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Courses » Basic Electronics

Announcements

Course

Ask a Question

Progress



Unit 10 - Week 9

Course outline

How to access the portal

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

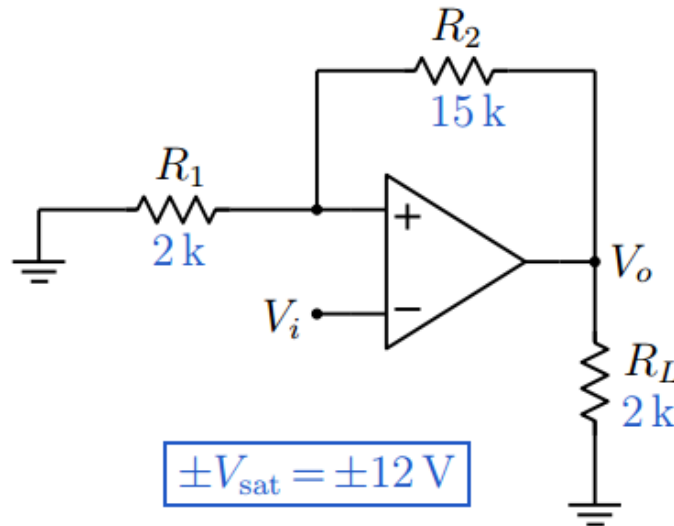
Week 9

- Lecture 49: Simulation of triangle-to-sine converter
- Lecture 50: Schmitt triggers-1
- Lecture 51: Schmitt triggers-2
- Lecture 52: Schmitt triggers-3
- Lecture 53: Sinusoidal oscillators-1
- Lecture 54: Sinusoidal oscillators-2
- Week 9 Slides PDF
- Weekly Feedback Form

Week-9 Assignment

The due date for submitting this assignment has passed. **Due on 2018-03-28, 23:59 IST**
As per our records you have not submitted this assignment.

1) In the Schmitt trigger circuit shown in the figure, what are the upper and lower trip points? **1 point**



- $\pm 1.4 \text{ V}$
- $\pm 0.9 \text{ V}$
- $\pm 2.1 \text{ V}$
- $\pm 1.8 \text{ V}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\pm 1.4 \text{ V}$

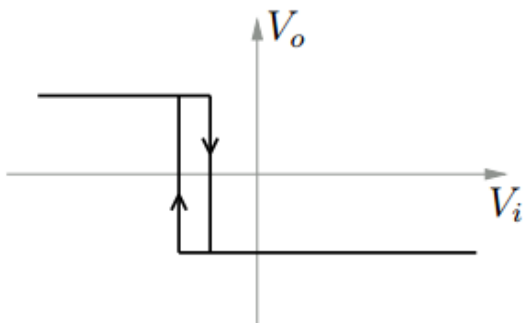
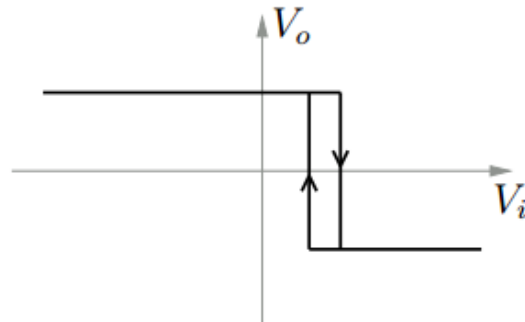
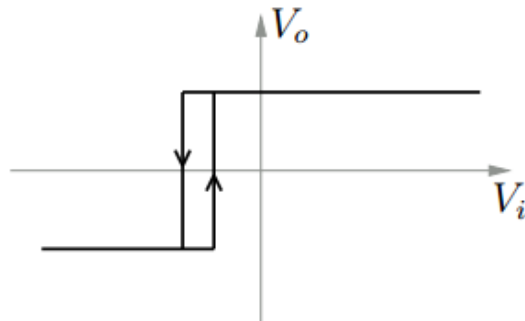
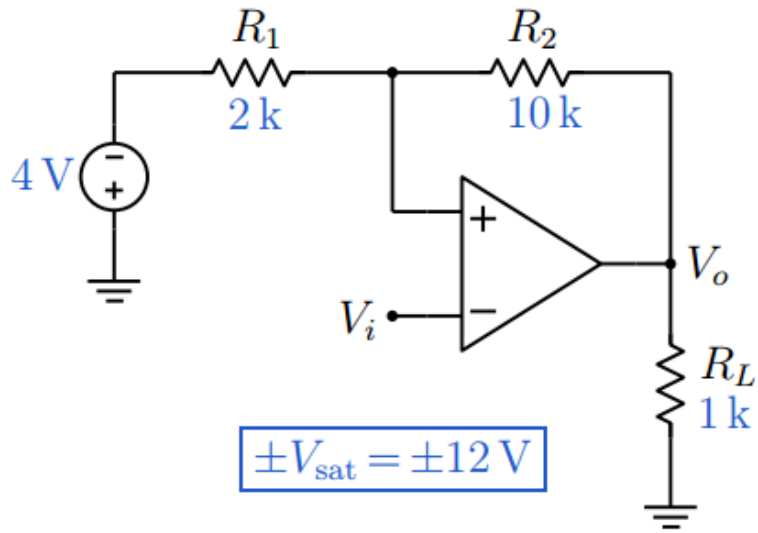
2) For the Schmitt trigger circuit shown in the figure, which graph correctly describes the V_o versus V_i relationship? **1 point**

