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(1) $X(w) = 2\pi(\delta(w+45)+\delta(w+35)+\delta(w+25)+\delta(w+15)+\delta(w+5)$
$+\delta(w-5)+\delta(w-15)+\delta(w-25)+\delta(w-35)+\delta(w-45))$

$$h(t) = \frac{20}{2\pi}\operatorname{sinc}\left(\frac{20}{2\pi}t\right) + \frac{40}{2\pi}\operatorname{sinc}\left(\frac{40}{2\pi}t\right) + \frac{60}{2\pi}\cdot\operatorname{sinc}\left(\frac{60}{2\pi}t\right)$$

$$H(w) = \operatorname{rect}\left(\frac{w}{20}\right) + \operatorname{rect}\left(\frac{w}{40}\right) + \operatorname{rect}\left(\frac{w}{60}\right)$$

Thus. $X_1(w) = X(w)\cdot H(w)$

$$= \boxed{6\pi(\delta(w-5)+\delta(w+5)) + 4\pi(\delta(w-15)+\delta(w+15)) + 2\pi(\delta(w-25)+\delta(w+25))}$$

(2) $w_s = 40$, $T_s = \frac{\pi}{20}$.

$$X_s(w) = \frac{20}{\pi}\cdot\sum_{k=-\infty}^{+\infty} X_1(w-kw_s) = \frac{20}{\pi}\cdot\sum_{k=-\infty}^{+\infty} X_1(w-40k)$$

Since $H_2(w) = \operatorname{rect}\left(\frac{w}{80}\right)$, we only need to find $w\in[-40,40]$.

$$Z(w) = \frac{20}{\pi}\cdot 2\pi\cdot\Big[3(\delta(w-5)+\delta(w+5)) + 3(\delta(w-15)+\delta(w+15)) + 3(\delta(w-25)+\delta(w+25)) + 3(\delta(w-35)+\delta(w+35))\Big]$$

$$= 120(\delta(w-5)+\delta(w+5)+\delta(w-15)+\delta(w+15)+\delta(w-25)+\delta(w+25)+\delta(w-35)+\delta(w+35)]$$

Thus, $Z(t) = \frac{60}{\pi}\cdot(e^{-5jt}+e^{5jt}+e^{-15jt}+e^{15jt}+e^{-25jt}+e^{25jt}+e^{-35jt}+e^{35jt})$

$$= \boxed{\frac{120}{\pi}\cdot(\cos(5t)+\cos(15t)+\cos(25t)+\cos(35t))}$$