Started on	Friday, 14 April 2017, 2:34 PM
State	Finished
Completed on	Saturday, 22 April 2017, 6:38 PM
Time taken	8 days 4 hours
Grade	**100.00** out of 100.00
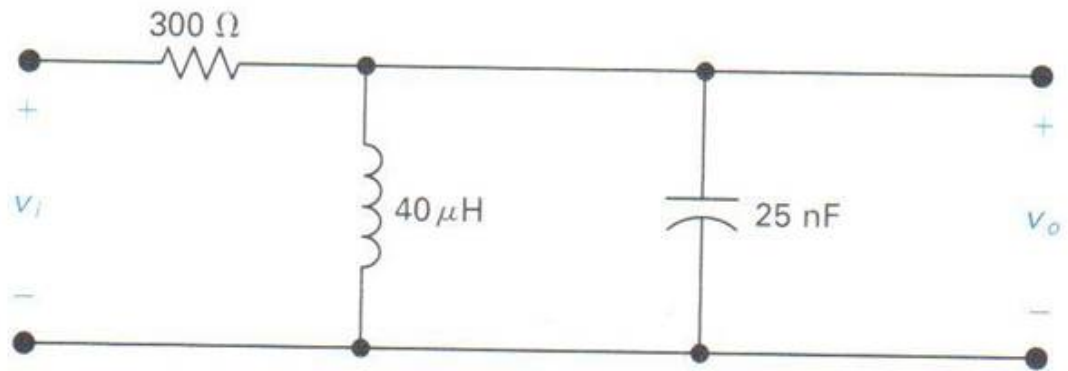
P14.12_6ed

For this bandpass filter circuit, find the following values.

a) Find ω_0.

$\omega_0 =$ 1000 ✓ krad/sec (kilo rad/sec)

b) Find f_0.

$f_0 =$ 159.155 ✓ kHz (kilo Hz)

c) Find Q.

$Q =$ 7.5 ✓

d) Find ω_{c1}.

$\omega_{c1} =$ 935.55 ✓ krad/sec

e) Find ω_{c2}.

$\omega_{c2} =$ 1068.88 ✓ krad/sec

f) Find β (Beta).

$\beta =$ 133.33 ✓ krad/sec

Correct

Marks for this submission: 25.00/25.00.
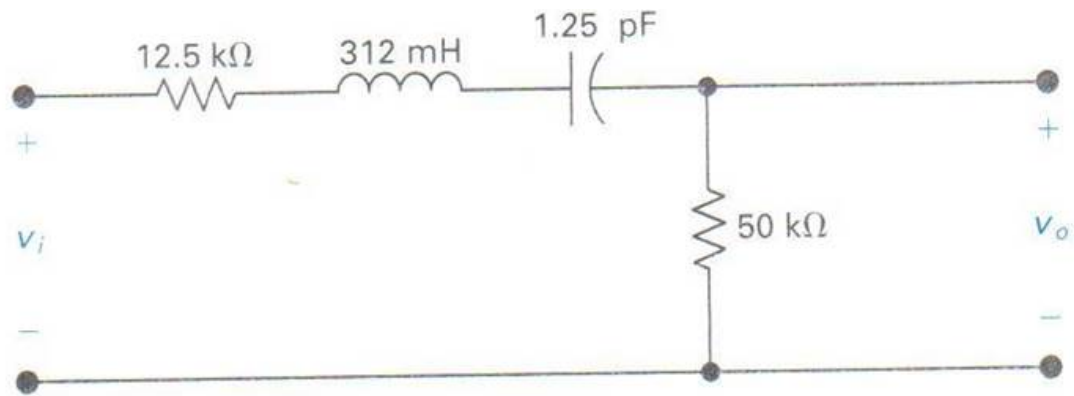
P14.13_6ed

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

Where $R_0 = 50$ kΩ (kilo Ohm) and $R_{in} = 12.5$ kΩ (kilo Ohm)

a) Find f_0.

$f_0 = $ | 254.64 | ✓ kHz (kilo Hz)

b) Find Q.

$Q = $ | 7.98 | ✓

c) Find f_{c1}.

$f_{c1} = $ | 239.41 | ✓ kHz (kilo Hz)

d) Find f_{c2}.

