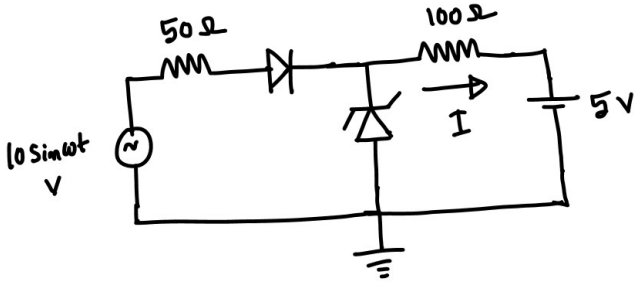
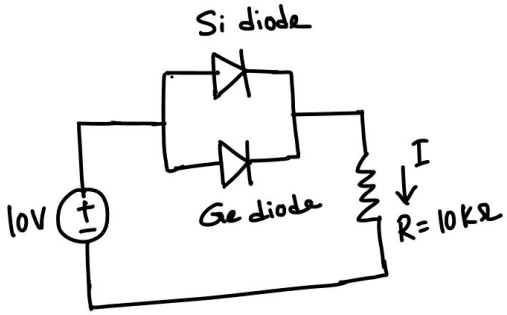
Basic Electronics (Test – 1, Part - B)

[Please follow the instructions as mentioned in the Part-A of this question paper.]

5. In the following circuit find the magnitude of current I in mA if the input voltage is 10 sin (ωt) V. Consider the diodes are ideal (V_γ = 0) and Zener breakdown voltage (V_Z) is 5 V. **[2]**



6. Two different diodes are connected as shown the following figure. Estimate the current flowing through 10 kohm resistor. Given that, cut-in voltage for Si and Ge diodes are 0.7 V and 0.3 V respectively at T = 300 K. **[2]**



7. For the following low pass filter circuit, estimate the cut-off frequency. Find the magnitude of the output voltage if the frequency of the input signal is 3 kHz. **[1+2]**