



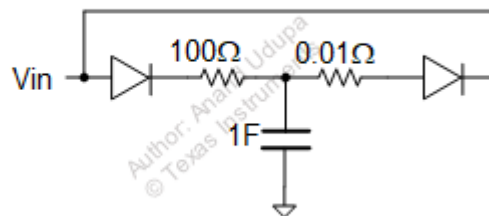
## Quiz 8

\* Full Name

\* WISH Participant ID

803. Diodes are ideal.  $V_{in}=1.\cos(2\pi t)$ . Voltage across the cap at  $t=0\text{sec}$  is approximately:

- (a)  $1/\pi$  V
- (b) 1V
- (c)  $\sqrt{2}$  V
- (d) 0V
- (e) -1V
- (f)  $-1/\pi$  V
- (g) 0.5V
- (h)  $2/\pi$  V



Answer the Question 803

☐ a

☐ e

☐ b

☐ f

☐ c

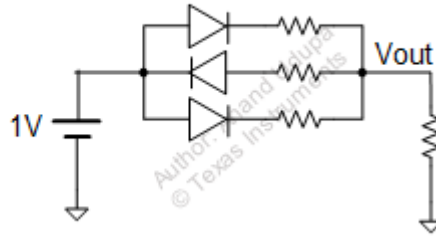
☐ g

☐ d

☐ h

804. All diodes have a forward drop of  $0.7V$ . Each resistor is  $1\Omega$ . The voltage at  $V_{out}$  is:

- (a)  $0V$
- (b)  $0.67V$
- (c)  $0.2V$
- (d)  $1V$
- (e)  $0.3V$
- (f)  $0.225V$
- (g)  $0.75V$
- (h)  $0.5V$

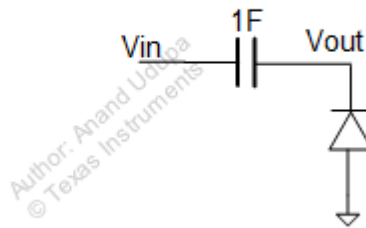


Answer the Question 804

- |                         |                         |
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| <input type="radio"/> b | <input type="radio"/> f |
| <input type="radio"/> c | <input type="radio"/> g |
| <input type="radio"/> d | <input type="radio"/> h |

807.  $V_{in} = 2\cos(\omega t)$ . Diode has a forward drop of  $0.7V$ . In steady state, the highest voltage at  $V_{out}$  is:

- (a)  $2V$
- (b)  $1.3V$
- (c)  $1V$
- (d)  $0.7V$
- (e)  $-0.7V$
- (f)  $0.3V$
- (g)  $2.7V$
- (h)  $0V$

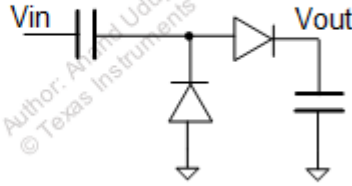


Answer the Question 807

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| <input type="radio"/> d | <input type="radio"/> h |

808.  $V_{in} = 10 \cos(\omega t)$ . Diodes have a forward drop of 0.7V. Waveform at  $V_{out}$  is:

- (a)  $10 \cos(\omega t)$
- (b)  $10 \cos(\omega t) - 1.4V$
- (c)  $10 \cos(\omega t) - 0.7V$
- (d) 19.3V DC
- (e) 18.6V DC
- (f) 20V DC
- (g)  $5 \cos(\omega t)$
- (h) 9.3V DC

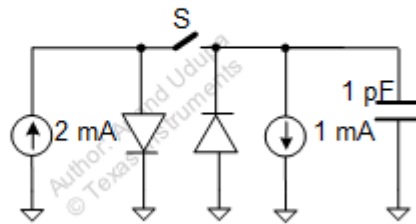


Answer the Question 808

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| <input type="radio"/> d | <input type="radio"/> h |

809. Both diodes are ideal with a forward voltage of 1V. The switch is ideal and is closed at  $t=0$ . The voltage across the capacitor at  $t=1$  ns is equal to:

- (a) -1V
- (b) -2V
- (c) 0V
- (d) 2V
- (e) Undefined
- (f) 0.5V
- (g) -0.5V
- (h) 1V

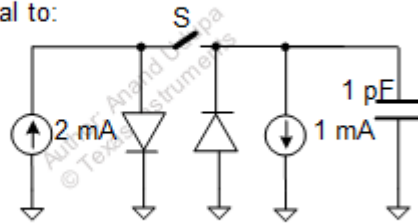


Answer the Question 809

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| <input type="radio"/> b | <input type="radio"/> f |
| <input type="radio"/> c | <input type="radio"/> g |
| <input type="radio"/> d | <input type="radio"/> h |

810. Both diodes are ideal with a forward voltage of 1V. The switch has an ON resistance of 1 k $\Omega$  and is closed at  $t=0$ . The steady state voltage across the capacitor is equal to:

