

Chapter 10 Questions:

Please handwrite & turn in questions on a separate sheet of paper.

1. Tollbooth stations on roadways and bridges usually have a piece of wire stuck in the ground before them that will touch a car as it approaches. Why?
2. In regions of low humidity, such as the southwestern United States, people develop a special “grip” when opening car doors, or touching metal door knobs, that involves placing as much of the hand on the device as possible, not just the ends of one’s fingers.
Discuss the induced charge, and explain why this is done.
5. Why are some people killed by 120 V while others are only shocked by the same voltage?
6. If you want a particular circuit to carry a large current, is it better to use a large-diameter wire or a small-diameter wire?
7. Why are 220-V circuits used for such devices as electric clothes dryers and stoves?
What differences do you expect to find in the wire used for these circuits compared to 120-V lines?
8. What is the purpose of a fuse or a circuit breaker?
10. What is the disadvantage of using an inexpensive extension cord (*with a small-diameter wire*) to run an air conditioner or a refrigerator?
11. Which of two light bulbs, 25W or 60W, has the higher resistance?
Which one draws the most current?
Which one uses the most energy?
12. What conditions are necessary for there to be a current between two points in a wire?