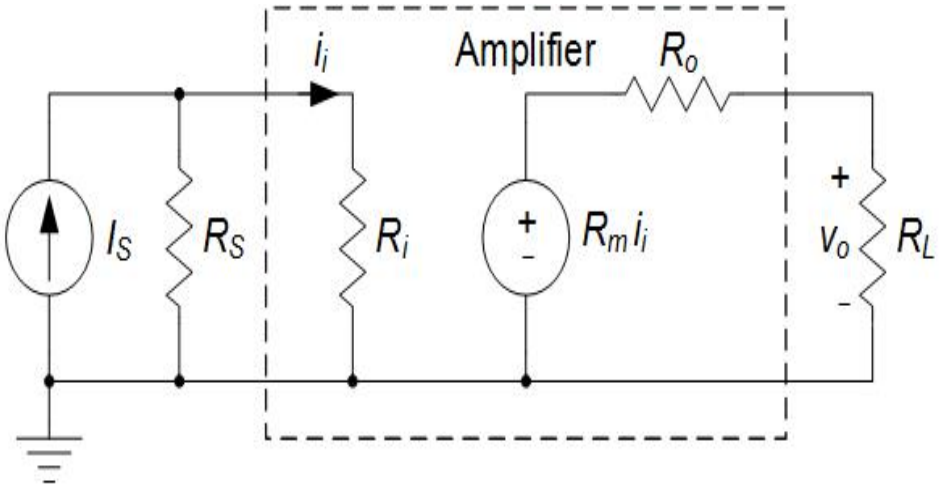
Started on	Tuesday, 12 September 2017, 11:49 AM
State	Finished
Completed on	Tuesday, 12 September 2017, 11:51 AM
Time taken	2 mins 19 secs
Grade	**2.0** out of 10.0 (**20**%)

Question 1

Not answered

Mark 0.0 out of 2.0



For the amplifier shown, what is the largest output resistance in kΩ that can be used and still get at least 50.5 percent of the amplifier's open circuit output voltage = Rmli to appear across RL? Use RL = 95.2kΩ.

Answer:

The correct answer is: 93.31

Question 2

Correct

Mark 1.0 out of 2.0

Which of the following is true for a DC coupled amplifier with a single high frequency pole?

Select one:

- a. Below this pole frequency, the magnitude of the gain will be approximately constant
- b. All of these ✓
- c. Above this pole frequency, the magnitude of the gain will roll off at -20dB/decade as frequency increases
- d. At this pole frequency, the magnitude of the gain will be -3dB below the midband value
- e. At this pole frequency, the phase of the gain will be -45 degrees below the midband value

The correct answer is: All of these

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 3

Correct

Mark 0.0 out of 2.0

Transresistance amplifiers use a current input signal and a voltage output signal.

Select one:

- True ✓
- False

The correct answer is 'True'.

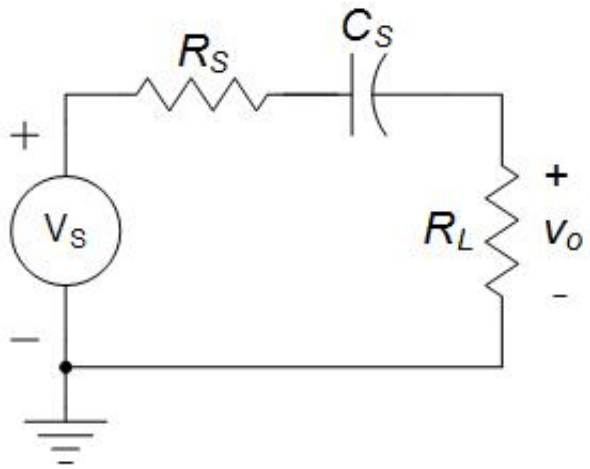
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Question 4

Correct

Mark 1.0 out of 2.0



The circuit shown has a :

Select one:

- a. High pass response ✓
- b. None of these
- c. Impossible to determine
- d. Low pass response
- e. Bandpass response

The correct answer is: High pass response

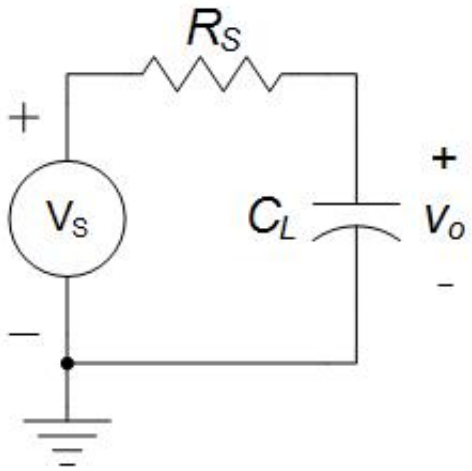
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 5

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the phase in degrees of the transfer function Vo/Vs at a frequency of 5.8MHz? Use Rs = 6.6kΩ and CL = 5.3pF.

Answer:

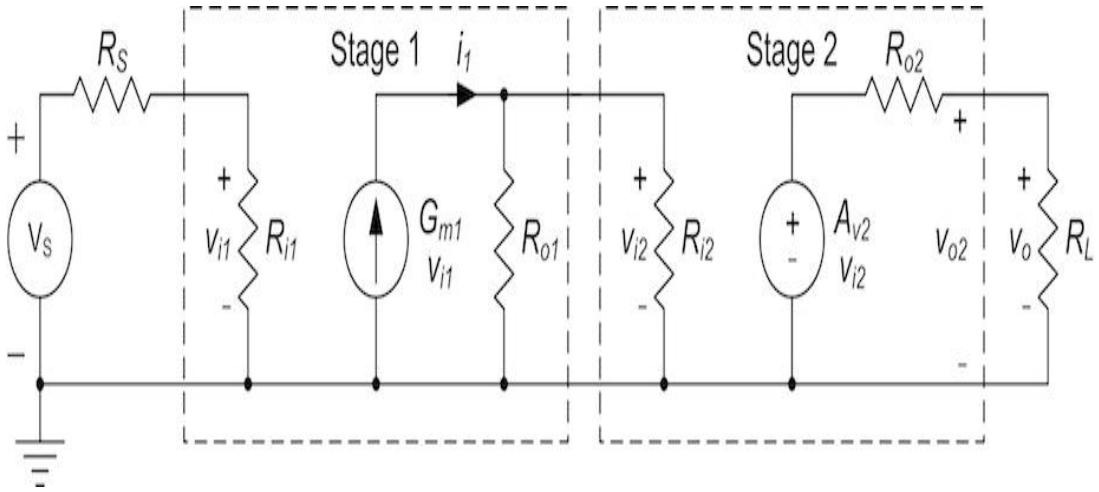
The correct answer is: -51.887

Started on	Tuesday, 12 September 2017, 11:52 AM
State	Finished
Completed on	Tuesday, 12 September 2017, 11:52 AM
Time taken	11 secs
Grade	**0.0** out of 10.0 (**0**%)

Question 1

Not answered

Mark 0.0 out of 2.0



What is the value of the transconductance gain in mA/V for the 2-stage amplifier circuit shown? Use Rs = 4.8kΩ, Ri1 = 35.5kΩ, Ro1 = 35.4kΩ, Gm1 = 35.9 mA/V, Ri2 = 36.6kΩ, Ro2 = 19.5kΩ, Av2 = 90.8 V/V and RL = 28.2kΩ.