- (a) -1V
- (b) -2V
- (c) 0V
- (d) 2V
- (e) Undefined
- (f) 0.5V
- (g) -0.5V
- (h) 1V

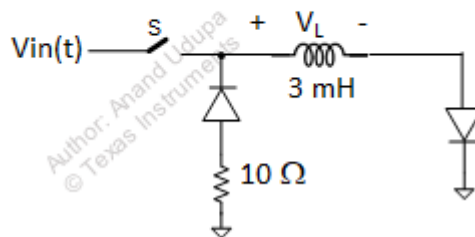


Answer the Question 810

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| <input type="radio"/> b | <input type="radio"/> f |
| <input type="radio"/> c | <input type="radio"/> g |
| <input type="radio"/> d | <input type="radio"/> h |

811.  $V_{in}(t) = 3.u(t)$ . Switch S is kept closed until time instant of  $t_0=1$  msec and then opened. Both diodes are ideal and have zero forward drop. What is the voltage ( $V_L$ ) across the inductor at  $t=t_0+$ .

- (a) -10V
- (b) -6V
- (c) 6V
- (d) -3V
- (e) 10V
- (f) -30V
- (g) 30V
- (h) 3V



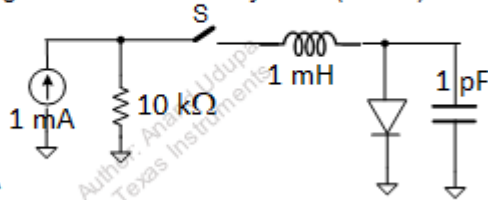
Answer the Question 811

- |                         |                         |
|-------------------------|-------------------------|
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| <input type="radio"/> b | <input type="radio"/> f |
| <input type="radio"/> c | <input type="radio"/> g |

☐ d☐ h

812. S is an ideal switch (zero ON resistance and infinite OFF resistance) which is closed at  $t=1$  sec. The diode has a forward drop of 1V. What is the current through the diode in steady state (at  $t=\infty$ )

- (a) 1 mA
- (b) 0 mA
- (c) 2 mA
- (d) 0.1 mA
- (e) 0.5 mA
- (f) 0.75 mA
- (g) 0.9 mA
- (h) 1.5 mA

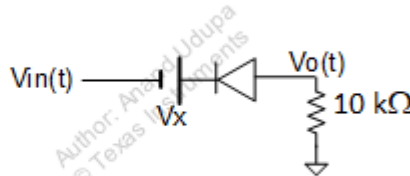


Answer the Question 812

☐ a☐ e☐ b☐ f☐ c☐ g☐ d☐ h

814.  $V_{in}(t)=9.\sin(100t)$ . What are the maximum and minimum voltages at  $V_o(t)$ ? Assume diode is ideal.  $V_x=6V$ .

- (a) 6V, -7V
- (b) 2V, -1V
- (c) 0V, -3V
- (d) 6V, -3V
- (e) 4V, 0V
- (f) 0V, -6V
- (g) 9V, 0V
- (h) 2V, -3V



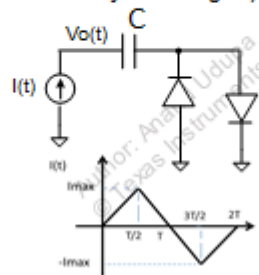
Answer the Question 814

☐ a☐ e

☐ b☐ f☐ c☐ g☐ d☐ h

816. The current source has a profile as shown. The diodes are ideal with a forward drop of  $0.7V$ . What is  $V_o(t)$  at time  $t=T+$  if:  $I_{MAX}=2\text{ mA}$ ,  $T=1\text{ msec}$ ,  $C=1\mu F$  (The capacitor is initially uncharged).

- (a)  $1V$   
 (b)  $0.6V$   
 (c)  $1.7V$   
 (d)  $0.3V$   
 (e)  $0.9V$   
 (f)  $0V$   
 (g)  $0.2V$   
 (h)  $0.4V$

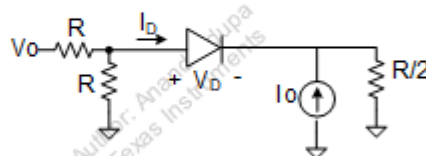


Answer the Question 816

☐ a☐ e☐ b☐ f☐ c☐ g☐ d☐ h

817. For the circuit, the diode current,  $I_D = K \cdot V_D^2$  for  $V_D > 0$ ; and  $I_D = 0$  for  $V_D \leq 0$ . Find  $I_D$  if:  $K = 3/4$ ,  $R = 1\ \Omega$ ,  $V_o = 10V$ , and  $I_o = 8A$ .

- (a)  $3A$   
 (b)  $1A$   
 (c)  $0.44A$   
 (d)  $0.66A$   
 (e)  $2.25A$   
 (f)  $2A$   
 (g)  $0.75A$   
 (h)  $0.33A$



## Answer the Question 817

☐ a

☐ e

☐ b

☐ f

☐ c

☐ g

☐ d

☐ h

Done

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