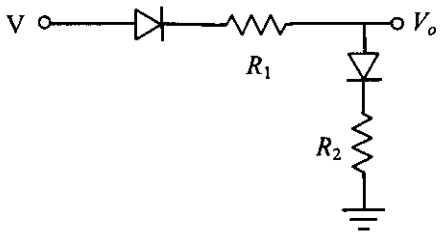
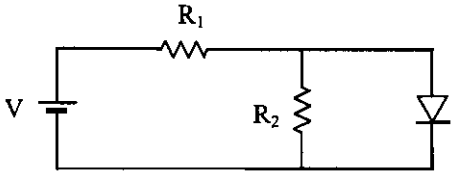
1. Given:
   D_1 and D_2 silicon diodes
   V = 18 volts
   R_1 = 1800 Ω
   R_2 = 470 Ω

   Calculate:
   Diode Currents (D_1 & D_2)
   V_0

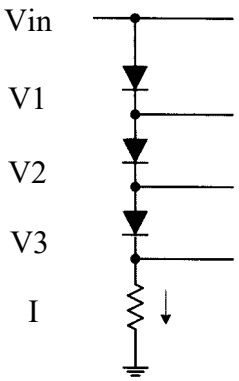


2. Given:
   D_1 silicon diode
   V = 14 volts
   R_1 = 220 Ω
   R_2 = 750 Ω

   Calculate:
   Diode Current
   V_{R1}
   V_{R2}
   I_{R1}
   I_{R2}

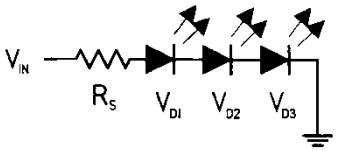


3. **Diode Voltage Divider**



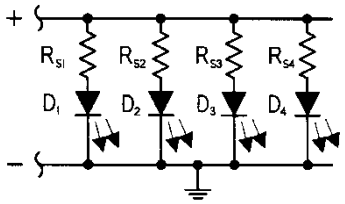
Calculate Rs for
Vin = 9 V
V_D = 0.7 V
I = 7 mA

4. **LEDs in Series**



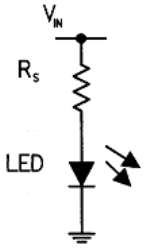
Calculate Rs for
V_{in} = 12 V
V_{LED} = 1.5 V
I_{LED} = 20 mA

5. **LEDs in Parallel**



Calculate R_{Si} for
V_{in} = 9 V
V_{LED1} = 1.2 V I_{LED} = 20 mA
V_{LED2} = 1.8 V I_{LED} = 20 mA
V_{LED3} = 2.4 V I_{LED} = 24 mA
V_{LED4} = 3.0 V I_{LED} = 15 mA

6. **Current Limiting Resistor**
   Calculate Rs for
   V_{in} = 3 V
   V_{LED} = 1.2 V
   I_{LED} = 15 mA



1. Diode Circuit
   Diode Currents = 7.3 mA
   V_0 = 4.1 V

2. Diode Circuit
   Diode Current = 59.5 mA
   V_{R1} = 13.3 V
   V_{R2} = 0.7 V
   I_{R1} = 60.4 mA
   I_{R2} = 0.93 mA

3. Diode Voltage Divider
   Rs = 986 Ω

4. LEDs in Series
   Rs = 375 Ω

5. LEDs in Parallel
   R_{S1} = 390 Ω
   R_{S2} = 360 Ω
   R_{S3} = 275 Ω
   R_{S4} = 400 Ω

6. Current Limiting Resistor
   Rs = 120 Ω