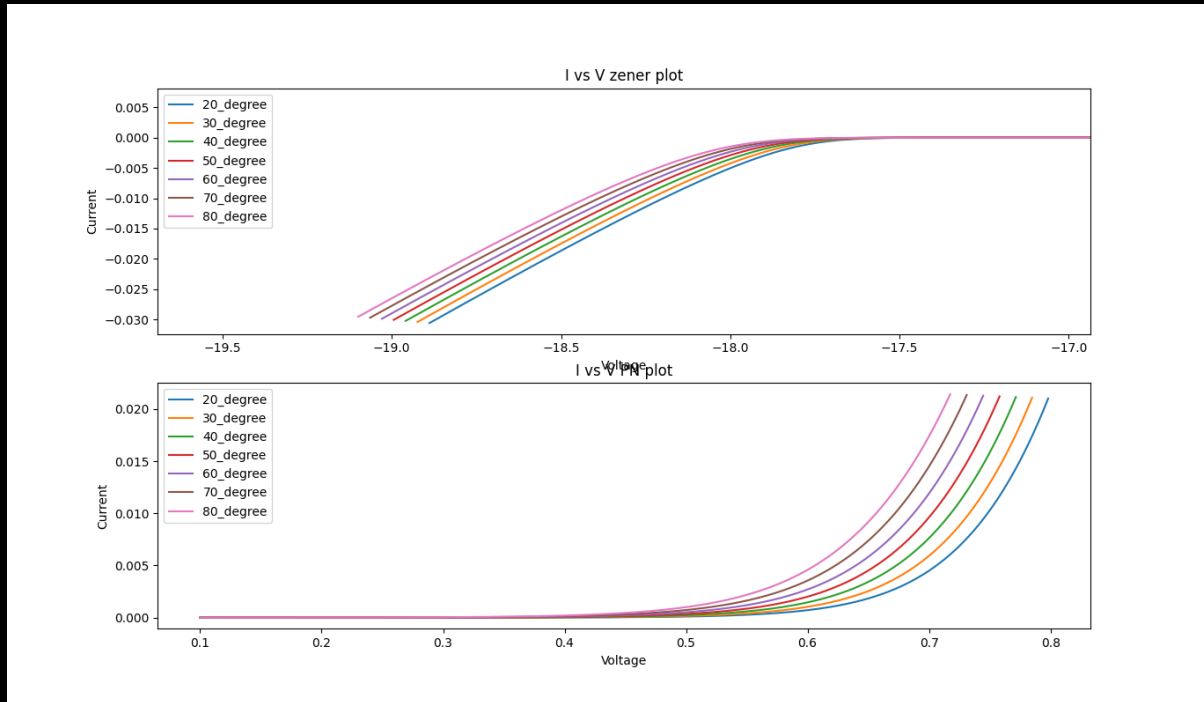


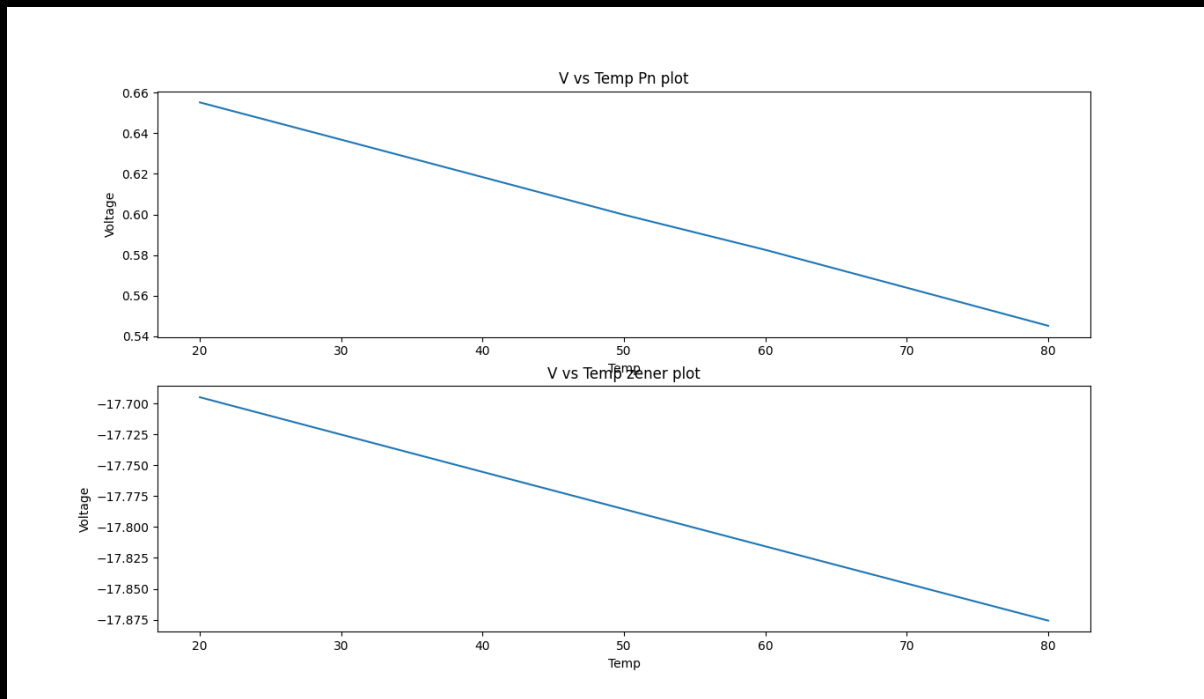
part A

Mid-Sem_2022_Spring_Q1_Solution

Plot IV Char: → 1 Mark



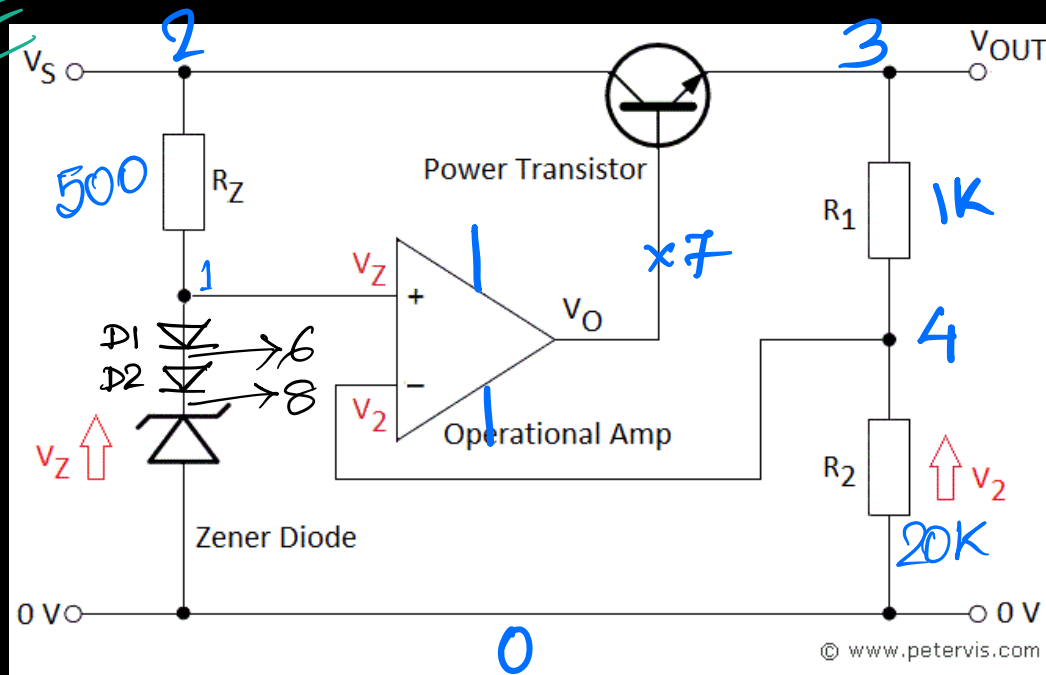
Voltage across the diode vs. Temperature: → 2 Marks



Temperature Co-efficient: → 2 Marks

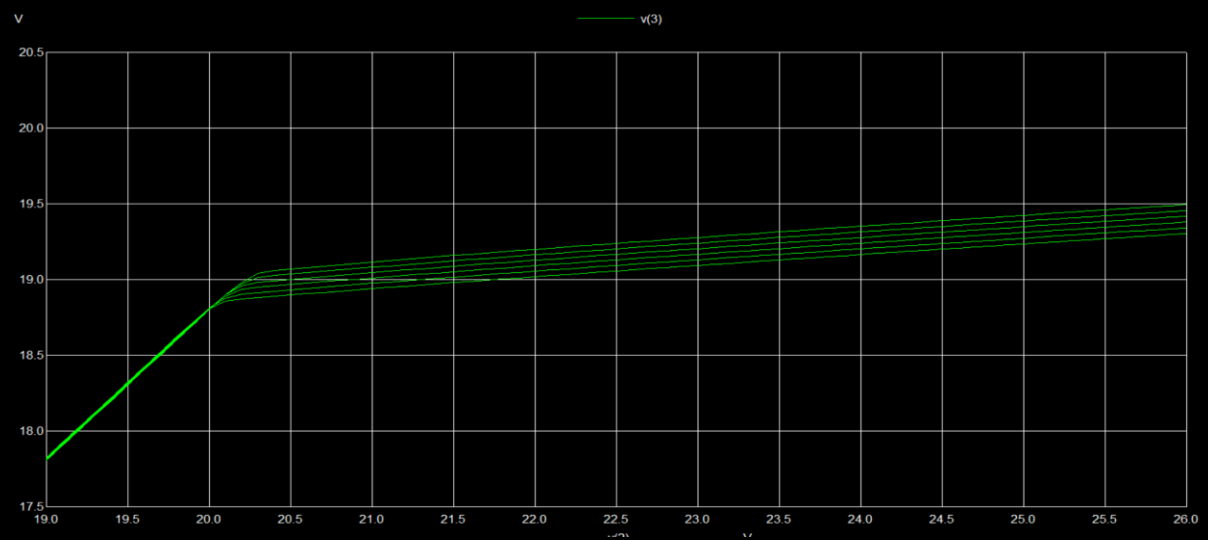
- 18V Zener → 3.52 mV/°C (Approx.)
- PN Diode → 1.67 mV/°C (Approx.)

part B



$D1, D2$ are two compensating diodes.
 $(1N914) \rightarrow -1.67 \text{ mV}/^\circ\text{C} \quad \times 2 = (-3.34 \text{ mV}/^\circ\text{C})$
 $BZT52C18S \rightarrow 3.52 \text{ mV}/^\circ\text{C} \quad (\text{Approx})$

Without Compensation →



With Compensation →

