

# Chapter 7-I: Electricity & Electrical Safety

## Homework / Quiz

HOMEWORK — STUDENT COPY

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 27

### Section A: Electrical Theory

Current, conductors, and circuits | Questions 1–7

**WORD BANK:** conductor • nonconductor • circuit • direct • alternating • rectifier

**Instructions:** Fill in each blank with the correct term.

1. Electricity is the movement (flow) of \_\_\_\_\_ (electrons) along a path. **△ TRICKY**
2. A material that easily carries electric current, such as copper or metal, is a \_\_\_\_\_.
3. A material that resists electric current, such as rubber, glass, or silk, is a \_\_\_\_\_ (insulator).
4. The complete path that current travels from the source and back is a complete electric \_\_\_\_\_.
5. A constant, even-flowing current that travels in one direction is \_\_\_\_\_ current (DC). **△ TRICKY**
6. A rapid, interrupted current that flows back and forth is \_\_\_\_\_ current (AC).

**Instructions:** Circle the letter of the best answer.

7. A device that changes alternating current to direct current is a: **△ TRICKY**
  - a) rectifier
  - b) fuse
  - c) conductor
  - d) converter

### Section B: Electrical Measurements

Units used to measure electricity | Questions 8–14

**WORD BANK:** volt • ampere • milliamperes • ohm • watt • kilowatt

**Instructions:** Fill in each blank with the correct term.

8. The unit that measures the pressure or force that pushes current forward is the \_\_\_\_\_. **△ TRICKY**
9. The unit that measures the strength or rate of an electric current is the \_\_\_\_\_.
10. One one-thousandth of an ampere is a \_\_\_\_\_.
11. The unit that measures the resistance of a current is the \_\_\_\_\_.
12. The unit that measures how much electrical energy is being used is the \_\_\_\_\_.
13. One thousand watts equals one \_\_\_\_\_. **△ TRICKY**

**Instructions:** Circle the letter of the best answer.

14. Standard wall outlets in the U.S. provide about: **△ TRICKY**
  - a) 12 amps
  - b) 120 volts

- c) 12 volts
- d) 1,000 ohms

## Section C: Electrical Safety Devices & Guidelines

Protecting people and equipment | Questions 15–22

**Instructions:** Fill in each blank with the correct term.

15. A safety device that melts and breaks the circuit when too much current flows is a \_\_\_\_\_.

△ TRICKY

16. A switch that automatically interrupts a circuit and can be reset is a circuit \_\_\_\_\_.

17. Completing an electric circuit to carry current safely away (often via a third prong) is \_\_\_\_\_.

△ TRICKY

18. The safety device that instantly shuts off current if it senses a fault near water is a \_\_\_\_\_ (GFI/GFCI).

**Instructions:** Circle the letter of the best answer.

19. 'UL' on an appliance stands for:

- a) Utility Limit
- b) Ultra Light
- c) Universal License
- d) Underwriters Laboratories (tested for safety)

**Instructions:** Circle TRUE or FALSE.

20. You should unplug appliances by pulling the cord, not the plug. △ TRICKY

TRUE FALSE

21. A client should never be left unattended while connected to an electrical device. △ TRICKY

TRUE FALSE

**Instructions:** Number the steps in the correct order.

22. Number these electrical safety practices 1–4 as a sensible routine.

- \_\_\_ Inspect cords, plugs, and equipment for damage
- \_\_\_ Confirm the appliance is UL-listed and properly grounded
- \_\_\_ Avoid overloading outlets and keep cords off the floor/water
- \_\_\_ Never leave the client unattended with the device running

## Section D: Electrotherapy Modalities & Light Energy

Currents used in services and the light spectrum | Questions 23–27

**Instructions:** Fill in each blank with the correct term.

23. An applicator that conducts current to the client is an \_\_\_\_\_.

**Instructions:** Circle the letter of the best answer.

24. Which is an electrotherapy modality?

- a) Galvanic current
- b) Distillation
- c) Effleurage
- d) Pétrissage

**Instructions:** Fill in each blank with the correct term.

25. Tesla high-frequency current is valued for its \_\_\_\_\_ (germ-killing) action. △ TRICKY

**Instructions:** Circle TRUE or FALSE.

26. Electromagnetic radiation includes both visible light and invisible light (such as UV and infrared).

**TRUE      FALSE**

**Instructions:** Circle the letter of the best answer.

27. Visible light makes up: **⚠ TRICKY**

- a) Only infrared light
- b) Only ultraviolet light
- c) A small part of the electromagnetic spectrum
- d) All of the electromagnetic spectrum

### **Bonus — Extra Credit**

*Not counted in the graded total* | Questions B1–B2

**Instructions:** Fill in each blank with the correct term.

**B1.** A three-prong plug is evidence of \_\_\_\_\_.

**Instructions:** Circle TRUE or FALSE.

**B2.** A converter changes direct current into alternating current.

**TRUE      FALSE**

— End of Homework (27 questions + 2 bonus) —