Answer: ✗

The correct answer is: 1083.27

Question 2

Not answered

Mark 0.0 out of 2.0

The gain for a transresistance amplifier has units of :

Select one:

- a. Amps per Volt
- b. Amps per Amp
- c. None of these
- d. Volts per Amp
- e. Volts per Volt

The correct answer is: Volts per Amp

Question 3

Not answered

Mark 0.0 out of 2.0

A transconductance amplifier needs a high input resistance and a high output resistance.

Select one:

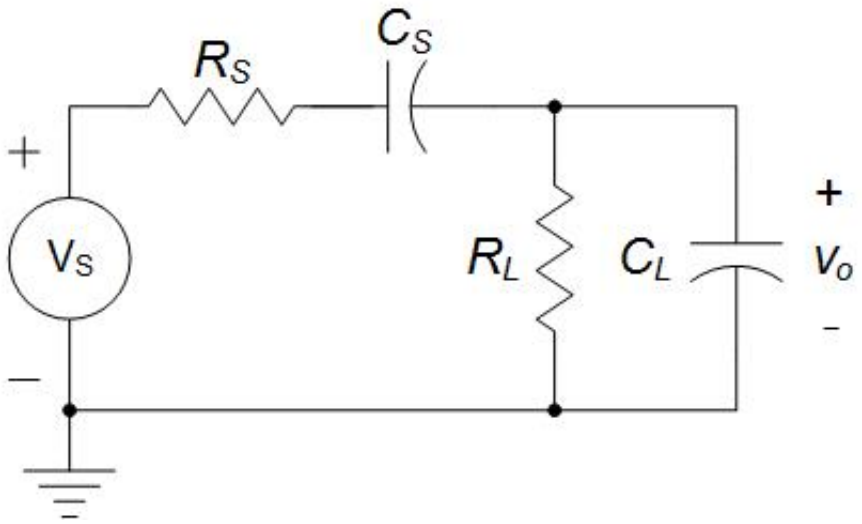
- True
- False

The correct answer is 'True'.

Question 4

Not answered

Mark 0.0 out of 2.0



The circuit shown has a :

Select one:

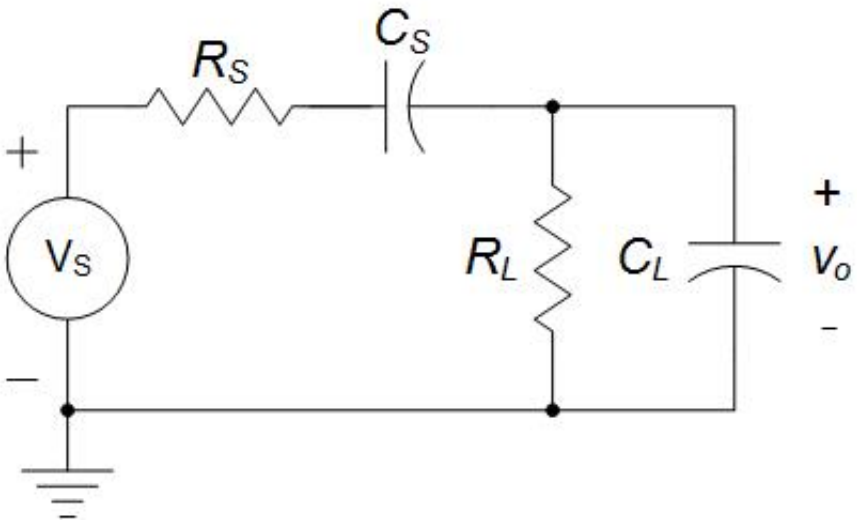
- a. Bandpass response
- b. Low pass response
- c. None of these
- d. Impossible to determine
- e. High pass response

The correct answer is: Bandpass response

Question 5

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the magnitude of the transfer function Vo/Vs at midband frequencies? (Note: Midband refers to frequencies that are well above the low frequency pole and also well below the high frequency pole.) Use Rs = 2.1kΩ, RL = 11.4kΩ, Cs = 382.8pF and CL = 5.7pF.

Answer:

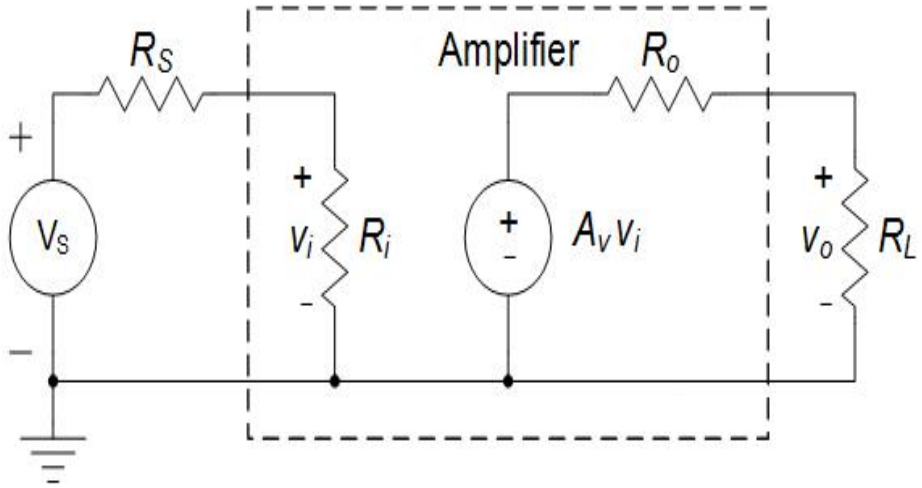
The correct answer is: 0.84

Started on	Tuesday, 12 September 2017, 11:53 AM
State	Finished
Completed on	Tuesday, 12 September 2017, 11:55 AM
Time taken	2 mins 6 secs
Grade	**2.0** out of 10.0 (**20**%)

Question 1

Incorrect

Mark 0.0 out of 2.0



For the amplifier shown, what is the smallest input resistance in kΩ that can be used without losing more than 41 percent of the source voltage across the source resistance? Use Rs = 8.2kΩ.

Answer: 7.19 ✗

The correct answer is: 11.80

Incorrect

Marks for this submission: 0.0/2.0.

Question 2

Correct

Mark 1.0 out of 2.0

An amplifier which needs a low input resistance and a low output resistance is :

Select one:

- a. A voltage amplifier
- b. None of these
- c. A transconductance amplifier
- d. A transresistance amplifier ✓
- e. A current amplifier

The correct answer is: A transresistance amplifier

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 3

Correct

Mark 0.0 out of 2.0

Voltage amplifiers use a voltage input signal and a current output signal.

Select one:

- True
- False ✓

The correct answer is 'False'.

