### Assignment 2

* Using the bilinear transformation design a digital elliptic bandstop filter operating at a sampling rate of 9 kHz with the following specifications: passband edges at 0.19 kHz and 4.2 kHz, stopband edges at 2.5 kHz and 3.3 kHz, peak passband ripple of 1.2dB, and minimum stopband attenuation of 35 dB.
* Display the frequency response (magnitude and phase) of the designed filter in the analog domain.
* Display the frequency response (magnitude and phase) of the designed filter in the digital domain.
* Realize the designed filter twice making use of two different digital filter structures.
* Generate a digital input signal with frequencies up to 4.5 kHz.
* Determine the output of both realizations of the digital filter for the specified input signal.
* Display and compare the input and output signals, for both realizations of the digital filter, in the time domain.
* Display and compare the input and output signals, for both realizations of the digital filter, in the frequency domain.