

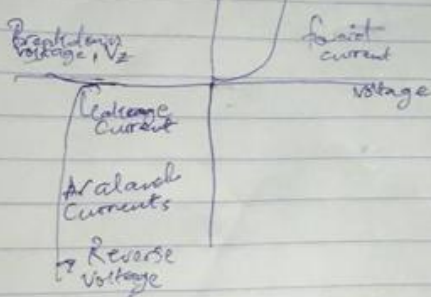
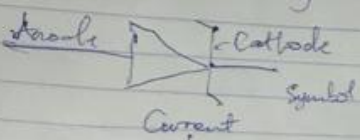
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COURSE: BASIC ELECT

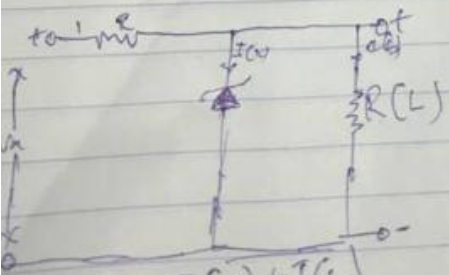
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 : 18/10/2021
 Basic circuit design.

Zener diode is a special type of diode designed to operate in the Zener break down region. Zener diode acts like normal P-N junction diodes forward bias of voltage is applied to Zener diode it allows large amount of electric current and block only small amount.



$I-V$ Characteristics Curve



$I = I(Z) + I(L)$
 Current diagram

Power = $P = I \cdot V$
 $I = 500 \mu A$
 $= 0.5 A$
 Max Current = Max Power
 $0.5 A = \frac{P}{V}$
 $0.5 A \cdot V = P$
 $V = \frac{P}{0.5 A}$

$V = 10V$
 $V_{DC} = 0.637 V_{max}$
 $= 0.63 \times 20$
 $= 12.74 \text{ Volts}$

$R_s = \frac{V_1 - V_2}{I_z}$
 $= \frac{10 - 5.48}{0.5}$

$I_z = 500 \mu A - 10 \mu A$
 $= 490 \mu A$
 $= 0.49 A$