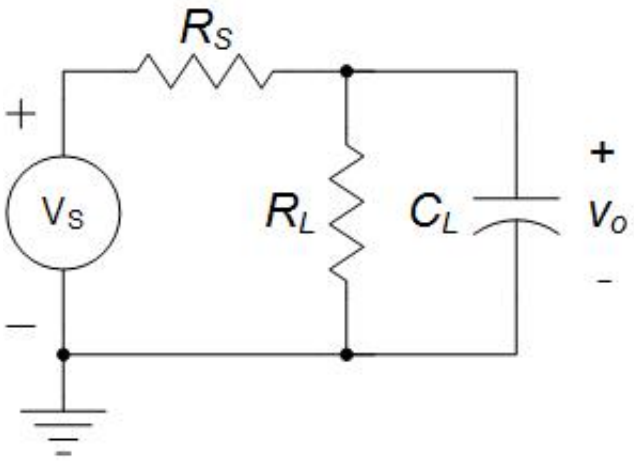
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Question 4

Correct

Mark 1.0 out of 2.0



The circuit shown has a :

Select one:

- a. None of these
- b. High pass response
- c. Bandpass response
- d. Low pass response ✓
- e. Impossible to determine

The correct answer is: Low pass response

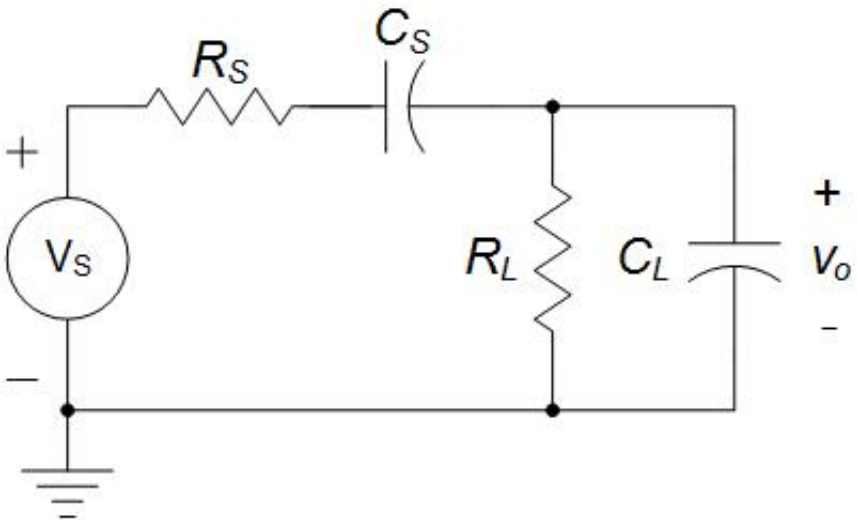
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 5

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the frequency in kHz of the low frequency pole for the transfer function Vo/Vs ? Use Rs = 1.3kΩ, RL = 11.7kΩ, Cs = 445.3pF and CL = 2.2pF.

Answer:

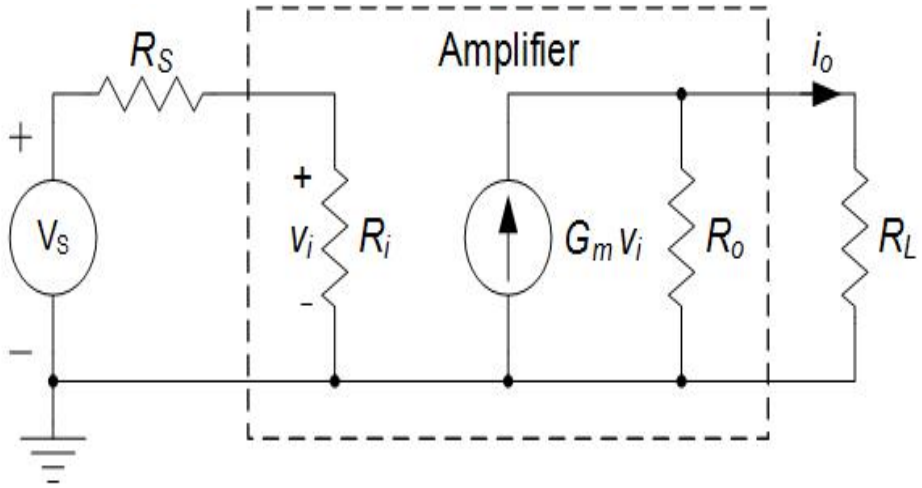
The correct answer is: 27.49

Started on	Tuesday, 12 September 2017, 11:58 AM
State	Finished
Completed on	Tuesday, 12 September 2017, 11:59 AM
Time taken	42 secs
Grade	**0.0** out of 10.0 (**0**%)

Question 1

Not answered

Mark 0.0 out of 2.0



For the amplifier shown, what is the smallest input resistance in kΩ that can be used without losing more than 13.2 percent of the source voltage across the source resistance? Use Rs = 15.4kΩ.

Answer:

The correct answer is: 101.27

Question 2

Not answered

Mark 0.0 out of 2.0

The gain for a transconductance amplifier has units of :

Select one:

- a. Volts per Amp
- b. Amps per Amp
- c. Amps per Volt
- d. None of these
- e. Volts per Volt

The correct answer is: Amps per Volt

Question 3

Not answered

Mark 0.0 out of 2.0

If an amplifier needs a high input resistance and a high output resistance, then it is a current amplifier.

Select one:

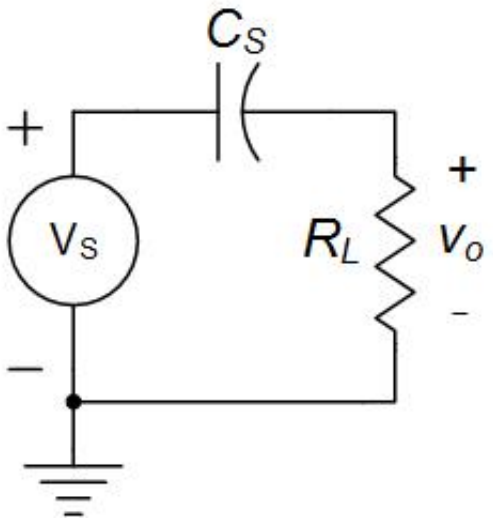
- True
- False

The correct answer is 'False'.

Question 4

Not answered

Mark 0.0 out of 2.0



The circuit shown has a :

Select one:

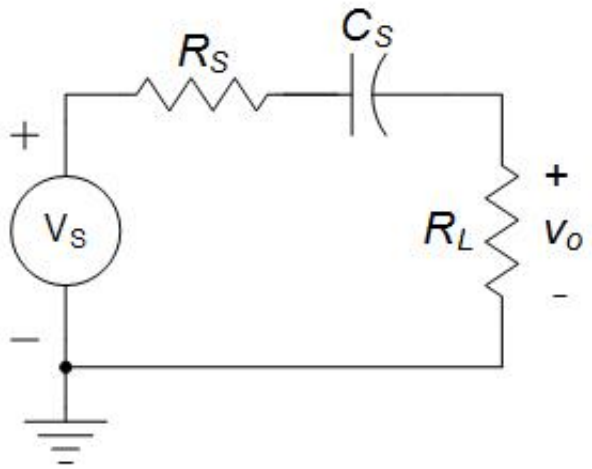
- a. High pass response
- b. Low pass response
- c. Impossible to determine
- d. None of these
- e. Bandpass response

The correct answer is: High pass response

Question 5

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the pole frequency in MHz for the transfer function Vo/Vs ? Use Rs = 3.4kΩ, RL = 18.8kΩ and Cs = 5.4pF.

