

Assignment 1: All questions carry equal weightage.

1. For the circuits shown in Fig.(1). Find the voltages V_o and the current flowing through the diodes:

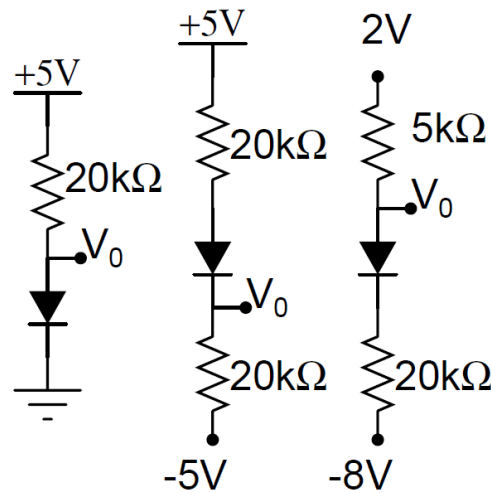


Fig.(1)

2. The input to the circuit shown in Fig.(2) is a 10V peak-to-peak sinewave of frequency 1kHz. Draw the input and resulting output on the same graph. Consider the diodes to be ideal.

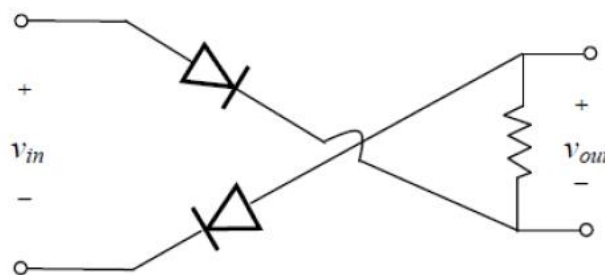


Fig.(2)

3. For the circuit shown in Fig.(3), the Zener diode is ideal with Zener breakdown voltage 6V. What is the output voltage V_o ?

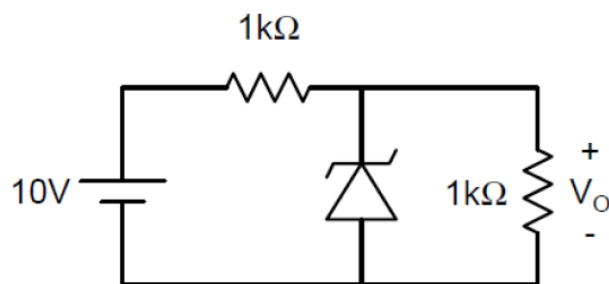


Fig.(3)

4. For the circuit shown in Fig.(4) the diodes are ideal. Sketch the output voltage v_o if the input voltage v_i is a sinusoid with an amplitude of 10V and frequency of 1kHz. Redraw the output when 1k is replaced by 2k.

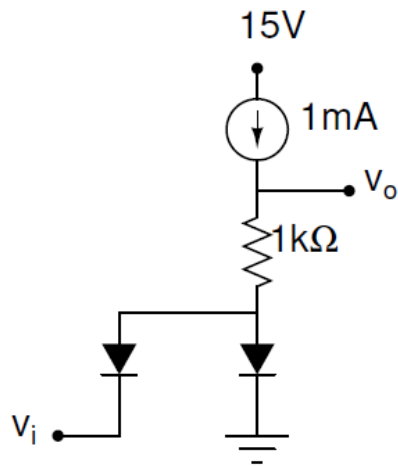


Fig.(4)

5. Two silicon diodes with a forward drop of 0.7V, are used in the circuit shown in Fig.(5). The range of input voltage for which $V_o = V_i$ is _____.

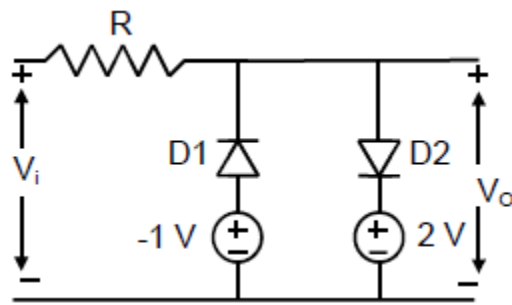


Fig.(5)

Notes

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