

Electronic Circuits – Assignment

03

Diode Applications I

#	Student ID	Student Name	Grade (10)
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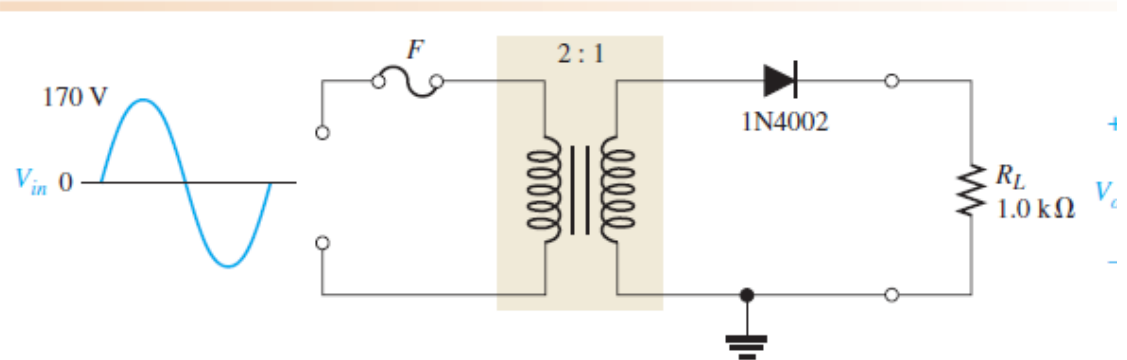
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<p>1. يتم تسليم التمرين محلولا في خلال أسبوع من تاريخ التمرين، و يتم حذف درجتين من التمرين عن كل أسبوع تأخير</p> <p>2. يتم التسليم لمعيد المقرر مباشرة</p> <p>3. تتم أجابه التمرين في نفس ورق الأسئلة</p>

T & False questions

#	Question	Answer
1	The two regions of a diode are the anode and the collector.	F
2	A diode conducts current when forward-biased.	T
3	Two types of current in a diode are electron and hole.	T
4	The output frequency of a half-wave rectifier is twice the input frequency.	F
5	PIV stands for positive inverse voltage.	F

MCQ

#	Question	
1	When a diode is forward-biased and the bias voltage is increased, the voltage across the diode (assuming the practical model) will (a) increase (b) decrease (c) not change	c
2	When a diode is reverse-biased and the bias voltage is increased, the reverse current (assuming the complete model) will (a) increase (b) decrease (c) not change	a
3	If the forward current in a diode is increased, the diode voltage (assuming the practical model) will (a) increase (b) decrease (c) not change	c
4	If the barrier potential of a diode is exceeded, the forward current will (a) increase (b) decrease (c) not change	a
5	If the turns ratio of the transformer in Figure 2-28 is decreased, the forward current through the diode will  (a) increase (b) decrease (c) not change	b



Problems

Problem 1	<p>Determine the peak output voltages for the rectifiers in Figure 2–24 if the peak input in part (a) is 3 V and the peak input in part (b) is 50 V.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"><div style="text-align: center;"><p>(a)</p></div><div style="text-align: center;"><p>(b)</p></div></div>
Answer 1	<p>..... (a) 2.3 V (b) 49.3 V.....</p>



Q2	<p>What is the peak inverse voltage across each diode in Figure?</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> (a) (b) </div>
Sol 2	<div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div> <div style="border-top: 1px dotted black; height: 10px; margin-bottom: 5px;"></div>



Q3 What is the peak forward current through each diode in Figure

(a)

(b)

Sol
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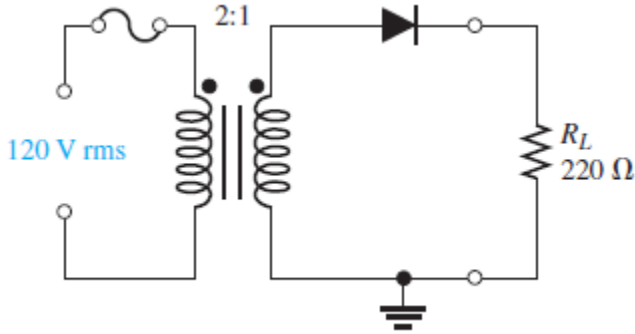
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Q4

Determine the peak and average power delivered to R_L in Figure



Sol
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