- Download Videos
- Quiz : Week-9 Assignment
- Assignment-9 Solutions

Week 10

Week 11

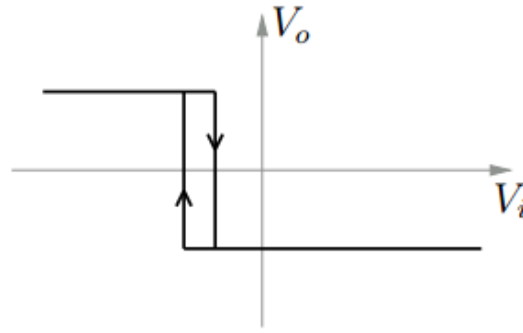
Week 12



No, the answer is incorrect.

Score: 0

Accepted Answers:



3) What is V_{TH} for the Schmitt trigger of $Q - 2$?

- 2.67 V
- 1.33 V
- 1.8 V
- 2.33 V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-1.33 V

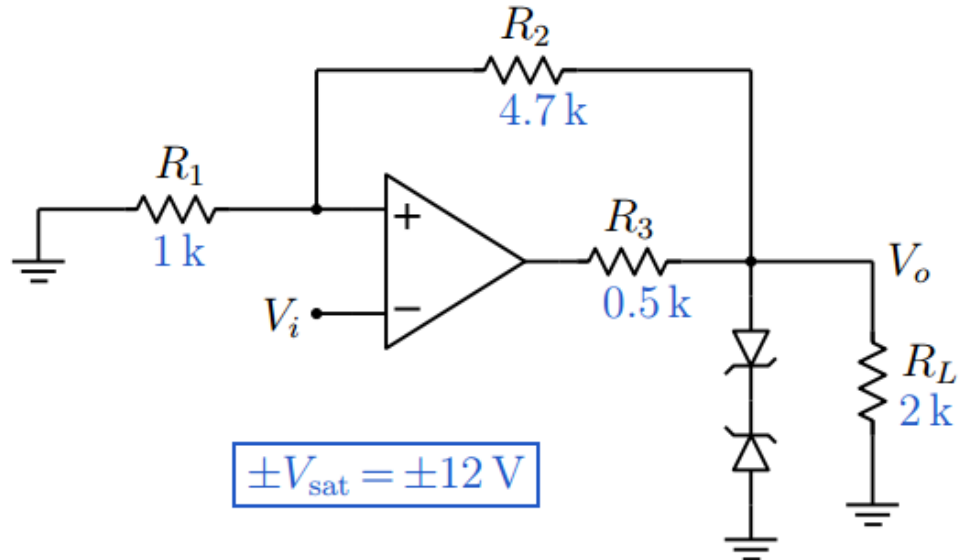
4) What is V_{TL} for the Schmitt trigger of $Q - 2$?