$f_{c2} = $ | 271.29 | ✓ kHz (kilo Hz)

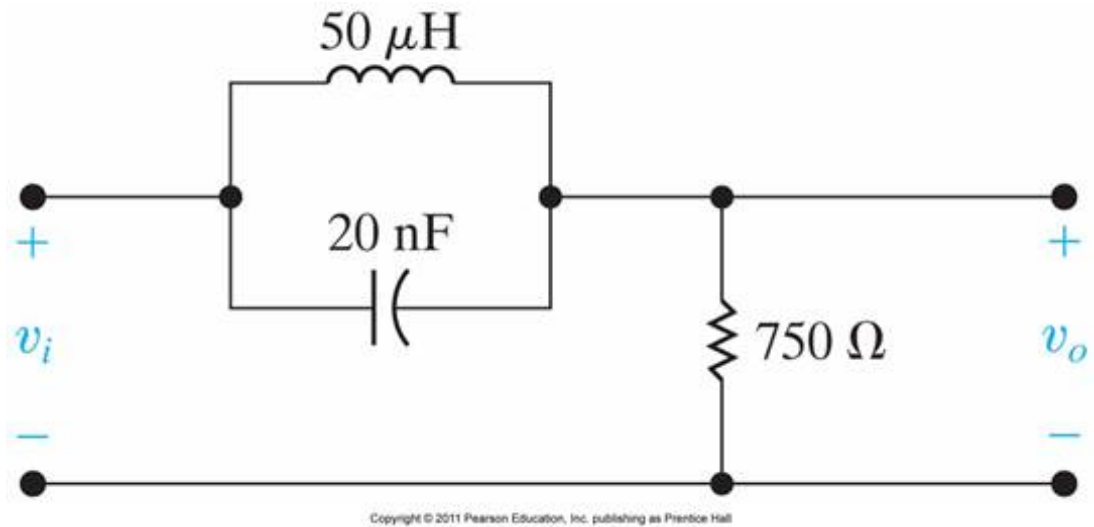e) Find β (Beta).

$β = (R + R_i)/L = $ | 31.88 | ✓ kHz (kilo Hz)

Correct

Marks for this submission: 25.00/25.00.

50 μH

20 nF

v_i

750 Ω

v_o

+

+

−

−

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P14.35_9ed

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

For this bandreject filter:

a) Calculate ω_0.

$\omega_0 =$ [1000] ✓ krad/sec (kilo rad/sec)

b) Calculate f_0.

$f_0 =$ [159.16] ✓ kHz (kilo Hz)

c) Find Q.

$Q =$ [15] ✓

d) Find ω_{c1}.

$\omega_{c1} =$ [967.22] ✓ krad/sec (kilo rad/sec)

e) Find ω_{c2}.

$\omega_{c2} =$ [1033.88] ✓ krad/sec (kilo rad/sec)

f) Find β (Beta).

$\beta =$ [10.61] ✓ kHz (kilo Hz)

Correct

Marks for this submission: 25.00/25.00.

$625\ \mu H$

$25\ pF$

$80\ k\Omega$

V_i

V_o
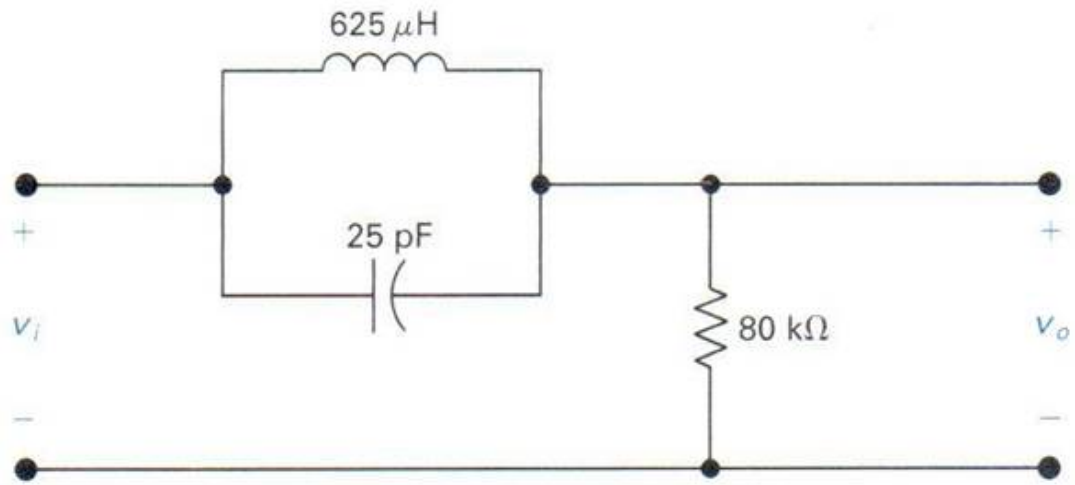
P14.27_6ed

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

For this bandreject filter:

a) Calculate ω_0.

$\omega_0 = $ 8000 ✓ krad/sec (kilo rad/sec)

b) Calculate f_0.

$f_0 = $ 1273.24 ✓ kHz (kilo Hz)

c) Find Q.

$Q = $ 16 ✓

d) Find ω_{c1}.

$\omega_{c1} = $ 7753.91 ✓ krad/sec (kilo rad/sec)

e) Find ω_{c2}.

$\omega_{c2} = $ 8253.91 ✓ krad/sec (kilo rad/sec)

f) Find β (Beta).

$\beta = $ 79.58 ✓ kHz (kilo Hz)

Correct

Marks for this submission: 25.00/25.00.