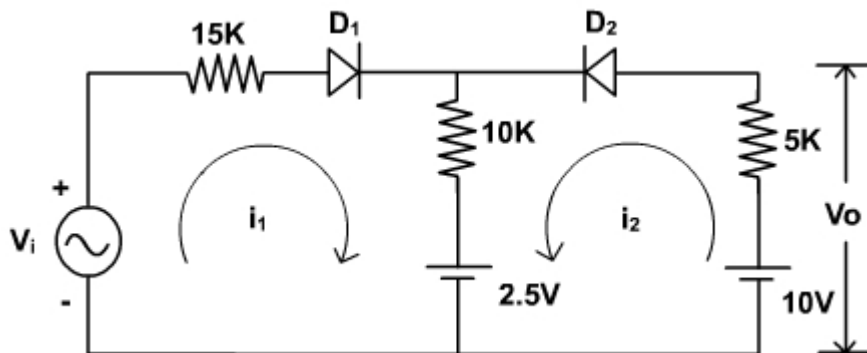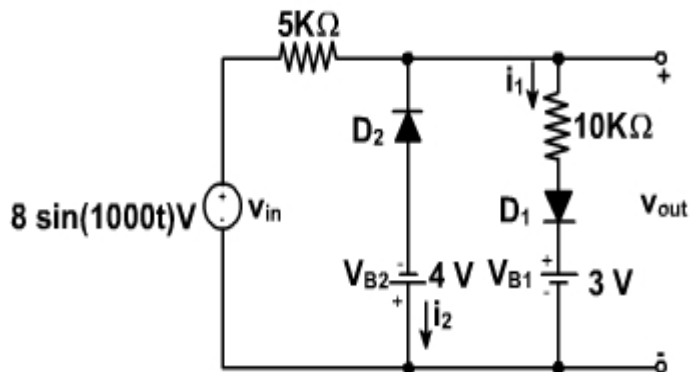# PH-218 Analog & Digital Electronics

Assignment-1 (Due date: 10th Jan 2011)

1. **Draw the transfer characteristic of the circuit shown in fig.**

2. **Find the output voltage V_{out} of the clipper circuit of figure given below assuming that the diodes are (a) Ideal and (b) $V_{on} = 0.7$ V. For both cases, assume R_F is zero.**

3. Calculate the output voltage for (a) $V_1 = V_2 = 0$ (b) $V_1 = 0$, $V_2 = 5$ and vice versa (c) $V_1 = V_2 = 5$. Which logic gate is represented by this circuit?
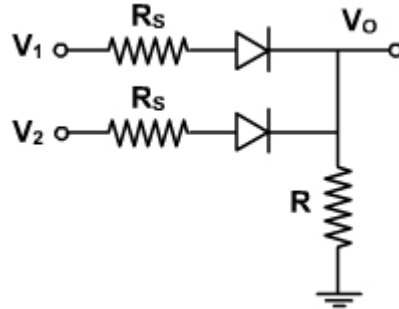
Given: Rs = 1kohm and R = 10kohm

4. Assuming a barrier potential of 0.7V and a reverse saturation current of 5nA at an ambient temperature of $25°C$, what is the barrier potential and reverse saturation current of Si diode when the junction temperature is $100°C$?

5. Sedra & Smith Edition 5: problem 3.112

6. Sedra & Smith Edition 5: problem 3.99

7. Sedra & Smith Edition 5: problem 3.77 and 3.78