ENEE302, Section 0201 and 0202

HOMEWORK 1

02/13/02 DK

Due:02/21/02

NOTE: Only the problems marked with points are to be turned in and graded.
Simulate using the diode D1N4002 for the PSpice problems.

1. Figure 1 is the circuit for a full wave rectifier. The input voltage is V1 = 5sin(200πt). Using PSpice and normal calculations find the output voltage Vo. (25 pts)

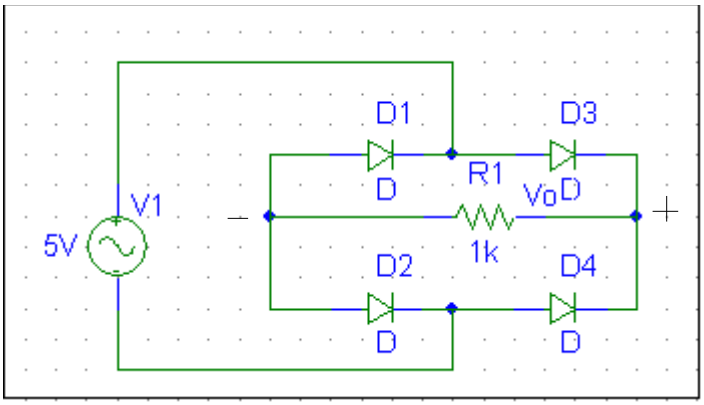

Fig.1

2. In Fig. 2 find the value of i(1) , i(2) and i(3). (PSpice simulation not needed).

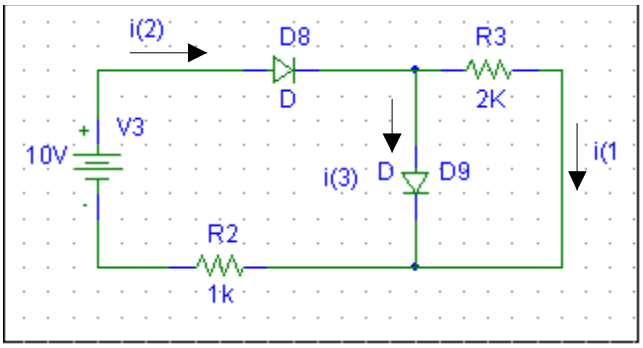

Fig. 2

3. Determine the output waveform for the network given in Fig. 3 for the two cases when V9= 5V, 10V and Vi =20 sin(200πt). How would you name this circuit? Also show the output Vo(t) using PSpice. (25 pts)

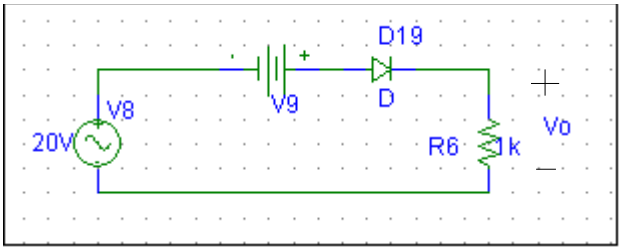

Fig. 3

4. What is the output voltage waveform Vo in Fig. 4, when the inputs are:
   a. V1=5V , V2=0V , V3=0V, V4=0V
   b. V1=0V , V2=0V , V3=0V, V4=0V

   Also show the output using PSpice. (50 pts)

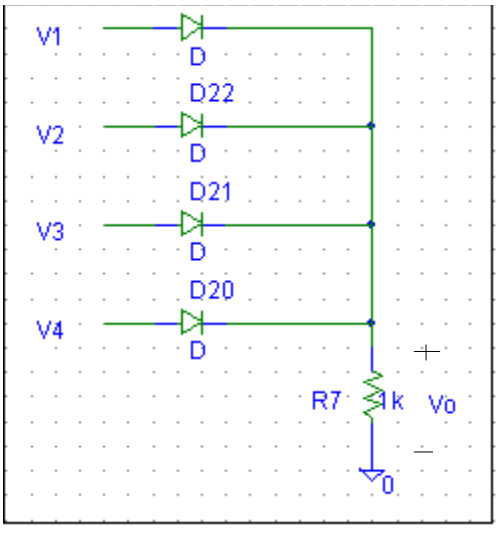

Fig. 4

5. Can transistors act as diodes? If so draw the circuit diagram and explain.