TUTORIAL 1

EE104: BASICS OF ELECTRICAL AND ELECTRONICS ENGIEERING

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1. Determine the Vo and ID for the networks as shown in figure Q1 using
   a. Ideal Diode Model
   b. Approximate diode model with VF = 0.7 V.

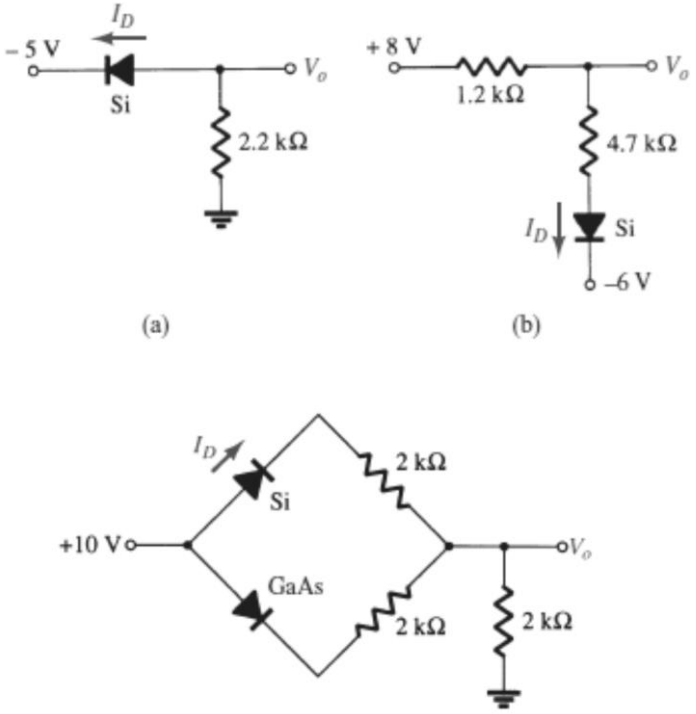

Figure Q1.

2. Find the average value of each voltage as shown in figure Q2.

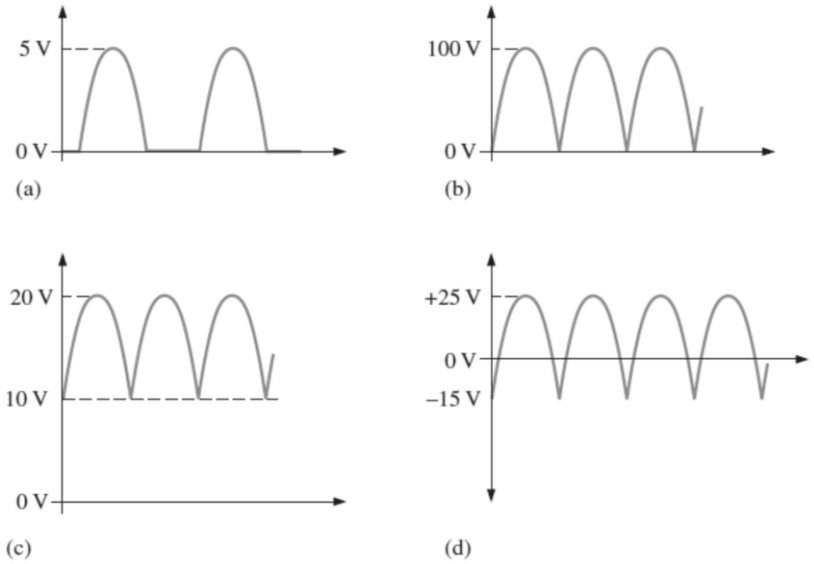

Figure Q2.

3. If for the circuit of figure Q3, the output DC voltage is 2 V, then sketch Vi, Id and Vd.

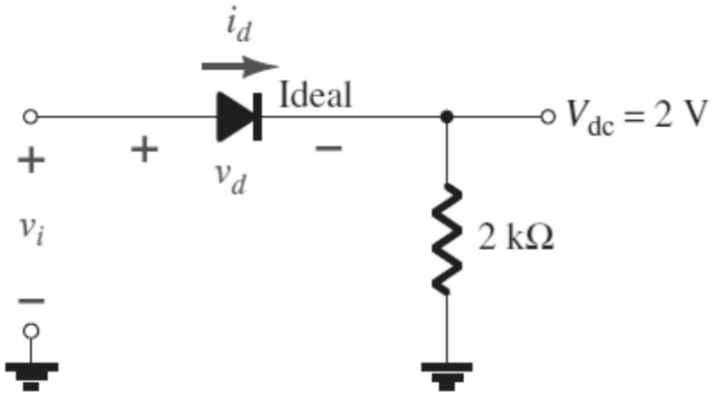

Figure Q3.

