IYINOLUWA OYELEYE EMMANUEL

COMPUTER ENG EEE 322 18/ENG02/106

a) $R = 100k\Omega$

$L = 20mH$

$C = 5nF$

Calc W_o W_1, W_2, Q and B

$$W_o = \frac{1}{\sqrt{LC}} = \frac{1}{\sqrt{20\times10^{-3} \times 5\times10^{-9}}}$$

$$= 100000$$

$$= 100k\ rad/s$$

$$W_1 = \frac{-1}{2RC} + \sqrt{\left(\frac{1}{2RC}\right)^2 + \frac{1}{LC}}$$

$$\sqrt{\left(\frac{1}{2RC}\right)^2 + \frac{1}{LC}} = \sqrt{\left(\frac{1}{2\times100\times10^3 \times 5\times10^{-9}}\right)^2 + \frac{1}{20\times10^{-3}\times 5\times10^{-9}}}$$

$$= 100005$$

$$W_1 = \frac{-1}{2RC} + 100005$$

$$W_1 = \frac{-1}{2\times100\times10^3\times5\times10^{-9}} + 100005$$

$$= -1000 + 100005$$

$$= 99005$$

$$= 99k\ rad/s$$

$$W_2 = \frac{+1}{2RC} + \sqrt{\left(\frac{1}{2RC}\right)^2 + \frac{1}{LC}}$$

$$1000 + 100005$$

$$101000$$

$$101k\ rad/s$$