

بالقلم

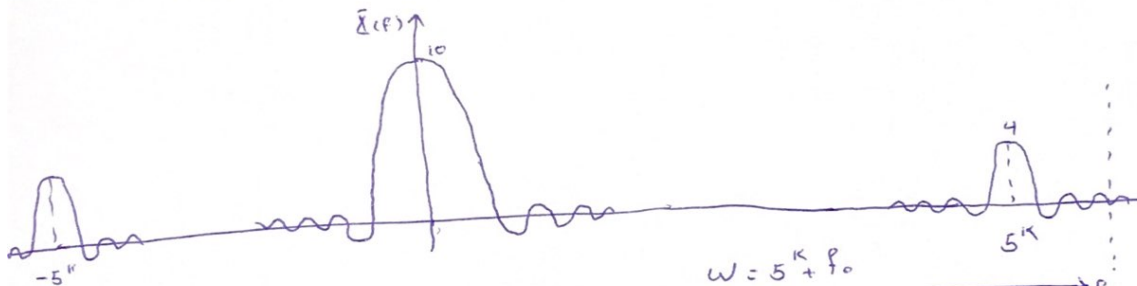
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۹۸۱۴۳۵۳۳

امتحان رسم مقابله

#1 $x(t) = 10 \Pi\left(\frac{t}{1}\right) + 200 \Pi\left(\frac{t}{0.02}\right) \cos(10000 \pi t)$

$\leftrightarrow \bar{X}(f) = 10 \text{Sinc}(f) + 4 \text{Sinc}(0.02(f \pm 5000))$



$\omega = 5K + f_0$

$\text{Sinc}(\alpha f) = \frac{1}{\pi \alpha f} = 10^{-6} \Rightarrow$

$\frac{f_d}{f_{d1}} = \frac{120 \text{ kHz}}{100 \text{ Hz}} = 1200$

$2^n \geq 1200 \Rightarrow n = 11$

$2^{11} = 2048$

$H(f) = \begin{cases} f e^{-j5\pi f^2} & 0 < |f| < 1 \text{ kHz} \\ 3 e^{-j10\pi f} & 1^M < |f| < 1.225^M \\ 10 e^{-j(20\pi f + \frac{\pi}{10})} & 1.225 < |f| < 2^M \\ 12 e^{-j30\pi f} & 2^M < |f| < 2.6^M \\ 0 & \text{other} \end{cases}$