4. For the network of figure Q4, sketch Vo and I_R.

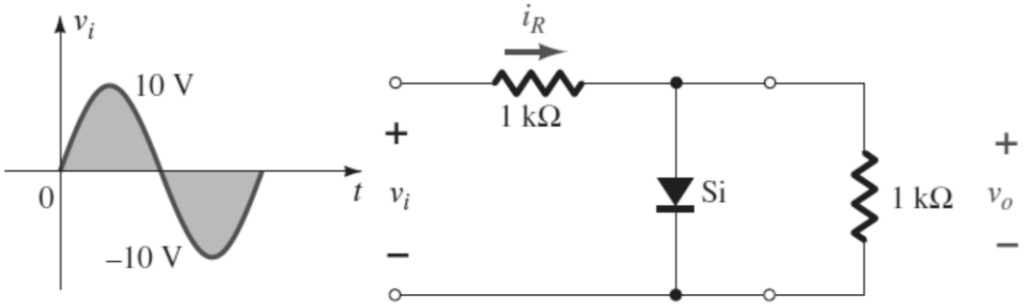

Figure Q4.

5. Determine Vo and required PIV rating of each diode for the network in figure Q5. Also determine the maximum current through each diode.

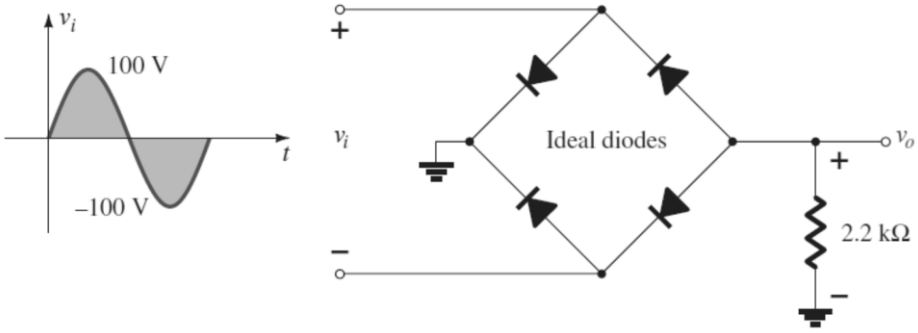

Figure Q5.

6. For the bridge rectifier with capacitive filter which is shown in figure Q6, determine the output voltage ripple.

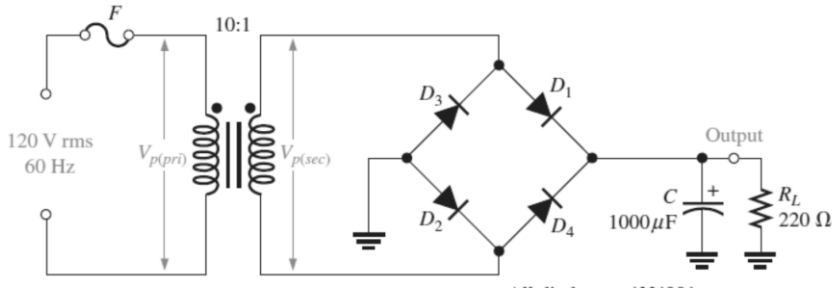

Figure Q6.

7. Determine the output voltage of each input voltage waveform as shown in figure Q7.

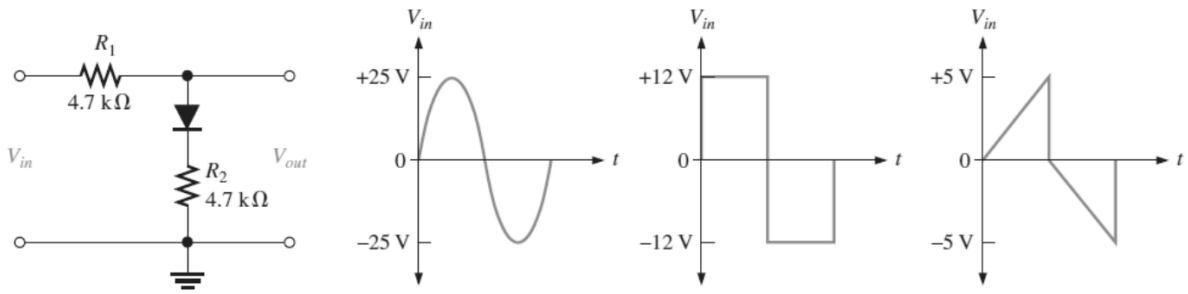

Figure Q7.

