

1. Resistance in a circuit is generally measured in units of ____.

A. W

B. Ω

C. K

D. Z

2. Which of the following is the correct expression of Ohm's Law?

A. $I = R/V$

B. $R = P/V$

C. $I = P/V$

D. $I = V/R$

3. An operating lamp draws a current of .4 ampere. The amount of charge passing through the lamp in 10 seconds is?

A. .045 C

B. 4.0 C

C. 5.0 C

D. 6.24 C

4. To increase the brightness of a desk lamp a student replaces a 50 W light bulb with a 100 W light bulb. Compared to the 60 W light bulb the 100 W light bulb has?

- A. Less resistance and draws more current
- B. Less resistance and draws less current
- C. More resistance and draws more current
- D. More resistance and draws less current

5. An electric dryer consumes 6.0×10^6 joules of energy when operating at 220 volts for 30 minutes. During operation the dryer draws a current of approximately?

- A. 10 A
- B. 15 A
- C. 20 A
- D. 25 A

6. When 8.0 electronvolt photons strike a photo emissive surface, the maximum kinetic energy of ejected photoelectrons is 6.0 electronvolts. The work function of the photo emissive surface is

- A. .01 eV
- B. 1.0 eV
- C. 2.0 eV
- D. 3.0 eV

7. A high resistance is connected in series with the internal coil of a galvanometer to make?

- A. An ammeter
- B. A motor

C. A generator

D. A voltmeter

8. In a transformer, two coils are wound around a common iron core. To operate properly the transformer requires

A. More turns in the secondary coil than in the primary coil

B. More turns in the primary coil than in the secondary coil

C. A direct current source connecting to the secondary coil

D. An alternating current source connecting to the primary coil

9. Which device can be used to increase voltage from a source of direct current?

A. Generator

B. Electroscope

C. Induction coil

D. Mass spectrometer

10. The transformer on a power pole steps down the voltage from 10,800 volts to 120 volts. If the secondary coil contains 360 turns, how many turns are found on the primary coil?

A. 603

B. 900

C. 15,000

D. 32,400

11. An electric motor draws 150 amperes of current while operating at 240 volts. What is the power rating of this motor?

- A. 2.1×10
- B. 2.7×10
- C. 3.6×10
- D. $4.1 \times 10^5 \text{ W}$

12. What is the potential difference across a 2.0 ohm resistor that draws 2.0 coulombs of charge per second?

- A. 1.0 V
- B. 2.0 V
- C. 3.0 V
- D. 4.0 V

13. If a 15-ohm resistor is connected in parallel with a 30 ohm-resistor, the equivalent resistance is?

- A. 5W
- B. 7W
- C. 10W
- D. 15W

14. A metal wire has length L and cross-sectional area A. The resistance of the wire is directly proportional to

- A. L/A

- B. A/L
- C. $L + A$
- D. $L \times A$

15. A wire carries a current of 2.0 amperes. How many electrons pass a given point in this wire in 1.0 second?

- A. 1.3×10^{18}
- B. 2.0×10^{18}
- C. 1.3×10^{19}
- D. 2.0×10^{19}

Answer Key

- 1. A
- 2. D
- 3. C
- 4. A
- 5. B
- 6. C
- 7. D
- 8. D
- 9. C
- 10. D
- 11. C
- 12. D
- 13. C

14. A

15. C