Answer:

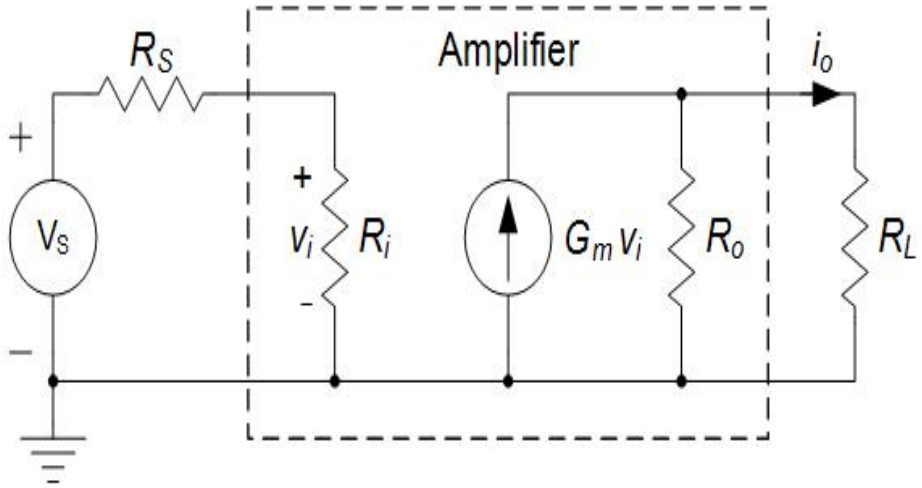
The correct answer is: 1.33

Started on	Tuesday, 12 September 2017, 12:08 PM
State	Finished
Completed on	Tuesday, 12 September 2017, 12:35 PM
Time taken	27 mins 1 sec
Grade	**4.0** out of 10.0 (**40**%)

Question 1

Not answered

Mark 0.0 out of 2.0



For the amplifier shown, what is the smallest output resistance in kΩ that can be used and still get at least 57.4 percent of the amplifier's short circuit output current = GmVi to flow in RL? Use RL = 91.6kΩ.

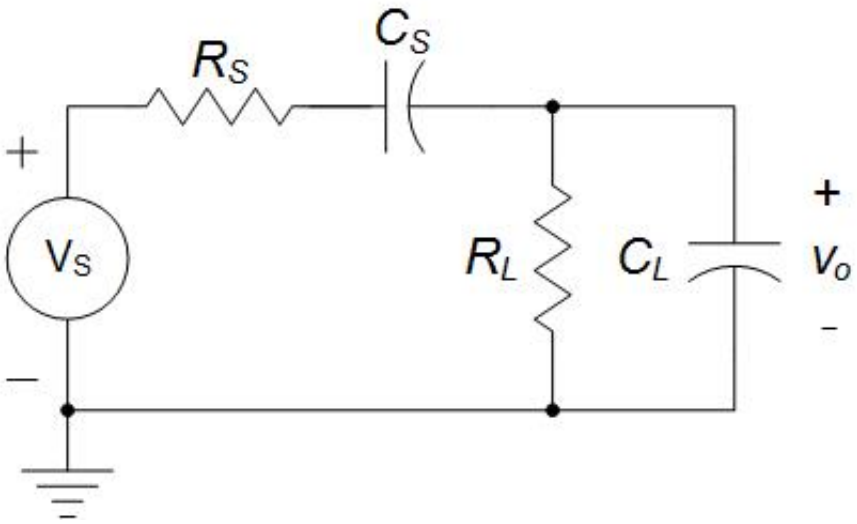
Answer:

The correct answer is: 123.42

Question 2

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the frequency in MHz of the high frequency pole for the transfer function Vo/Vs ? Use Rs = 4.3kΩ, RL = 9.6kΩ, Cs = 313.8pF and CL = 2.5pF.

Answer:

The correct answer is: 21.44

Question 3

Correct

Mark 2.0 out of 2.0

For an amplifier with a single high frequency pole, which of the following is true?

Select one:

- a. At this pole frequency, the phase of the gain will be +45 degrees above the midband value
- b. At this pole frequency, the magnitude of the gain will be +3dB above the midband value
- c. All of these
- d. Above this pole frequency, the phase of the gain will roll off at -45 degrees/decade as frequency increases ✓
- e. Above this pole frequency, the magnitude of the gain will increase at +20dB/decade as frequency increases

The correct answer is: Above this pole frequency, the phase of the gain will roll off at -45 degrees/decade as frequency increases

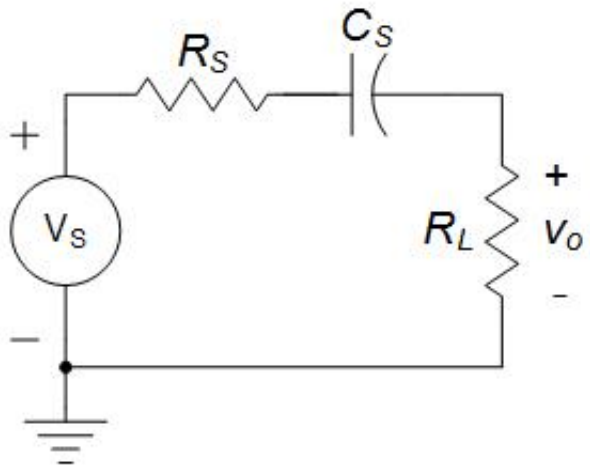
Correct

Marks for this submission: 2.0/2.0.

Question 4

Correct

Mark 2.0 out of 2.0



The circuit shown has a :

Select one:

- a. Bandpass response
- b. High pass response ✓
- c. None of these
- d. Low pass response
- e. Impossible to determine

The correct answer is: High pass response

Correct

Marks for this submission: 2.0/2.0.

Question 5

Correct

Mark 0.0 out of 2.0

The model for a transresistance amplifier uses a Thevenin's equivalent circuit at it's output.

Select one:

- True ✓
- False

The correct answer is 'True'.

Correct

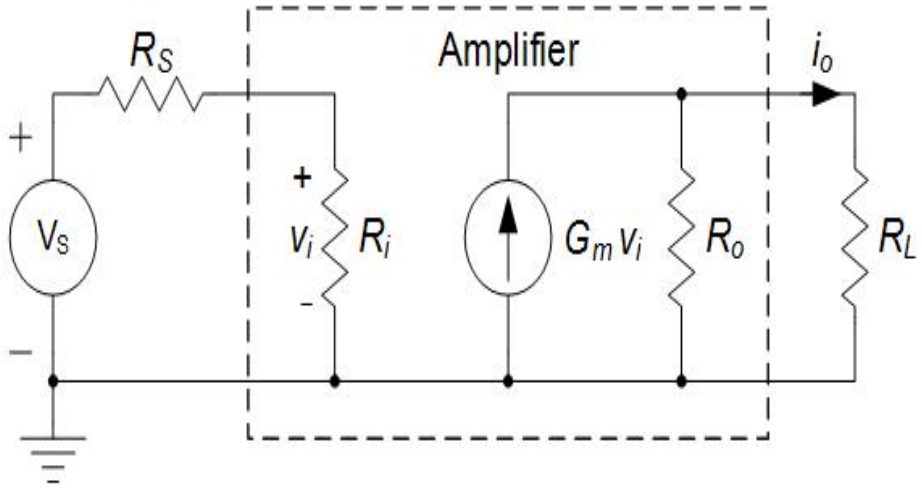
Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Started on	Thursday, 14 September 2017, 4:22 PM
State	Finished
Completed on	Thursday, 14 September 2017, 4:42 PM
Time taken	19 mins 49 secs
Grade	**6.0** out of 10.0 (**60**%)

Question 1

Not answered

Mark 0.0 out of 2.0



For the amplifier shown, what is the smallest output resistance in kΩ that can be used without losing more than 37.4 percent of the amplifier's short circuit output current = GmVi in Ro? Use RL = 62.7kΩ.

