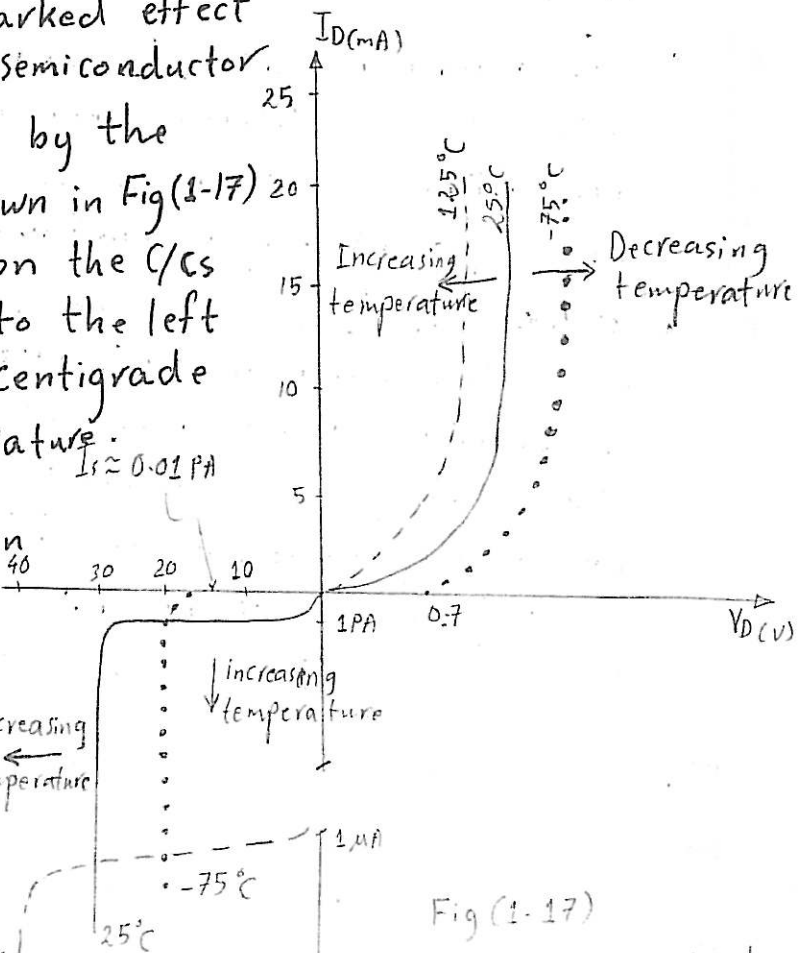


## Temperature Effects :

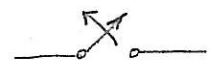
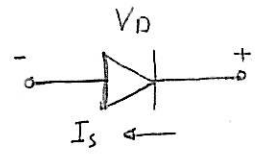
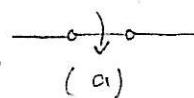
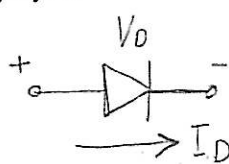
- \* Temperature can have marked effect on the characteristics of a semiconductor diode, as demonstrated by the C/cs of a silicon diode shown in Fig(1-17)
- \* In the forward-bias region the C/cs of a silicon diode shift to the left at a rate of 2.5 mV per centigrade degree increase in temperature.



- \* In the reverse-bias region the reverse saturation current of a silicon diode doubles for every 10°C rise in temperature.
- \* The reverse breakdown voltage of a semiconductor diode will increase or decrease with temperature depending on the Zener potential.

## ⑥ IDEAL VERSUS PRACTICAL :

- \* The semiconductor diode behaves in a manner similar to a mechanical switch, it can control whether current will flow between its two terminals.



Fig(1-18) (b)

- \* In forward-biased, the resistance of the diode should be  $0 \Omega$ .
- \* In reverse-bias region its resistance should be  $\infty \Omega$  to

Ideal semiconductor diode  
a) Forward biased  
b) reverse biased