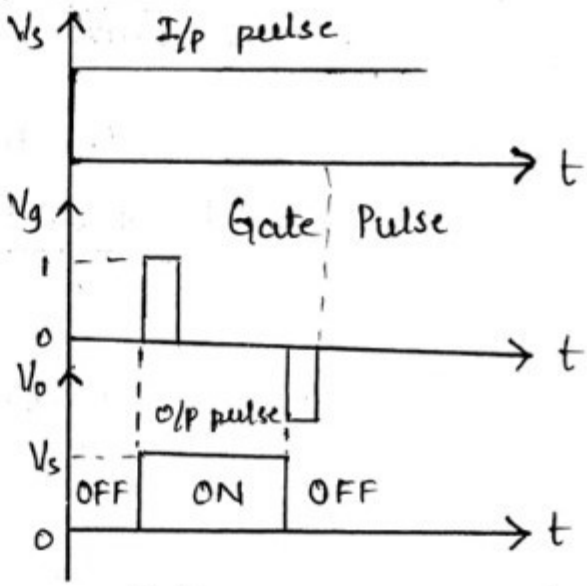
* Once a thyristor starts conducting, it behaves like a closed switch & it becomes insensitive to gate signal ie when SCR is turned ON, the gate looses its control over the device (If gate looses its control over the device then gate is made either 0 or -Ve, which will not have any effect on its conduction).

  Due to this property the thyristor is considered as a "latched device"

* The thyristor can be turned OFF by applying a reverse bias Vtg ie $\boxed{V_{AK} \leq 0}$

2) Control characteristics of GTO





* GTO is turned ON by applying a +ve gate pulse and is turned OFF by applying -ve pulse to the gate

* Whenever GTO is turned ON Vtg Vs appears across the load, when the device is OFF, the o/p Vtg is zero.