Practice Quiz (Chapter 23)

1) Which statement is correct?
A) Charge flows in a closed circuit.
B) Voltage flows through an open or a closed circuit.
C) Resistance flows through an open circuit.
D) Current is the primary cause of voltage.
Answer: A

2) Heat a copper wire and its electric resistance
A) decreases.
B) remains unchanged.
C) increases.
Answer: C

3) A wire carrying a current is normally charged
A) negatively.
B) positively.
C) not at all.
Answer: C

4) The current through a 10-ohm resistor connected to a 120-V power supply is
A) 1 A.
B) 10 A.
C) 12 A.
D) 120 A.
E) none of these
Answer: C

5) When a 10-V battery is connected to a resistor, the current in the resistor is 2 A. What is the resistor's value?
A) 2 ohms
B) 5 ohms
C) 10 ohms
D) 20 ohms
E) more than 20 ohms
Answer: B

6) The source of electrons lighting an incandescent ac light bulb is
A) the power company.
B) electrical outlet.
C) atoms in the light bulb filament.
D) the wire leading to the lamp.
E) the source voltage.
Answer: C

7) When two lamps are connected in parallel to a battery, the electrical resistance that the battery
senses is
A) more than the resistance of either lamp.
B) less than the resistance of either lamp.
C) none of these
Answer: B

8) On some early automobiles both headlights went out when one bulb burned out. The headlights must have been connected in
A) parallel.
B) perpendicular.
C) series.
D) haste.
Answer: C

9) There are electrons in the filament of the ac lamp in your bedroom. When you turn on the lamp and it glows, the glowing comes from
A) different electrons; the ones that flow in the circuit to your lamp.
B) the same electrons.
C) the positive charges that flow in the filament.
Answer: B

27) In an electric circuit, the safety fuse is connected to the circuit in
A) series.
B) parallel.
C) either series or parallel.
Answer: A

10) A circuit breaker often serves the same purpose as a
A) battery
B) fuse.
C) capacitor.
D) All of the above choices are correct.
E) None of the above choices are correct.
Answer: B

11) An electrical diode is useful for
A) storing electrical energy.
B) boosting voltage.
C) limiting current.
D) voltage modification.
E) changing ac to dc.
Answer: E

12) In a simple circuit containing a bulb, energy is given to the moving charges by
A) the bulb.
B) the wires.
C) a generator.
D) none of these.
Answer: C

13) The number of electrons delivered daily to an average American home by an average power utility in the mid 1980s was
A) zero.
B) 110.
C) 220.
D) billions of billions.
E) none of these
Answer: A

14) Two lamps, one with a thick filament and one with a thin filament, are connected in parallel to a battery. The voltage is
A) greatest across the lamp with the thick filament.
B) greatest across the lamp with the thin filament.
C) the same in both lamps.
Answer: C

15) Two lamps, one with a thick filament and one with a thin filament of the same material, are connected in series to a battery. The voltage is
A) greater across the lamp with the thick filament.
B) greater across the lamp with the thin filament.
C) the same for both lamps.
Answer: B

16) As more lamps are put into a parallel circuit, the overall current in the power source
A) increases.
B) decreases.
C) stays the same.
Answer: A

17) When we say an appliance "uses up electricity," we really are saying that
A) current disappears.
B) electric charges are dissipated.
C) the main power supply voltage is lowered.
D) electrons are removed from the circuit and placed elsewhere.
E) electron kinetic energy is changed into heat.

18) If 0.8 A of current flow through a light bulb connected to a 120 V outlet, the power consumed is
A) 12 W.
B) 15 W.
C) 60 W.
D) 96 W.
E) 120 W.
Answer: D
19) A 4-ohm resistor is connected in parallel with a 6-ohm resistor. This combination produces an equivalent resistance of
A) 2.4 ohms.
B) 4 ohms.
C) 5 ohms.
D) 5.5 ohms.
E) 10 ohms.
Answer: A

20) Compared to a single lamp connected to a battery, two identical lamps connected in series to the same battery will carry
A) more current.
B) less current.
C) the same current.
Answer: B

21) An electric heater is rated at 300 W when used in a 110-V circuit. The safety fuse in the circuit can handle 15 A of current. How many heaters can be safely operated in the circuit?
A) 2
B) 3
C) 4
D) 5
E) more than 5
Answer: D

22) The current through two identical light bulbs connected in series is 0.25 A. The voltage across both bulbs is 110 V. The resistance of a single light bulb is
A) 22 ohms.
B) 44 ohms.
C) 220 ohms.
D) 440 ohms.
E) none of these
Answer: C

23) What is the resistance of a 120-W incandescent lamp connected to a 120-V power supply?
A) 1 ohm
B) 60 ohms
C) 100 ohms
D) 144 ohms
E) none of these
Answer: E