

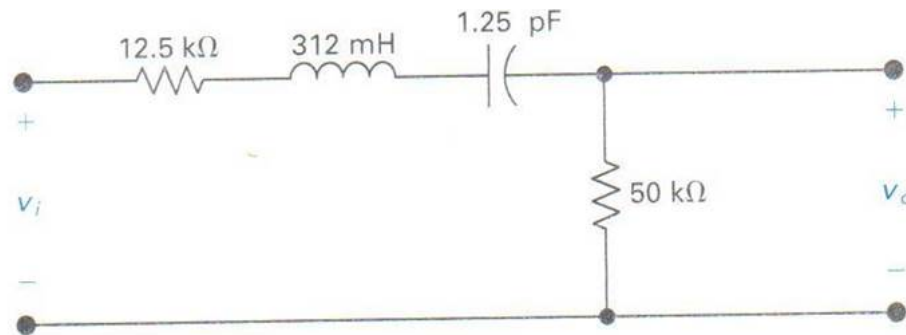
[Home](#) ► [My courses](#) ► [EEE117-2017S-Tatro](#) ► [Homework](#) ► [Homework 12 - Chapter 14](#)

<b>Started on</b>	Saturday, 22 April 2017, 10:13 PM
<b>State</b>	Finished
<b>Completed on</b>	Saturday, 22 April 2017, 10:14 PM
<b>Time taken</b>	22 secs
<b>Grade</b>	<b>100.00</b> out of 100.00

**Question 1**

Correct

Mark 25.00 out of 25.00



P14.13\_6ed

Given: 
$$H(s) = \frac{\frac{R_0}{L}s}{s^2 + \left(\frac{R_0 + R_{in}}{L}\right)s + \frac{1}{LC}}$$

Where  $R_0 = 50 \text{ k}\Omega$  (kilo Ohm) and  $R_{in} = 12.5 \text{ k}\Omega$  (kilo Ohm)

a) Find  $f_0$ .

$$f_0 = 254.8518720658 \quad \checkmark$$

kHz (kilo Hz)

b) Find  $Q$ .

$$Q = 8 \quad \checkmark$$

c) Find  $f_{c1}$ .

$$f_{c1} = 239.409 \quad \checkmark$$

kHz (kilo Hz)

d) Find  $f_{c2}$ .

$$f_{c2} = 271.29 \quad \checkmark$$

kHz (kilo Hz)

e) Find  $\beta$  (Beta).

$$\beta = (R + R_i)/L = 31.88 \quad \checkmark$$

kHz (kilo Hz)

a)  $f_0 = 254.8519 \text{ kHz}$

b)  $Q = 7.9936$

c)  $f_{c1} = 239.4089 \text{ kHz}$

d)  $f_{c2} = 271.2909 \text{ kHz}$

e)  $\downarrow\downarrow = 31.8820 \text{ kHz}$

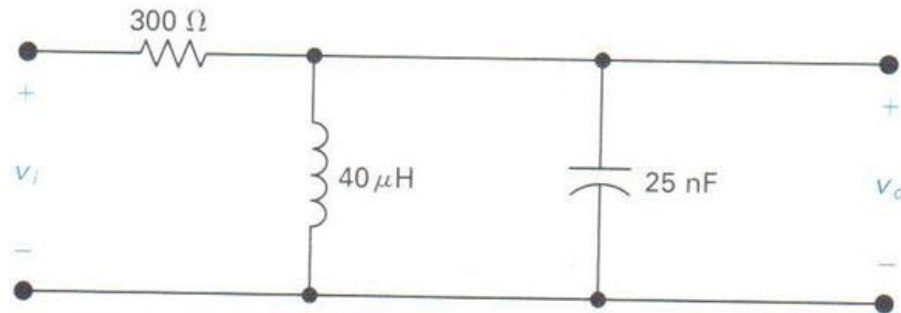
**Correct**

Marks for this submission: 25.00/25.00.

**Question 2**

Correct

Mark 25.00 out of 25.00



P14.12\_6ed

For this bandpass filter circuit, find the following values.

a) Find  $\omega_0$ .

$$\omega_0 = 1000 \quad \checkmark$$

krad/sec (kilo rad/sec)

b) Find  $f_0$ .

$$f_0 = 159.15 \quad \checkmark$$

kHz (kilo Hz)

c) Find  $Q$ .

$$Q = 7.5 \quad \checkmark$$

d) Find  $\omega_{c1}$ .

$$\omega_{c1} = 935.55 \quad \checkmark$$

krad/sec

e) Find  $\omega_{c2}$ .

$$\omega_{c2} = 1068.8 \quad \checkmark$$

krad/sec

f) Find  $\beta$  (Beta).

