EHB 351 FİNAL

SORU-3

Alp Alport
040150028

A $2\pi\Delta f = 2\pi 30$ $\quad f_m = 10\,kHz$ $\quad f_c = 10^5$

$\Delta f = 30\,Hz$ $\quad \Delta f' = 14,58\,kHz$

$f_c' = 3.10^3\,kHz$

$$n = \frac{\Delta f'}{\Delta f} = 486 = 2.3^5$$

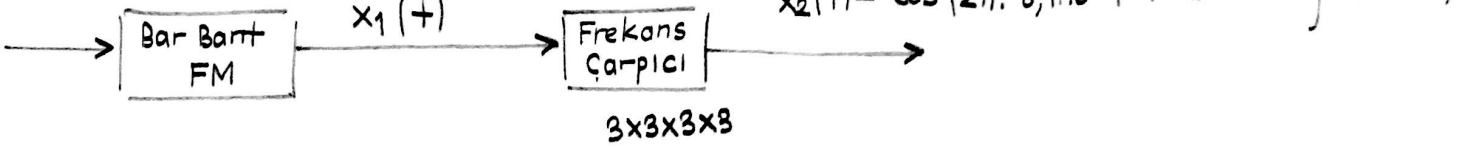
6 tane

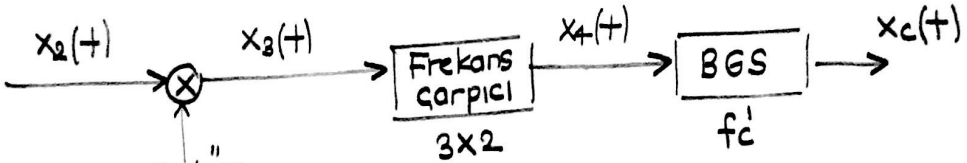
$$n < \frac{f_c - 2f_m}{2\Delta f} - \frac{1}{2}$$

B 4 adet 3 frekans çarpıcı kullanılırsa

$n < 83$ olmalı

$\rightarrow n = 81 < 83$





$$x_3(+) = \frac{1}{2}\cos(2\pi 81.10^5 + + 2\pi\ 2430 \int x(\tau)d\tau) + \frac{1}{2}\cos(2\pi\ 2430 \int x(\tau)d\tau)$$

$$x_4(+) = \frac{1}{2}\cos(2\pi 6.81.10^5 + + 2\pi.2430.6 \int x(\tau)d\tau) + \frac{1}{2}\cos(2\pi.2430.6.\int x(\tau)d\tau)$$

$$x_c(+) = \frac{1}{2}\cos(2\pi.3.10^6 + + 2\pi.\ 14,58.10^3 \int x(\tau)d\tau)$$

C. $2(f_m + \Delta f') = 2(10^3 + 14,58.10^3) = 31,16\,kHz$