

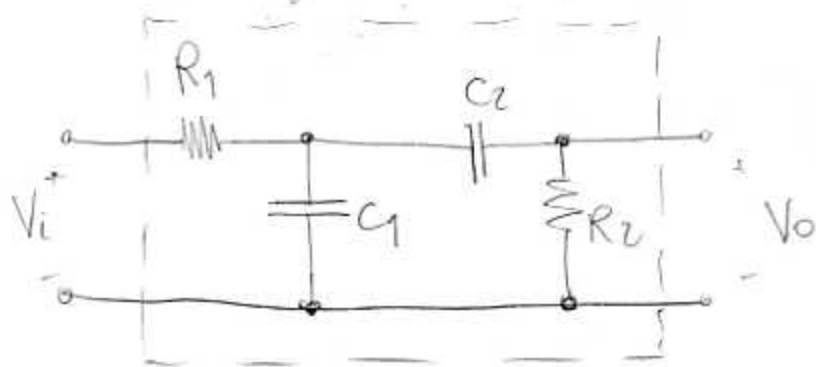
A) Given a circuit with an input port and an output port, containing capacitors, inductors and sources (controlled and independent):



Define its transfer function to be

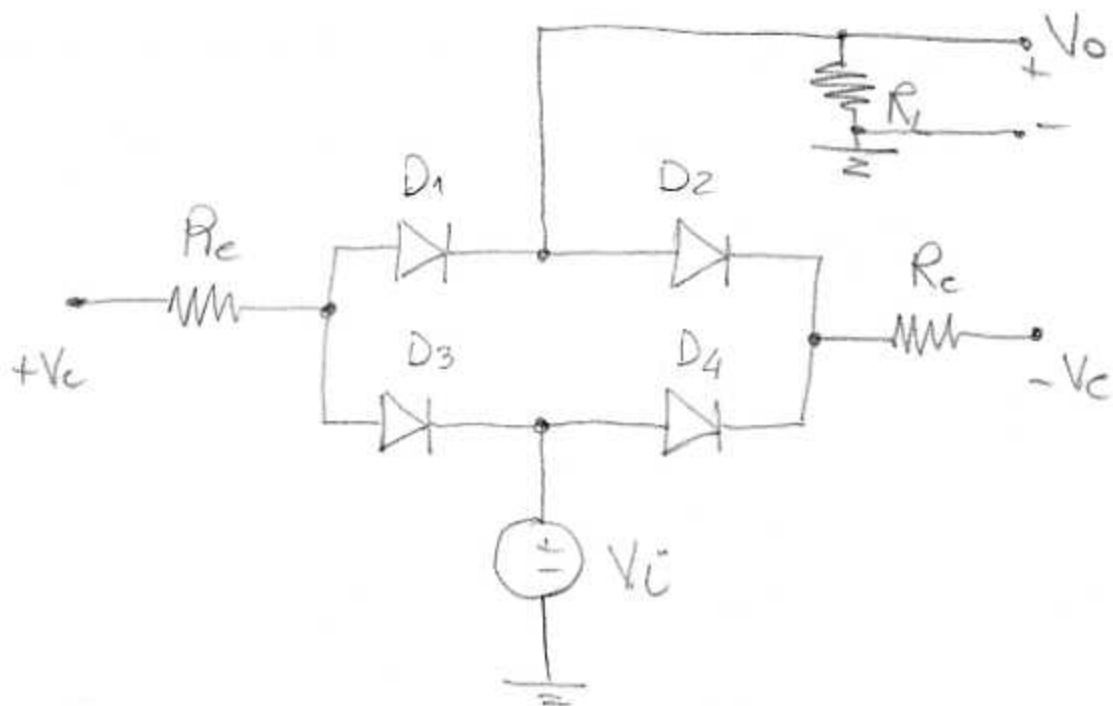
$$F(s) = \frac{V_o(s)}{V_i(s)}$$

A.1) For the following circuit:



Compute the transfer function. $F(s) = \frac{V_o(s)}{V_i(s)}$
and plot $|F(j\omega)|$.

B) Given the circuit:



Considering $V_f = 0$, $R_f = 0$, $R_L = \infty$:

B.1) Using the states methods:

I) Compute V_o for:

$$V_i = 5V$$

$$R_c = R_L$$

$$V_c = 20V$$

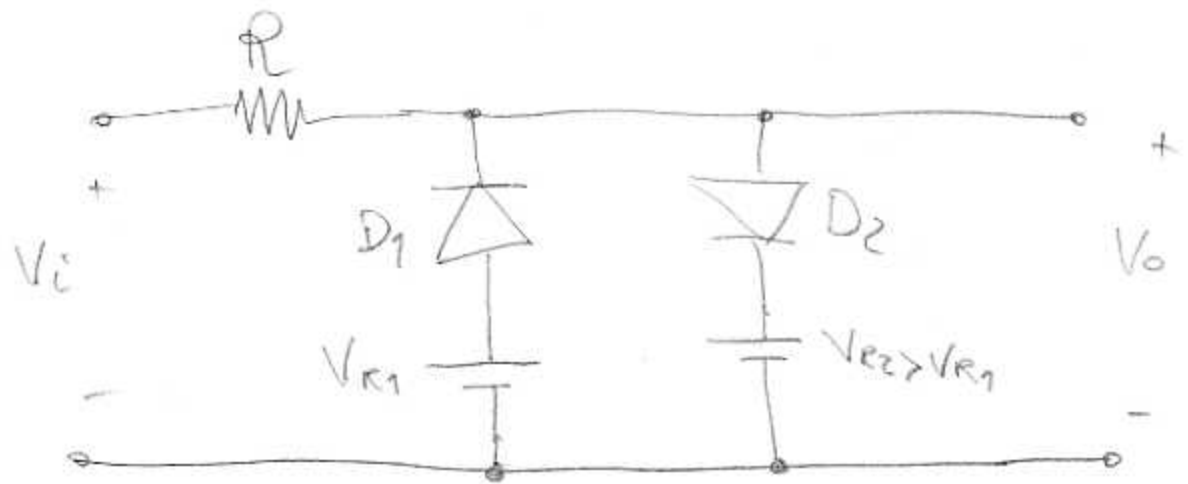
II) Compute V_o for:

$$V_i = 5V$$

$$R_c = R_L$$

$$V_c = -1V$$

C) Given the circuit



C1) Draw the transfer characteristic.