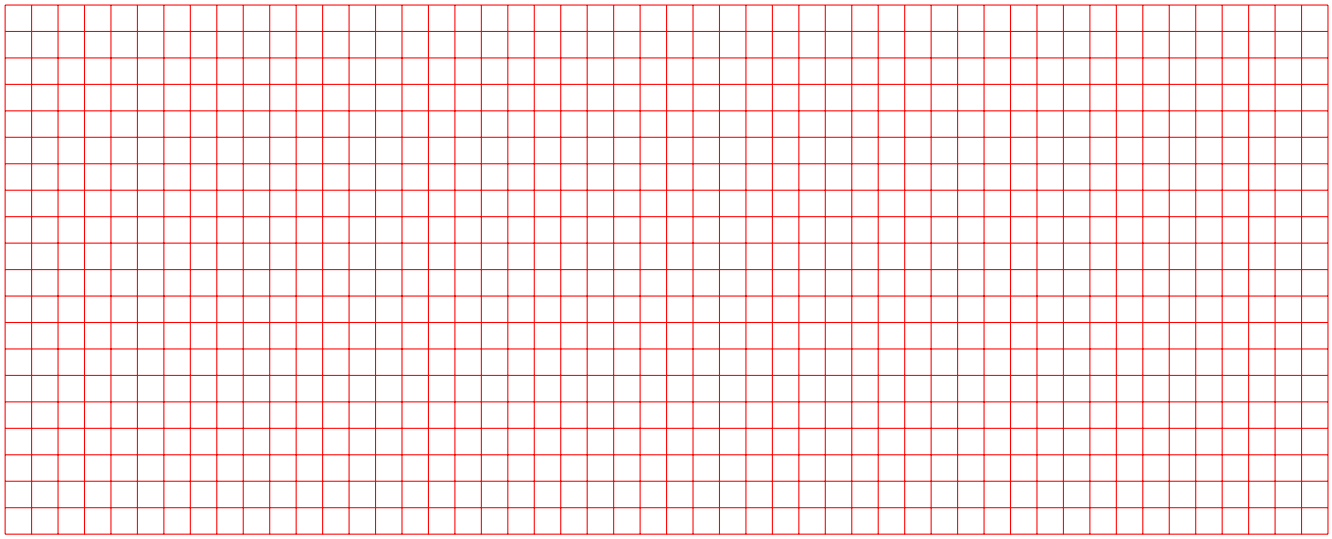
Amplitude Modulation - Preparation

- **Name:** **Lab Date:**
- **Student No.:** **Day of the week:** **Time:**

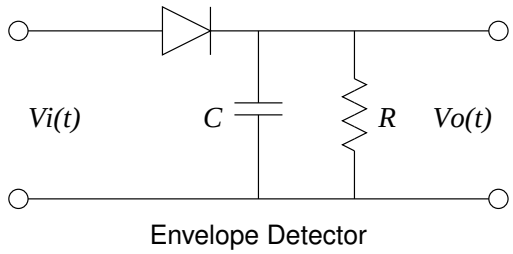
1. Write an equation for an AM-modulated signal (AM-DSB), and explain the significance of all constants in the equation. Present a `Simulink`-style block diagram to implement an AM modulator. **(2pt)**

2. Sketch the AM modulated signal (assume sinusoidal signal modulating a sinusoidal carrier) in both time and frequency domain. Remember, graphs with missing labels and values will be graded with zero. **(3pt)**



3. Explain overmodulation, with pictures for time domain and frequency domain.**(1pt)**

4. Calculate the values for *R* and *C* on the envelope detector given below. Explain the role of the diode, resistor and capacitor on the demodulation of the AM signal. **(2pt)**



Envelope Detector

5. Suppose the carrier is not transmitted (AM-DSB SC). Explain (words or block diagram) how the message signal could be recovered. **(2pt)**