Assignment-3

1. Design a butter worth IIR LPF that satisfies this specifications:
   Passband ripple ≤ 7.2 dB
   Stopband attenuation ≥ 30 dB
   Passband edge frequency =0.25 π rad/sec
   Stopband edge frequency =0.75 π rad/sec
   [Hint:

f_p	The passband corner frequency in Hz
f_s	The stopband corner frequency in Hz
A_p	The attenuation in db at Ω_p
A_s	The attenuation in db at Ω_s

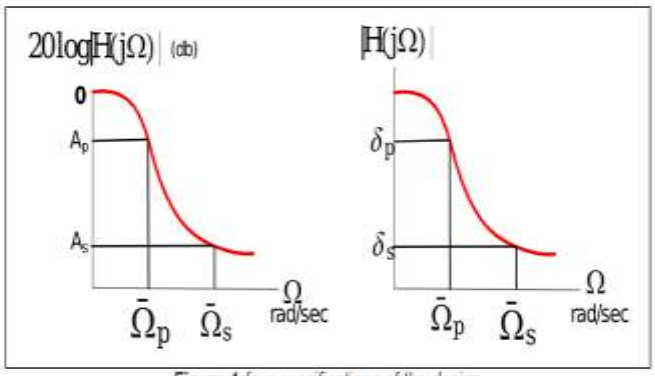

Figure 1:four specifications of the design

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2. The desired frequency response of $H_d(e^{jw})$= 1, for $-\pi/2 \le \omega \le \pi/2$
   =0, for $-\pi/2 \le |\omega| \le \pi$

   Determine filter coefficients and resultant frequency response of the filter, N=11 [Hint: frequency response means sub. $Z= e^{jw}$ in obtained H(z)].

3. Define finite word length effect and explain in brief.