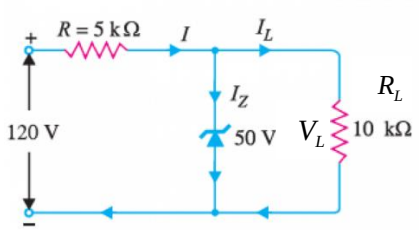
General Sir John Kotelawala Defense University

Basic Electronics

Tutorial 2 – Zener Diodes

Question 1



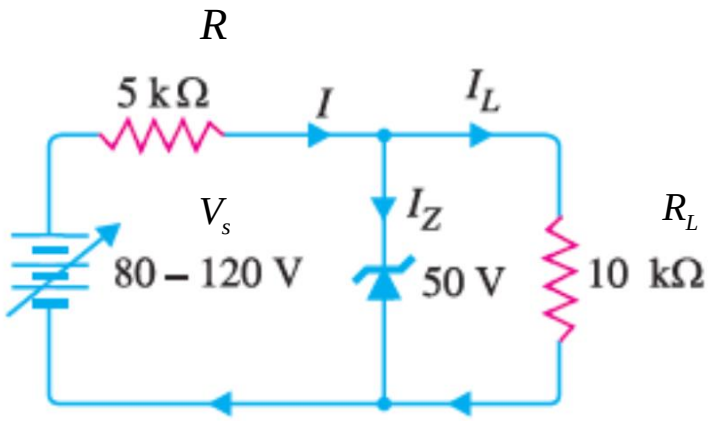
Find

(i) the output voltage V_L.

(ii) the voltage drops across series resistance R

(iii) the current through Zener diode I_L.

Question 2



Find the maximum and minimum values of Zener diode current.

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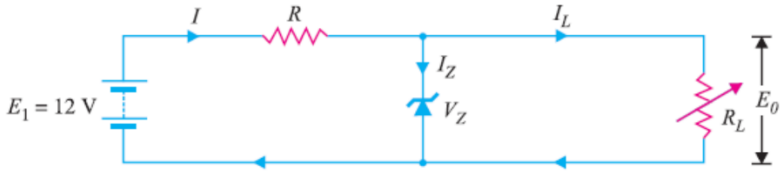
Question 3

A 7.2 V Zener (V_Z = 7.2v) is used in the circuit shown in below and the load current (I_L) is to vary from 12 to 100 mA. Find the value of series resistance R to maintain a voltage of 7.2 V across the load (R_L). The input voltage is constant at 12V and the minimum Zener current is 10 mA.



Question 4

The voltage across the load stays at 18 V as long as I_Z is maintained between 200 mA and 2 A with a Zener diode where V_Z = 18 V. Find the value of series resistance R so that E_0 remains 18V while input voltage E_i is free to vary between 22 V to 28V.