

EXAM 3

Rnumber	Exam3
R00151631	100
R00542746	
R00645753	100
R00755805	100
R00762970	100
R00766893	100
R00867387	100
R00867424	100
R00920841	100
R00945392	84
R01025253	100
R01045676	100
R01074223	34
R01074436	84
R01075399	100
R01077981	100
R01080567	100
R01084235	84
R01085510	100
R01085771	100

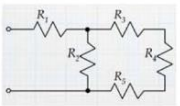
Summer 2015. Exam 3. QQ 1-3

#1. A 120-V power line is protected by a 15-A fuse. What is the maximum number of "120V, 100W" light bulbs that can be operated at full brightness from this line?

A. 2  
B. 4  
C. 7  
D. 12  
E. None of the above

#2. In the circuit below,  $R_1=R_2=R_3=R_4=R_5=1 \text{ Ohm}$ . The equivalent resistance between the terminals of the circuit is:

1.  $2/15 \text{ Ohm}$   
2.  $4/3 \text{ Ohm}$   
3.  $5 \text{ Ohm}$   
4.  $7/4 \text{ Ohm}$   
5. None of the above



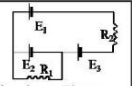
#3. A  $1.0 \mu\text{F}$  capacitor with an initial stored energy of 5 mJ is discharged through a  $1.0 \text{ K}\Omega$  resistor. What is the current through the resistor when the discharge starts?

1. 2 mA  
2. 0.1 A  
3. 5 A  
4. 250A  
5. None of the above

Summer 2015. Exam 2. QQ 4-6

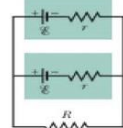
#4. In the above Figure,  $R_1=100 \text{ Ohm}$ ,  $R_2=500 \text{ Ohm}$ , and the ideal batteries have emfs  $E_1=6.0 \text{ V}$ ,  $E_2=5.0 \text{ V}$ , and  $E_3=4.0 \text{ V}$ . The potential difference between the top and bottom terminals of the resistor  $R_2$  equals:

A. 3V  
B. -3V  
C. 0.033V  
D. -0.02V  
E. None of the above



#5. The potential difference between the plates of a leaky (meaning that charge leaks from one plate to the other)  $1.0 \text{ mF}$  capacitor drops to one-tenth its initial value in 23 s. What is the equivalent resistance between the capacitor plates?

A.  $2.3 \Omega$   
B.  $23 \text{ k}\Omega$   
C.  $1 \text{ k}\Omega$   
D.  $10 \text{ k}\Omega$   
E. None of the above



#6. In the above Figure, two batteries with an internal resistance  $r = 3 \Omega$  are in parallel across a resistance  $R$ . For what value of  $R$  is the dissipation rate in the resistor a maximum?

A.  $1.5 \Omega$   
B.  $3 \Omega$   
C.  $6 \Omega$   
D.  $9 \Omega$   
E. None of the above

R01109294	100
R01113113	100
R01128456	100
R01148464	100
R01148668	100
R01165984	100
R01174627	84
R01175146	100
R01175785	17
R01176443	100
R01178396	100
R01182017	68
R01189420	100
R01290875	84
R01309869	100
R01314078	100
R01314409	84
R01344090	100
R01345745	84
R01348865	100
R01382754	84