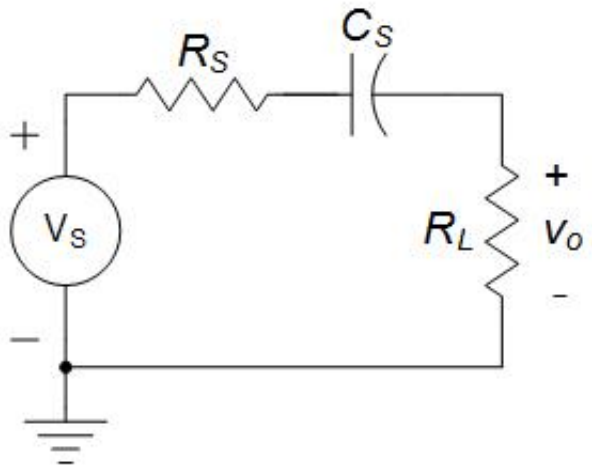
Answer:

The correct answer is: 104.95

Question 2

Incorrect

Mark 0.0 out of 2.0



For the filter circuit shown, what is the pole frequency in MHz for the transfer function Vo/Vs ? Use Rs = 4.8kΩ, RL = 18.2kΩ and Cs = 4.4pF.

Answer: 74.37

The correct answer is: 1.57

Incorrect

Marks for this submission: 0.0/2.0.

Question 3

Correct

Mark 2.0 out of 2.0

Which of the following is true for a DC coupled amplifier with a single high frequency pole?

Select one:

- a. At this pole frequency, the magnitude of the gain will be +3dB above the midband value
- b. At this pole frequency, the phase of the gain will be +45 degrees above the midband value
- c. Below this pole frequency, the magnitude of the gain will be approximately constant ✓
- d. Below this pole frequency, the magnitude of the gain will roll off at -20dB/decade as frequency decreases
- e. None of these

The correct answer is: Below this pole frequency, the magnitude of the gain will be approximately constant

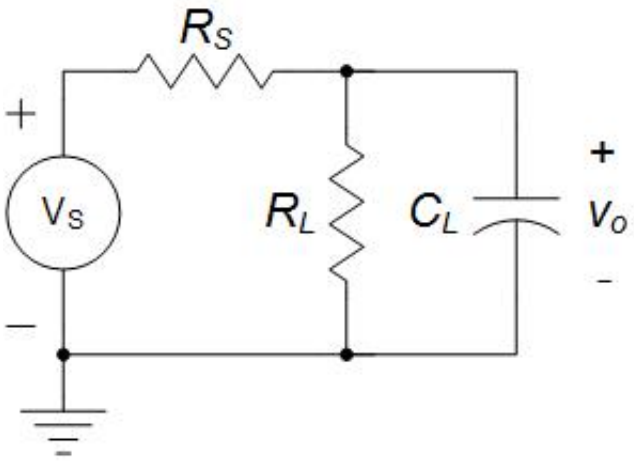
Correct

Marks for this submission: 2.0/2.0.

Question 4

Correct

Mark 2.0 out of 2.0



The circuit shown has a :

Select one:

- a. High pass response
- b. None of these
- c. Impossible to determine
- d. Low pass response ✓
- e. Bandpass response

The correct answer is: Low pass response

Correct

Marks for this submission: 2.0/2.0.

Question 5

Correct

Mark 2.0 out of 2.0

The model for a voltage amplifier uses a Norton's equivalent circuit at it's output.

Select one:

- True
- False ✓

The correct answer is 'False'.

Correct

Marks for this submission: 2.0/2.0.

Started on	Tuesday, 12 September 2017, 12:36 PM
State	Finished
Completed on	Tuesday, 12 September 2017, 1:01 PM
Time taken	25 mins
Grade	**5.0** out of 10.0 (**50**%)

Question 1

Not answered

Mark 0.0 out of 2.0

What is the power efficiency in percent for an amplifier which delivers a sinusoidal output voltage of 1.6 Vpeak to a 1.4kΩ load while drawing a current of 3.3mA from two power supplies of VCC = +5V and VEE = -0V ? Neglect any power drawn from the input signal source.

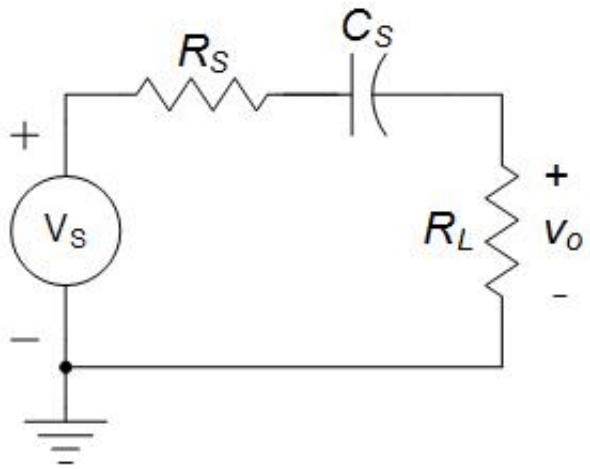
Answer:

The correct answer is: 5.54

Question 2

Incorrect

Mark 0.0 out of 2.0



For the filter circuit shown, what is the phase in degrees of the transfer function Vo/Vs at a frequency of 5.4MHz? Use Rs = 4.0kΩ, RL = 16.6kΩ and Cs = 6.5pF.

Answer: 0

The correct answer is: 12.414

Incorrect

Marks for this submission: 0.0/2.0.