$$\beta = 133.3 \quad \checkmark$$

krad/sec

a)  $\omega_0 = 1,000$  krad/seca)  $f_0 = 159.1549$  kHzc)  $Q = 7.50$ d)  $\omega_{c1} = 935.5531$  krad/sec

e)  $\omega_{c2} = 1,068.8864 \text{ krad/sec}$

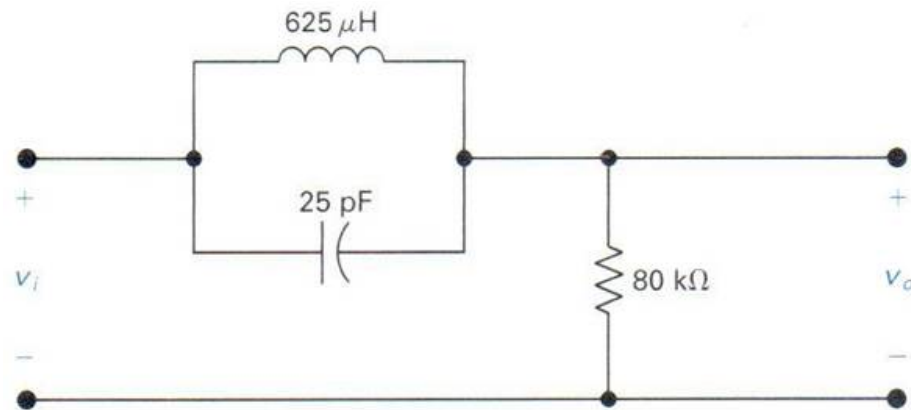
f)  $\Downarrow = 133.3333 \text{ krad/sec}$

**Correct**

Marks for this submission: 25.00/25.00.

**Question 3**

Correct

Mark 25.00 out of  
25.00

P14.27\_6ed

Given: 
$$H(s) = \frac{s^2 + \omega_0^2}{s^2 + \beta s + \omega_0^2}$$

For this bandreject filter:

a) Calculate  $\omega_0$ .

$$\omega_0 = 8000 \quad \checkmark$$

krad/sec (kilo rad/sec)

b) Calculate  $f_0$ .

$$f_0 = 1273 \quad \checkmark$$

kHz (kilo Hz)

c) Find Q.

$$Q = 16 \quad \checkmark$$

d) Find  $\omega_{c1}$ .

$$\omega_{c1} = 7753 \quad \checkmark$$

krad/sec (kilo rad/sec)

e) Find  $\omega_{c2}$ .

$$\omega_{c2} = 8253 \quad \checkmark$$

krad/sec (kilo rad/sec)

f) Find  $\beta$  (Beta).

$$\beta = 79.577 \quad \checkmark$$

kHz (kilo Hz)

- a)  $\omega_0 = 8,000$  krad/sec
- a)  $f_0 = 1,273.2395$  kHz
- b)  $Q = 16.0$
- c)  $\omega_{c1} = 7,753.9053$  krad/sec
- d)  $\omega_{c2} = 8,253.9053$  krad/sec
- e)  $\beta = 79.5775$  kHz

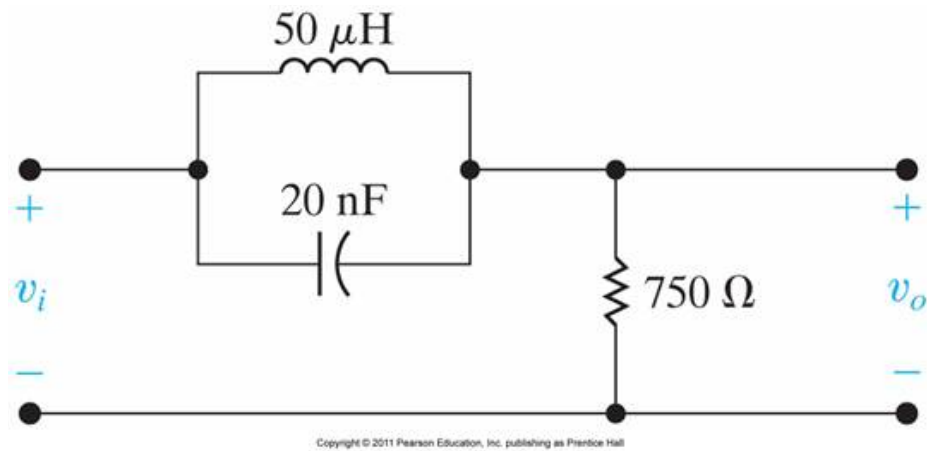
**Correct**

Marks for this submission: 25.00/25.00.

**Question 4**

Correct

Mark 25.00 out of 25.00



P14.35\_9ed

Given: 
$$H(s) = \frac{s^2 + \omega_0^2}{s^2 + \beta s + \omega_0^2}$$

For this bandreject filter:

a) Calculate  $\omega_0$ .

$$\omega_0 = 1000 \quad \checkmark$$

krad/sec (kilo rad/sec)

b) Calculate  $f_0$ .

$$f_0 = 159.15 \quad \checkmark$$

kHz (kilo Hz)

c) Find Q.

$$Q = 15 \quad \checkmark$$

d) Find  $\omega_{c1}$ .

$$\omega_{c1} = 967.22 \quad \checkmark$$

krad/sec (kilo rad/sec)

e) Find  $\omega_{c2}$ .

$$\omega_{c2} = 1030 \quad \checkmark$$

krad/sec (kilo rad/sec)

f) Find  $\beta$  (Beta).

$$\beta = 10.61 \quad \checkmark$$

kHz (kilo Hz)



- a)  $\omega_0 = 1,000$  krad/sec
- a)  $f_0 = 159.1549$  kHz
- b)  $Q = 15.0$
- c)  $\omega_{c1} = 967.2221$  krad/sec
- d)  $\omega_{c2} = 1,033.8887$  krad/sec
- e)  $\downarrow = 10.6103$  kHz

**Correct**

Marks for this submission: 25.00/25.00.