Electrical Safety - Chapter 1

Read Chapter 1 and complete the following.

1. What is the leading cause of fatality accidents?
2. List three electrical safety violations or poor practices that exist – or have taken place – in your home.
3. A conductor is a material which allows electricity to pass through (conduct). The most common conductors used in electrical appliances and circuits are metal. List two other materials which can conduct electricity.
4. You will be working with electricity during this and other modules. Create a list of what you feel are the top 10 most important safety rules you need to follow while working with electricity in the school. After this list has been cleared by the instructor, tape it on the front of your Electro-Technologies binder.
5. Indicate on the following drawing of Joe Safety what specific practical safety attire must be used when working with electricity in the school shop and briefly explain why.
6. Ungrounded equipment is dangerous. Explain what the danger is and what precautions help eliminate the danger.
7. What is *lockout* and *tagout*, and how do they prevent dangerous electrical situations?
8. a) What three factors create an electrical circuit?

b) Which of the three does the human body become when a shock takes place?
9. The lower the body resistance, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the potential electric shock hazard.
10. a) What unit is used to measure resistance? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) Which specific piece of equipment is used to measure resistance? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. What unit is used to measure voltage? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. a) What unit is used to measure current? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
b) The amount of current flowing through a circuit depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
c) How much current does it take to be considered dangerous? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. If there is enough current in a flashlight to severely injure or kill a human being, why doesn’t it hurt to pick up a battery and feel both ends at the same time?
14. Describe two conditions where you shouldn’t work with electricity.
15. First aid certification is something all workers should obtain. There are, however, some very basic first aid procedures which individuals should be aware of and can use without certification. For each of the following injuries, briefly describe the first-aid practice that can be used.

a) bleeding

b) burns

c) electric shock
16. What is the most basic way to reduce the chance of fire in the shop?
17. What type of fire extinguisher should be used to fight an electrical fire?
18. What is the name of the federal legislation that governs safety in the workplace? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. Complete the following chart with the appropriate safety information regarding color-coding safety related items, equipment and situations:

|  |  |
| --- | --- |
| **Color** | **Items, Equipment, Situation** |
| Red |  |
| Yellow |  |
| Orange |  |
| Purple |  |
| Green |  |

1. Provide a definition for the following terms:

a) resistance –

b) voltage –

c) current –

d) hazardous substance –

e) hazardous waste –

f) corrosive -

g) ignitable -

h) toxic -

i) reactive -

j) octopus connection –

k) third prong -

l) permanent wiring -

m) combustible -

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