Question 3

Correct

Mark 1.0 out of 2.0

In order to minimize signal loss, a voltage amplifier needs :

Select one:

- a. A low input resistance and a low output resistance
- b. A high input resistance and a low output resistance ✓
- c. A high input resistance and a high output resistance
- d. None of these
- e. A low input resistance and a high output resistance

The correct answer is: A high input resistance and a low output resistance

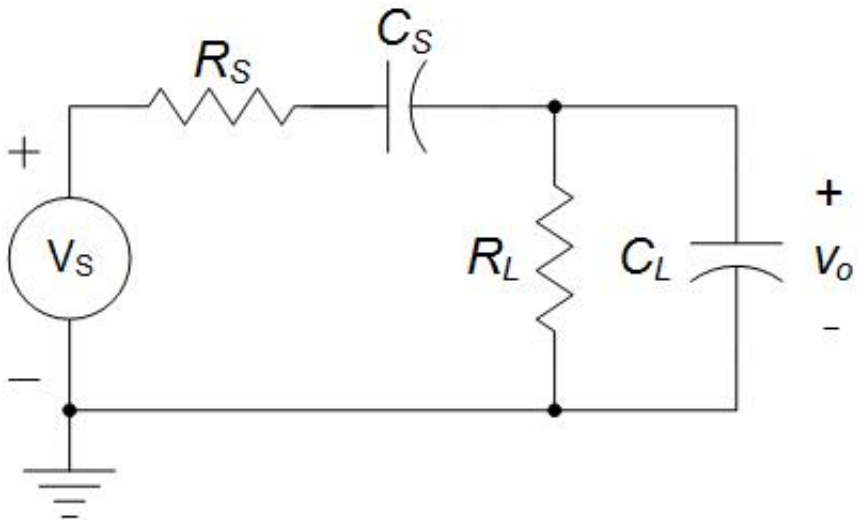
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 4

Correct

Mark 2.0 out of 2.0



The circuit shown has a :

Select one:

- a. Impossible to determine
- b. Low pass response
- c. None of these
- d. High pass response
- e. Bandpass response ✓

The correct answer is: Bandpass response

Correct

Marks for this submission: 2.0/2.0.

Question 5

Correct

Mark 2.0 out of 2.0

The gain for a current amplifier has units of A/V.

Select one:

- True
- False ✓

The correct answer is 'False'.

Correct

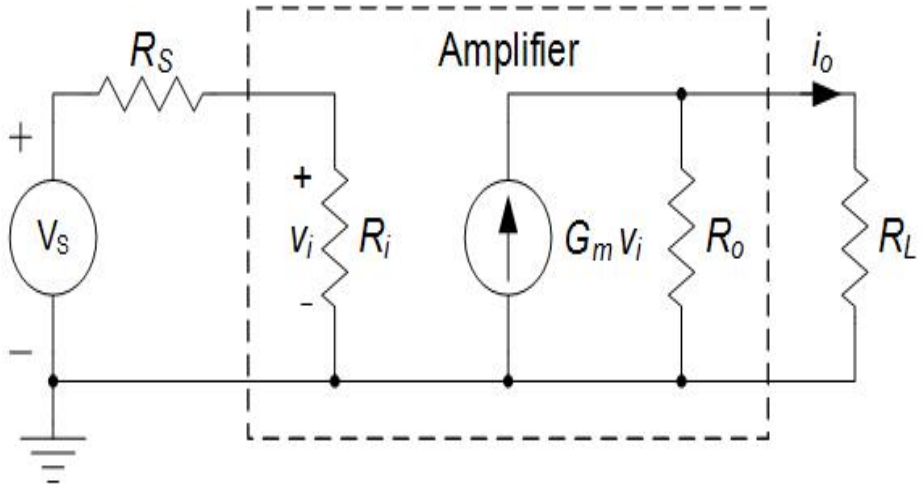
Marks for this submission: 2.0/2.0.

Started on	Tuesday, 12 September 2017, 1:02 PM
State	Finished
Completed on	Thursday, 14 September 2017, 12:22 PM
Time taken	1 day 23 hours
Grade	**3.0** out of 10.0 (**30**%)

Question 1

Not answered

Mark 0.0 out of 2.0



For the amplifier shown, what is the smallest input resistance in kΩ that can be used without losing more than 11.8 percent of the source voltage across the source resistance? Use Rs = 19.9kΩ.

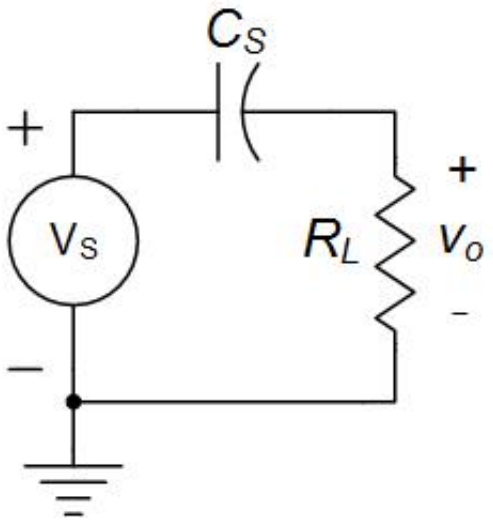
Answer:

The correct answer is: 148.74

Question 2

Incorrect

Mark 0.0 out of 2.0



For the filter circuit shown, what is the magnitude of the transfer function Vo/Vs at a frequency of 7.6MHz? Use RL = 8.1kΩ and Cs = 3.1pF.

Answer: 1

The correct answer is: 0.768

Incorrect

Marks for this submission: 0.0/2.0.

Question 3

Correct

Mark 1.0 out of 2.0

If an amplifier needs a Thevenin's equivalent circuit to model it's output, then it is :

Select one:

- a. None of these
- b. Either a current amplifier or a transresistance amplifier
- c. Either a current amplifier or a transconductance amplifier
- d. Either a voltage amplifier or a transconductance amplifier
- e. Either a voltage amplifier or a transresistance amplifier ✓

The correct answer is: Either a voltage amplifier or a transresistance amplifier

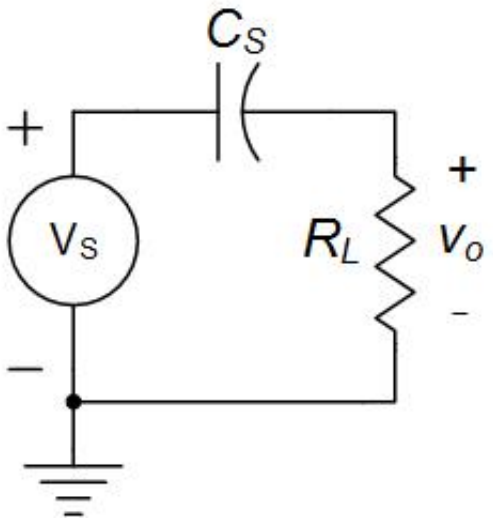
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 4

Correct

Mark 2.0 out of 2.0



The circuit shown has a :

Select one:

- a. High pass response ✓
- b. Impossible to determine
- c. None of these
- d. Bandpass response
- e. Low pass response

The correct answer is: High pass response

Correct

Marks for this submission: 2.0/2.0.

Question 5

Correct

Mark 0.0 out of 2.0

For an AC coupled amplifier with a single high frequency pole, the phase of the gain approaches -90 degrees at frequencies well above the upper corner frequency.

Select one:

- True ✓
- False

The correct answer is 'True'.

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Started on	Thursday, 14 September 2017, 12:47 PM
State	Finished
Completed on	Thursday, 14 September 2017, 12:48 PM
Time taken	57 secs
Grade	**5.0** out of 10.0 (**50**%)

Question 1

Not answered

Mark 0.0 out of 2.0

What is the power dissipation in milliwatts for an amplifier which delivers a sinusoidal output voltage of 1.6 Vpeak to a 1.8kΩ load while drawing a current of 8.1mA from two power supplies of VCC = +5V and VEE = -5V ? Neglect any power drawn from the input signal source.