8. Determine Vo for the network of figure Q8 for the input shown.

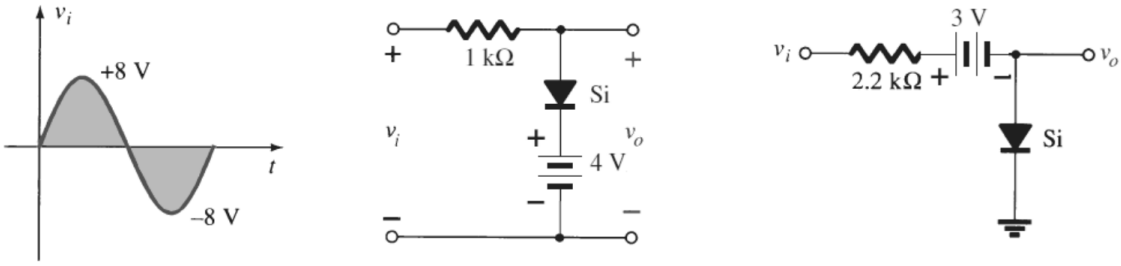

Figure Q8.

9. Describe output waveform of each circuit. Assume the RC circuit time constant is much greater than the period of the input.

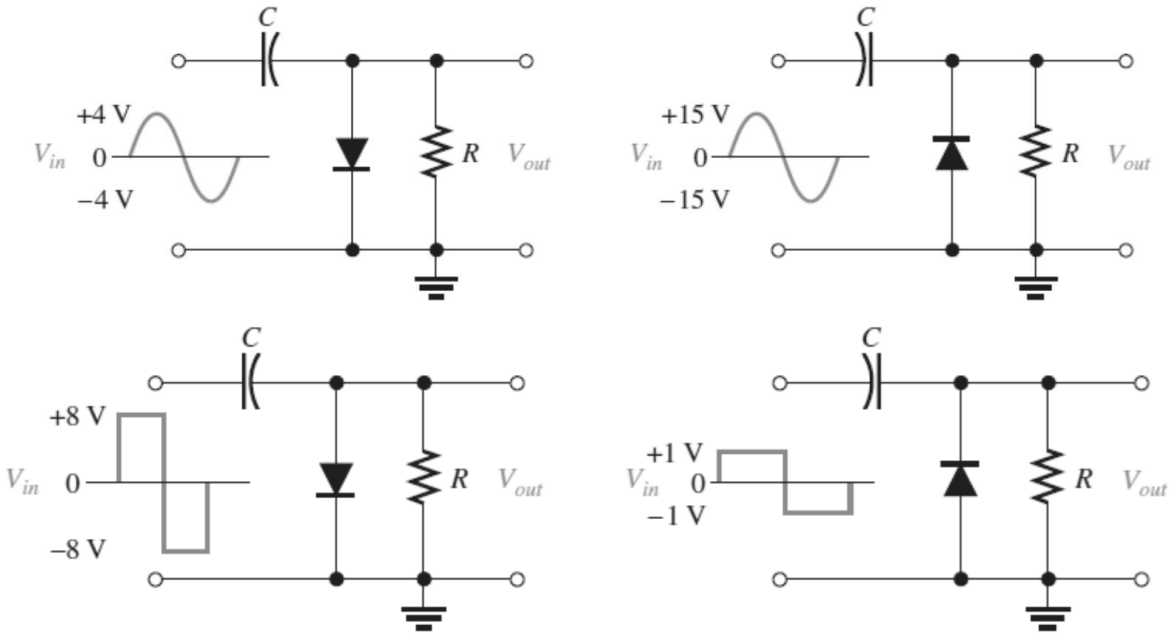

Figure Q9.