

# Electronic Instrumentation

## Problem sheet: OpAmps

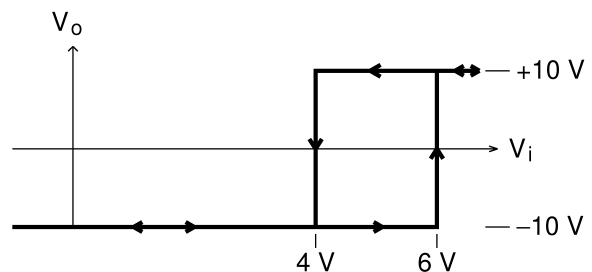
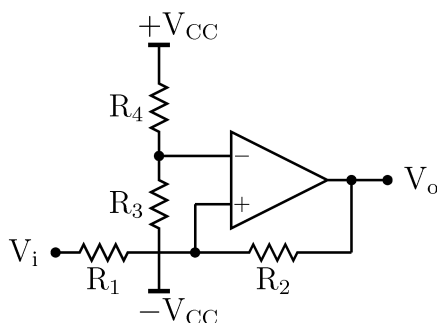
2011/2012 module 2

P. Stallnga

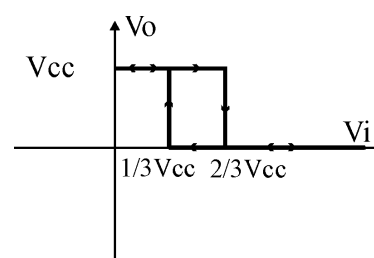
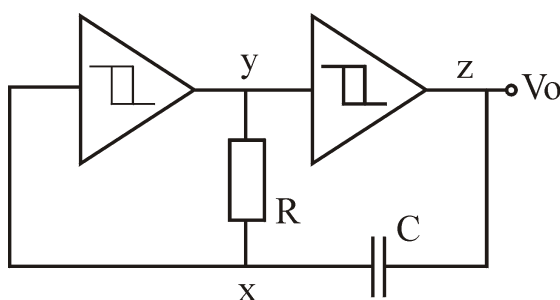


MIEET 3º ano

1: Design the circuit below so that it is bistable with the following relation between  $V_o$  and  $V_i$ :



2: Consider the instable circuit ('oscillator') implemented with two Schmitt-triggers:



- Explain how the circuit works by sketching the voltages as a function of time in the points **x**, **y** and **z**.
- Determine the period of oscillation of the circuit.
- Give values for  $R$  and  $C$  to result in an oscillation frequency equal to  $f = 10$  kHz.