Answer:

The correct answer is: 80.29

Question 2

Correct

Mark 1.0 out of 2.0

For an amplifier with a single low frequency pole, which of the following is true?

Select one:

- a. All of these
- b. At this pole frequency, the magnitude of the gain will be +3dB above the midband value
- c. At this pole frequency, the phase of the gain will be -45 degrees below the midband value
- d. Below this pole frequency, the magnitude of the gain will increase at +20dB/decade as frequency increases ✓
- e. Below this pole frequency, the phase of the gain will increase at +45 degrees/decade as frequency increases

The correct answer is: Below this pole frequency, the magnitude of the gain will increase at +20dB/decade as frequency increases

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 3

Correct

Mark 2.0 out of 2.0

For an AC coupled amplifier with a single high frequency pole, the phase of the gain approaches -90 degrees at frequencies well above the upper corner frequency.

Select one:

- True ✓
- False

The correct answer is 'True'.

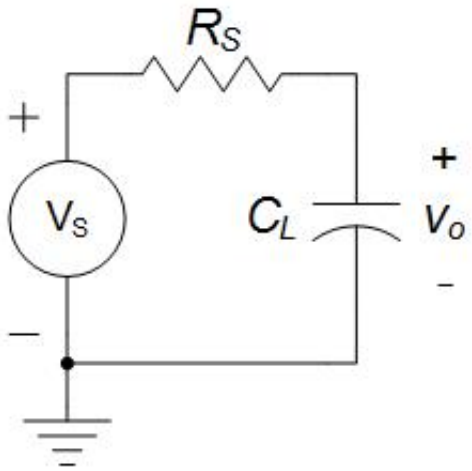
Correct

Marks for this submission: 2.0/2.0.

Question 4

Correct

Mark 2.0 out of 2.0



The circuit shown has a :

Select one:

- a. Low pass response ✓
- b. Bandpass response
- c. High pass response
- d. Impossible to determine
- e. None of these

The correct answer is: Low pass response

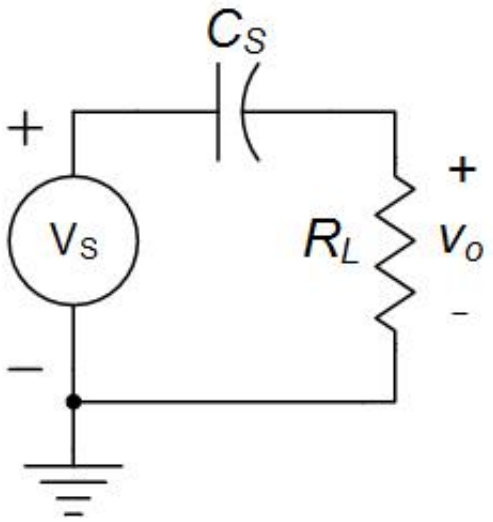
Correct

Marks for this submission: 2.0/2.0.

Question 5

Incorrect

Mark 0.0 out of 2.0



For the filter circuit shown, what is the magnitude of the transfer function Vo/Vs at a frequency of 8.0MHz? Use RL = 5.9kΩ and Cs = 6.7pF.

Answer: 1

The correct answer is: 0.893

Incorrect

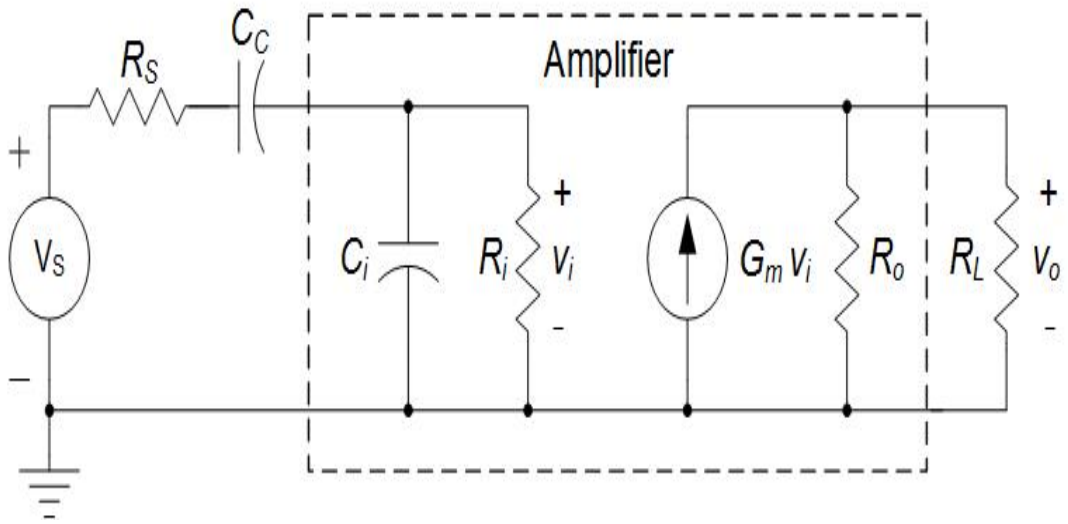
Marks for this submission: 0.0/2.0.

Started on	Thursday, 14 September 2017, 12:24 PM
State	Finished
Completed on	Thursday, 14 September 2017, 1:04 PM
Time taken	39 mins 49 secs
Grade	**3.0** out of 10.0 (**30**%)

Question 1

Incorrect

Mark 0.0 out of 2.0



What is the value of the unity gain frequency in MHz for the amplifier shown? Use Rs = 1.8kΩ, Ri = 9.5kΩ, Ro = 34.5kΩ, RL = 23.1kΩ, Cc = 338.1pF, Ci = 5.5pF and Gm = 6.5 mA/V.

Answer: 737 ✗

The correct answer is: 1445.80

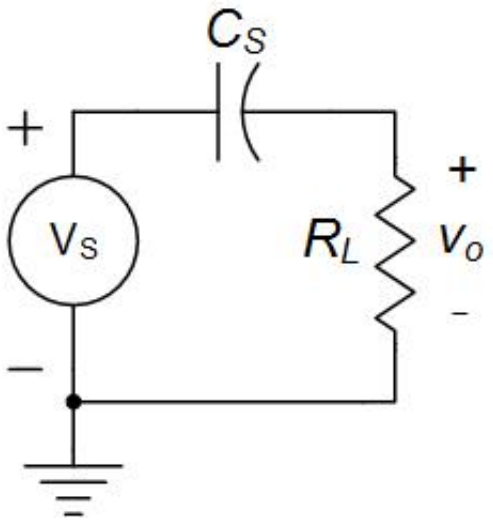
Incorrect

Marks for this submission: 0.0/2.0.

Question 2

Not answered

Mark 0.0 out of 2.0



For the filter circuit shown, what is the phase in degrees of the transfer function Vo/Vs at a frequency of 17.9MHz? Use RL = 1.3kΩ and Cs = 8.8pF.

Answer:

The correct answer is: 37.85

Question 3

Correct

Mark 2.0 out of 2.0

Which of the following is true for an AC coupled amplifier with a single high frequency pole?

