1. Determine the system function H(z) of the lowest order Chebyshev filter that meets the following specifications which has 1 dB ripple in the passband atleast 20 dB attenuation in the stopband , use bilinear transformation. **(20 marks)**

Answer key:

N=2.567, and.

ẟp = 0.11, ẟs = 0.1 and N= 2.567 (N=3)

d= 0.05, K= 0.45

A digital lowpass filter is required to meet the following specifications:

1. The filter must have a maximally flat frequency response. Find H (z) to meet the above specifications using impulse invariant transformation. **(20 marks)**

Answer key

N=2

Ωc = 0.7255

1. An LTI system is described by the equation Determine the parallel realization structure of the system. **(10 marks)**