- 0.67 V
- 1.8 V
- 5.33 V
- 2.67 V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-5.33 V

5) In the Schmitt trigger circuit shown in the figure, what are the upper and lower trip points? (1 point $V_{on} = 0.7\text{ V}$, $V_Z = 5\text{ V}$ for the Zener diodes.)



1 pt

1 point

- $\pm 1.48\text{ V}$
- $\pm 0.74\text{ V}$
- $\pm 1\text{ V}$
- $\pm 1.2\text{ V}$

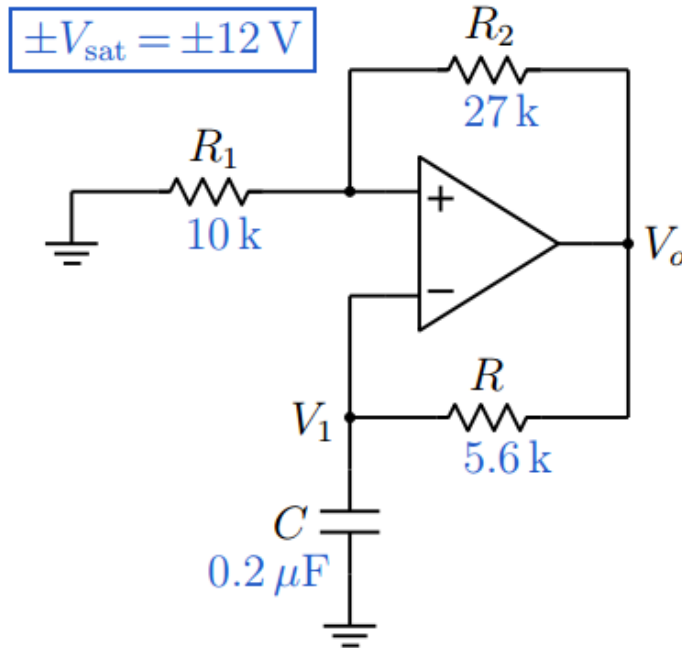
No, the answer is incorrect.

Score: 0

Accepted Answers:

$\pm 1\text{ V}$

6) An oscillator circuit is shown in the figure. Which of the following graphs correctly describes the waveform $V_1(t)$? 1 pt



-
-
-
-

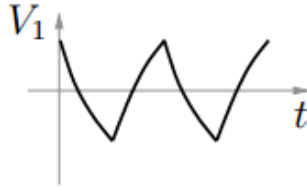




No, the answer is incorrect.

Score: 0

Accepted Answers:



7) What is the approximate oscillation frequency in the circuit of $Q - 6$?

- 800 Hz
- 1.25 kHz
- 1.8 kHz
- 2 kHz

No, the answer is incorrect.

Score: 0

Accepted Answers:

800 Hz

8) In the oscillator of $Q - 6$, R_1 is changed from $10\text{ k}\Omega$ to $20\text{ k}\Omega$ (with all other component values as specified in the figure). What is the new oscillation frequency (approximately)? **1 point**

- 800 Hz
- 1.5 kHz
- 500 Hz
- 2.5 kHz

No, the answer is incorrect.

Score: 0

Accepted Answers:

500 Hz

9) In the oscillator of $Q - 6$, C is changed from $0.2\text{ }\mu\text{F}$ to $0.1\text{ }\mu\text{F}$ (with all other component values as specified in the figure). What is the new oscillation frequency (approximately)? **1 point**

- 3.6 kHz
- 1.6 kHz
- 2.5 kHz
- 900 Hz

No, the answer is incorrect.

Score: 0



1 point

Accepted Answers:

1.6 kHz

10) In the oscillator of $Q = 6$, the power supply is changed, and as a result, V_{sat} changes from 12 V to 10 V. All other component values are as specified in the figure. What is the new oscillation frequency (approximately)?

