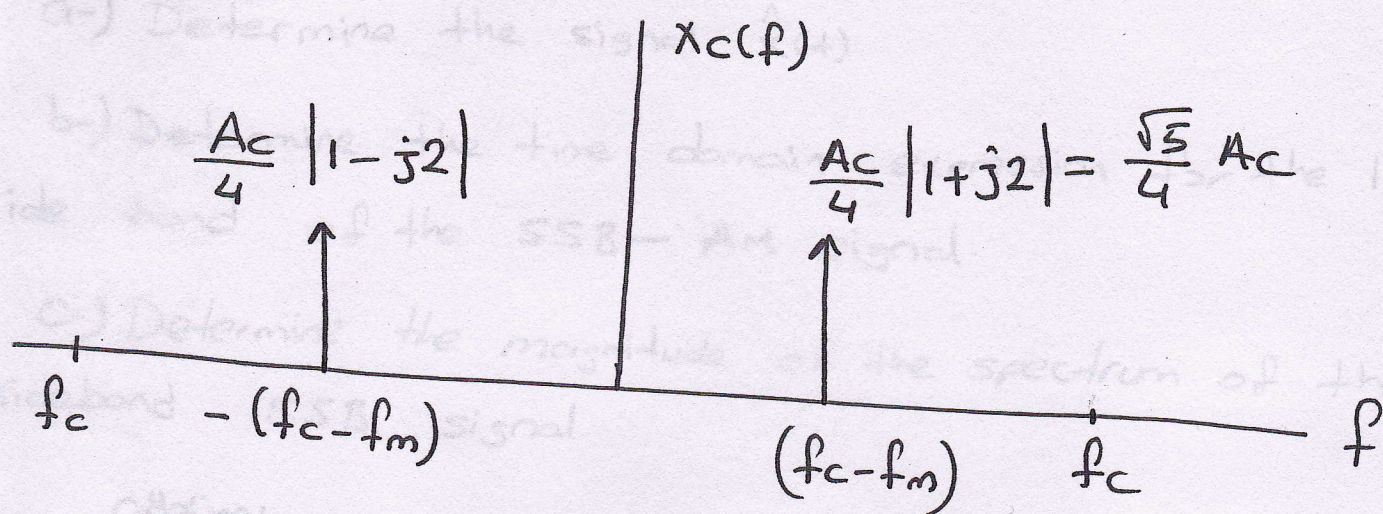


$$X_c(f) = \frac{A_c}{4} \left[\delta(f-f_c+f_m) + \delta(f+f_c-f_m) + j2\delta(f-f_c+f_m) - j2\delta(f+f_c-f_m) \right]$$



$$a) x(t) = \sin 2000\pi t + 2 \cos 2000\pi t$$

$$b) X_c(f) = \frac{A_c}{2} [m(f) \cos 2\pi f_c t + \hat{m}(f) \sin 2\pi f_c t]$$

$$c) X_c(f) = \frac{A_c}{2} [(\cos 2\pi f_m t + 2 \sin 2\pi f_m t) \cos 2\pi f_c t + (\sin 2\pi f_m t - 2 \cos 2\pi f_m t) \sin 2\pi f_c t]$$

$$x(t) = \frac{A_c}{4} [\cos(\omega_c + \omega_m)t + \cos(\omega_c - \omega_m)t + 2 \sin(\omega_c + \omega_m)t - 2 \sin(\omega_c - \omega_m)t]$$

$$= \frac{A_c}{4} [\cos(\omega_c + \omega_m)t + \cos(\omega_c - \omega_m)t + 2 \sin(\omega_c + \omega_m)t - 2 \sin(\omega_c - \omega_m)t]$$

$$= \frac{A_c}{2} [\cos(\omega_c - \omega_m)t + 2 \sin(\omega_c - \omega_m)t]$$

$$X_c(f) = \frac{A_c}{4} [\delta(f-f_c+f_m) + \delta(f+f_c-f_m) + j2\delta(f-f_c+f_m) - j2\delta(f+f_c-f_m)]$$