Select one:

- a. Below the upper corner frequency, the phase of the gain will decrease at -45 degrees/decade for one decade as frequency decreases
- b. Above the lower corner frequency, the magnitude of the gain will roll off at -20dB/decade as frequency increases
- c. Below the upper corner frequency, the magnitude of the gain will roll off at -20dB/decade as frequency decreases
- d. Above the lower corner frequency, the phase of the gain will increase at +45 degrees/decade for one decade as frequency increases
- e. None of these ✓

The correct answer is: None of these

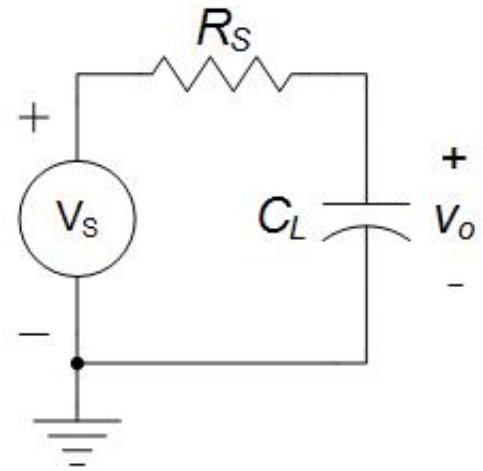
Correct

Marks for this submission: 2.0/2.0.

Question 4

Correct

Mark 1.0 out of 2.0



The circuit shown has a :

Select one:

- a. None of these
- b. Low pass response ✓
- c. Bandpass response
- d. High pass response
- e. Impossible to determine

The correct answer is: Low pass response

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 5

Correct

Mark 0.0 out of 2.0

A transconductance amplifier needs a high input resistance and a low output resistance.

Select one:

- True
- False ✓

The correct answer is 'False'.

Correct

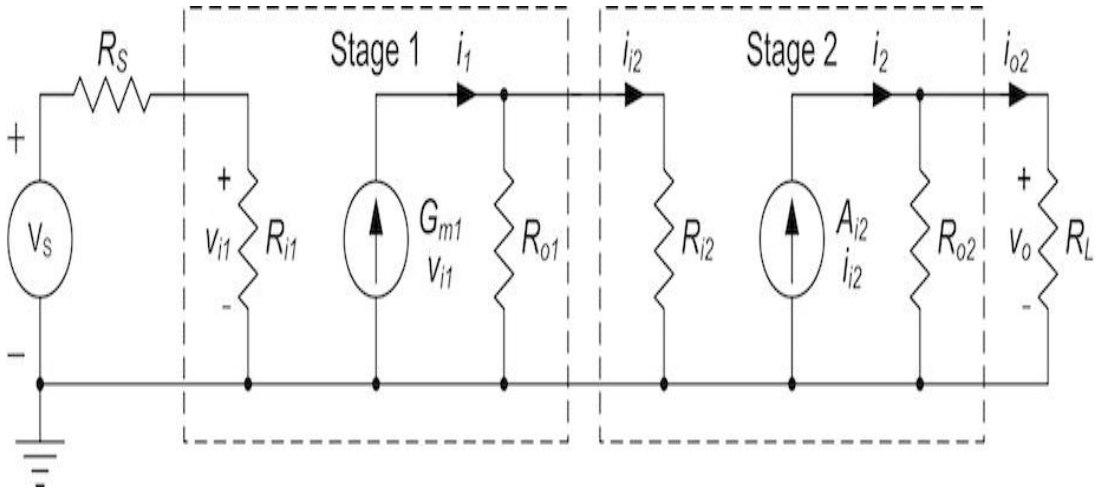
Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Started on	Thursday, 14 September 2017, 3:19 PM
State	Finished
Completed on	Thursday, 14 September 2017, 3:21 PM
Time taken	2 mins 41 secs
Grade	**1.0** out of 10.0 (**10**%)

Question 1

Incorrect

Mark 0.0 out of 2.0



What is the value of the voltage gain in dB for the 2-stage amplifier circuit shown? Use Rs = 18.2kΩ, Ri1 = 42.6kΩ, Ro1 = 39.6kΩ, Gm1 = 5.6 mA/V, Ri2 = 8.2kΩ, Ro2 = 7.0kΩ, Ai2 = 51.5 A/A and RL = 17.5kΩ.

Answer: 2 ✗

The correct answer is: 58.45

Incorrect

Marks for this submission: 0.0/2.0.

Question 2

Correct

Mark 0.0 out of 2.0

In order to minimize signal loss, a transresistance amplifier needs :

Select one:

- a. A high input resistance and a low output resistance
- b. None of these
- c. A low input resistance and a high output resistance
- d. A low input resistance and a low output resistance ✓
- e. A high input resistance and a high output resistance

The correct answer is: A low input resistance and a low output resistance

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Question 3

Correct

Mark 0.0 out of 2.0

For an amplifier with a single-time constant high pass response, the magnitude of the gain decreases at -6dB/octave as the frequency is decreased below the corner frequency.

Select one:

- True ✓
- False

The correct answer is 'True'.

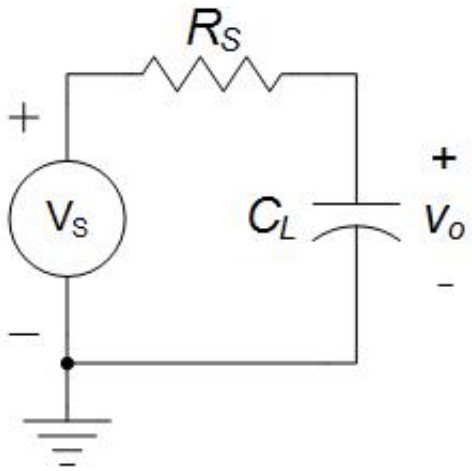
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Question 4

Correct

Mark 1.0 out of 2.0



The circuit shown has a :

Select one:

- a. Impossible to determine
- b. Bandpass response
- c. High pass response
- d. None of these
- e. Low pass response ✓

The correct answer is: Low pass response

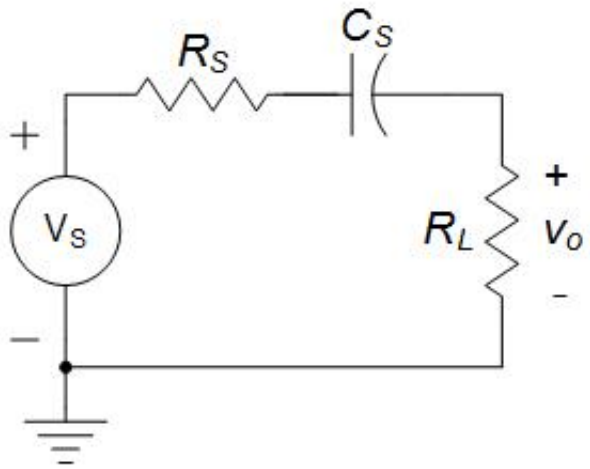
Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question 5

Incorrect

Mark 0.0 out of 2.0



For the filter circuit shown, what is the phase in degrees of the transfer function Vo/Vs at a frequency of 2.4MHz? Use Rs = 5.3kΩ, RL = 5.3kΩ and Cs = 4.8pF.

Answer: 4 ✗

The correct answer is: 52.503

Incorrect

Marks for this submission: 0.0/2.0.