- 667 Hz
- 960 Hz
- 1.4 kHz
- 800 Hz

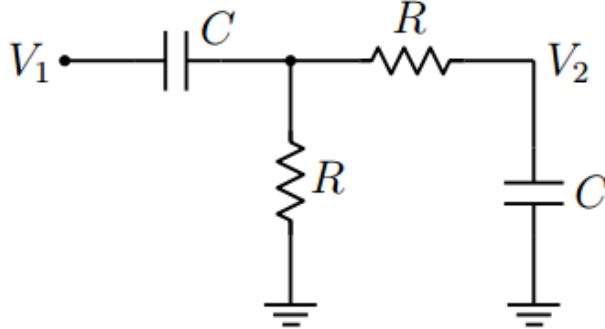
No, the answer is incorrect.

Score: 0

Accepted Answers:

800 Hz

11) In the RC network shown in the figure, $\frac{V_2(s)}{V_1(s)}$ is of the form



- $\frac{a_1 s}{b_2 s^2 + b_1 s + b_0}$
- $\frac{a_1 s + a_0}{b_2 s^2 + b_1 s + b_0}$
- $\frac{a_2 s^2}{b_2 s^2 + b_1 s + b_0}$
- $\frac{a_0}{b_2 s^2 + b_1 s + b_0}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\frac{a_1 s}{b_2 s^2 + b_1 s + b_0}$

12) In the network of $Q = 11$ with $R = 1 \text{ k}\Omega$ and $C = 0.1 \text{ }\mu\text{F}$, what is the frequency (approximately) at which $\frac{V_2(s)}{V_1(s)}$ is real? 1 point

- 800 Hz
- 1.1 kHz



1 point

- 1.6 kHz
- 2.25 kHz

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.6 kHz

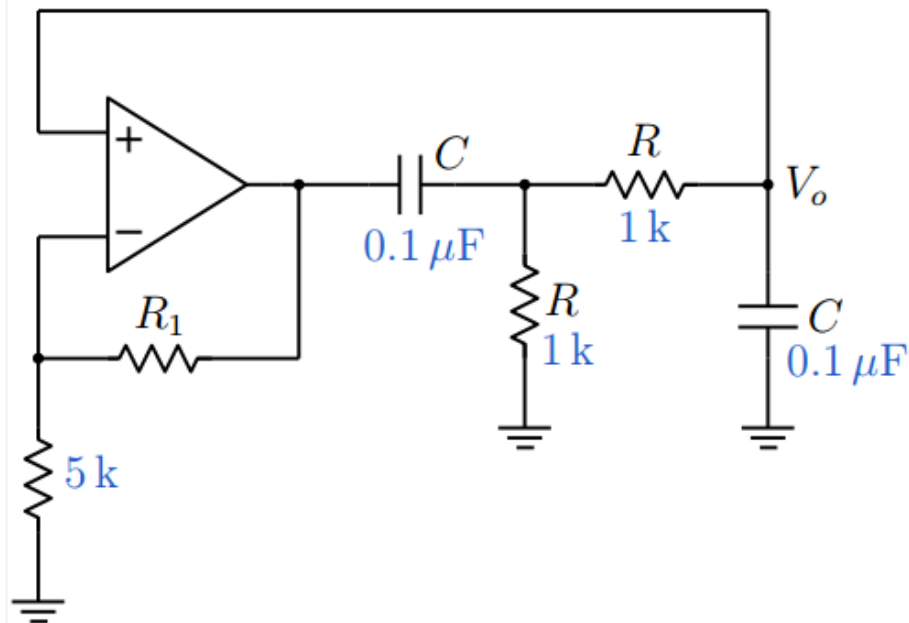
13) In the network of Q-11 with $R = 1\text{ k}\Omega$ and $C = 0.1\text{ }\mu\text{F}$, suppose the frequency is set to the value obtained in Q-12. What is $\frac{V_2(s)}{V_1(s)}$ in this case? 1 point

- 0.25
- 0.67
- 0.5
- 0.33

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.33

14) For the circuit in the figure to work as a sinusoidal oscillator, what value of R_1 is required approximately? 1 point



- 5 kΩ
- 10 kΩ
- 7.5 kΩ
- 15 kΩ

No, the answer is incorrect.
Score: 0

Accepted Answers:



10 kΩ

◀ Previous Page

End ▶



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