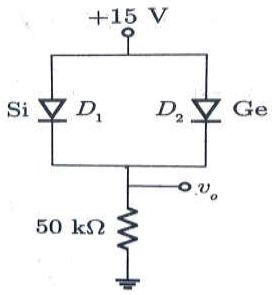
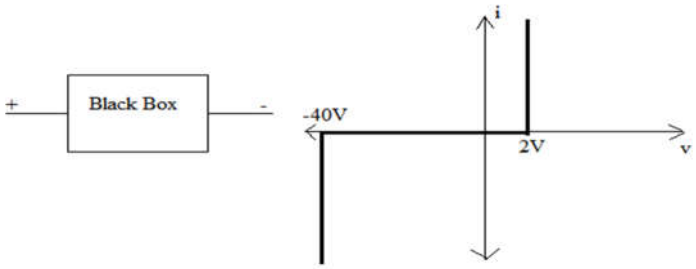
ELA-1110
PRINCIPLES OF ELECTRONICS ENGINEERING
TUTORIAL SHEET (UNIT-1 DIODE)

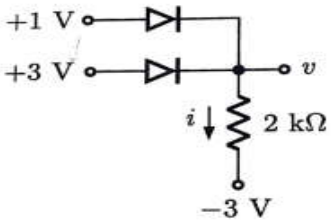
1. The diode in the circuit shown below have a linear parameter of V_T=0.7V (for Si), V_T=0.3V (for Ge) and r_f=0 for both the diodes. What is the biasing condition of diode D1 and D2 also find out the total current and the output voltage v_o of the circuit.



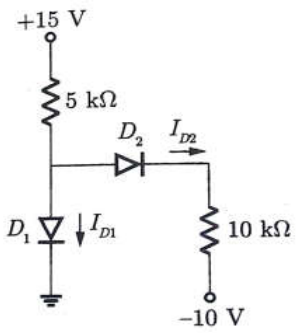
2. Draw the model for the black box using ideal diode for the given transfer characteristic.



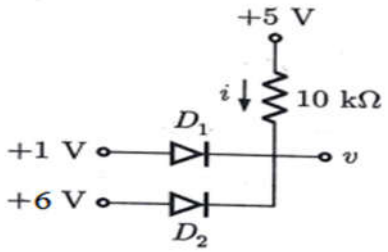
3. For the given circuit cutin voltage of diode is V_T=0.7V. What is the value of v and i.



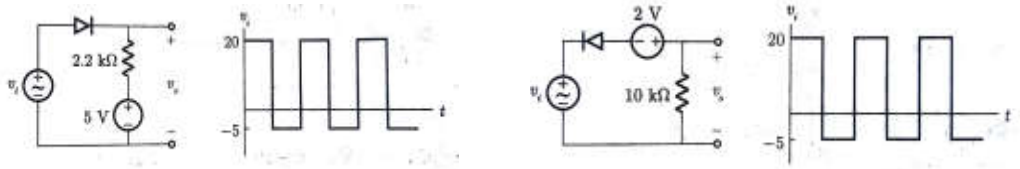
4. Assume that in the given circuit diodes are ideal. What is the value of currents I_{D1} and I_{D2}.



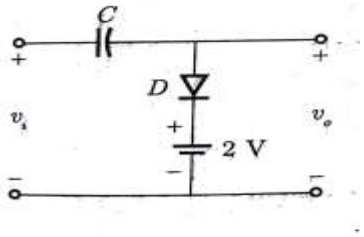
5. For the circuit shown below find out the value of v and i if the diodes are ideal.



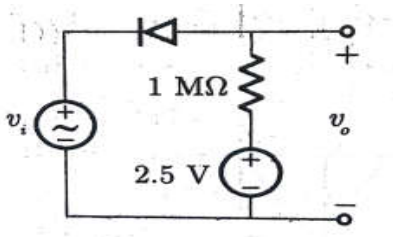
6. Consider the given circuits and waveform for the input voltage, shown in the figure below. The diode in the circuit has cutin voltage V_T=0, draw the waveform of output voltage v_0.



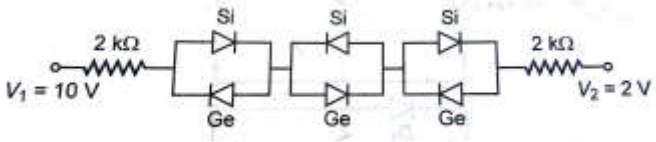
7. Assume that the diode cutin voltage for the circuit shown below is V_T=0.7V. Find out the output of the given clamper circuit.



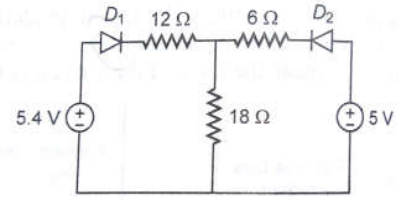
8. A symmetrical 5KHz square wave whose output varies between +10V and -10V is impressed upon the clipping shown in figure below, draw the output waveform of the circuit (the diode has r_f=0, r_r=2MΩ and V_T=0).



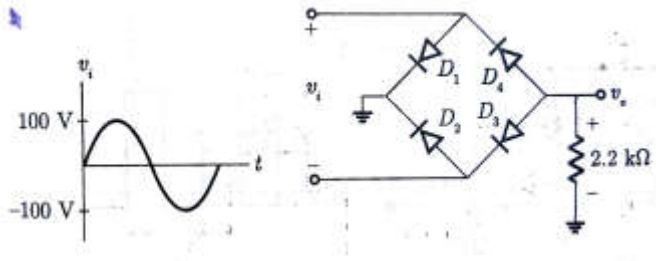
9. Determine the current in the network.



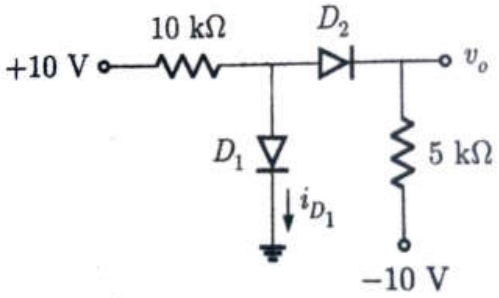
10. In the circuit shown below, diode have cutin voltage of 0.6V. Determine which of the diode is in On state.



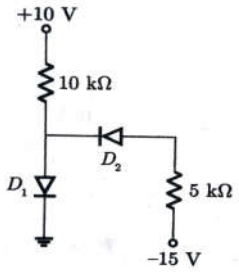
11. For the given rectifier circuit and its input waveform find out the out waveform, assume the diode to be ideal.



12. Let the cutin voltage equal to 0.7V for each diode in the circuit shown below. What is the voltage v_0.



13. For the diode circuit given below assume the diode is ideal. Find out the operating states of the diode D_1 and D_2.



14. Assuming that the diodes in the given circuit are ideal, find out the current I_{D1} and I_{D2}.