

Journeyman Chapter 7

Registered Master Electrician Reviewer

Prepared by : Argie G. Galvez, UAP, RMP

1. An advantage that rubber insulation has is that _____.

- a. Is not damage by oil
- b. Is a good for extreme temperatures
- c. Does not absorb much moisture
- d. Will not deteriorate with age

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2. The advantage of using a storage battery rather than a dry cell is the storage battery _____.

- a. Is portable
- b. Is less expensive
- c. Can be recharged
- d. Is easier to use

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3. The least desirable device for measuring an electrical cabinet containing live equipment is a _____.

- a. 6' wooden ruler
- b. Plastic ruler
- c. Wood yardstick
- d. 12' steel tape

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- b. Plastic ruler
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4. The relationship of a transformer primary winding to the secondary winding is expressed in ____.

- a. Wattage
- b. Turns-ratio
- c. Current
- d. Voltage

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5. When the size #12 of a stranded wire is referred to, this number specifies the _____.

- a. Strength of the wire
- b. Cross-sectional area of the wire
- c. Square inch area of the insulation
- d. The pounds per square inch

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- d. The pounds per square inch

6. The purpose of a clip clamp is to _____.

I. Ensure good contact between the fuse terminals of cartridge fuses and the fuse clips

II. Make it possible to use cartridge fuses of a smaller size than that for which the fuse clips are intended

III. Prevent the accidental removal of the fuse due to vibration

a. I, II & III

b. I only

c. II only

d. I & II only

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7. To increase the life of an incandescent light bulb you would _____.

- a. Use at a higher than rated voltage
- b. Use at a lower than rated voltage
- c. Turn off when not in use
- d. Use at a higher wattage

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8. Which of the following statements about mounting single-throw knife switches in a vertical position is (are) correct?

I. The switch shall be mounted so that the blade hinge is at the bottom

II. The supply side of the circuit shall be connected to the bottom of the switch

a. I only

b. II only

c. Both I & II

d. Neither I & II

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9. When re-routing conduit, it may be necessary to increase the wire size, if the distance is greater, in order to _____.

- a. Account for current drop
- b. Allow for possible resistance drop
- c. Compensate for voltage drop
- d. Account for ampacity drop

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- a. Account for current drop
- b. Allow for possible resistance drop
- c. Compensate for voltage drop
- d. Account for ampacity drop

10. One megohm is the equivalent of _____.

- a. 100 ohms
- b. 1000 ohms
- c. 100,000 ohms
- d. 1,000,000 ohms

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11. On smaller gauges of wire, they are pencil-stripped to prevent _____.

- a. Over stripping
- b. loosening of the wire nut
- c. Nicks the wire
- d. Other

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12. Galvanized conduit is made of _____.

- a. Iron
- b. Zinc
- c. Nickel
- d. Lead

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- b. Zinc
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13. The frame of a motor is usually positively grounded to _____.

- a. Protect against shock
- b. Remove the static currents
- c. Provide 115 volts
- d. Protect from lightning

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- a. Protect against shock
- b. Remove the static currents
- c. Provide 115 volts
- d. Protect from lightning

14. When wrapping a splice with both rubber and friction tape, the main purpose of the friction tape is to _____.

- a. Provide extra insulation
- b. Build up the insulation to the minimum thickness required
- c. Protect the rubber tape
- d. Provide a waterproof seal

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15. An electrician should not wear shoes that have sponge rubber soles while working mainly because they _____.

- a. Wear out too quickly
- b. Are not waterproof
- c. Are not insulated
- d. Are easily punctured when stepping on a nail

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a. Wear out too quickly

b. Are not waterproof

c. Are not insulated

d. Are easily punctured when stepping on a nail

16. The transformer output is measured by _____.

- a. Volts
- b. Amps
- c. Volt-amps
- d. Watts

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- b. Amps
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17. Which of the following hacksaw blades should be used for the best results in cutting EMT?

- a. 12 teeth per inch
- b. 18 teeth per inch
- c. 24 teeth per inch
- d. 32 teeth per inch

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18. So constructed or protected that exposure to the weather will not interfere with successful operation is

_____.

I. Weather proof

II. Raintight

III. Watertight

a. I only

b. II only

c. I & II only

d. I, II & III

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19. The rating of the largest size regular plug fuse is _____ amperes.

- a. 15
- b. 20
- c. 30
- d. 60

19. The rating of the largest size regular plug fuse is _____ amperes.

- a. 15
- b. 20
- c. 30
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20. A hacksaw with fine teeth used to cut raceways is commonly called a _____.

- a. Tube saw
- b. Keyhole saw
- c. Sabre saw
- d. Crosscut saw

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- c. Sabre saw
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21. You shouldn't use a file without a handle because _____.

- a. The file is hard to hold
- b. The user may be injured
- c. The file will cut too deep
- d. Improper filling stroke

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22. The brightness of an incandescent lamp is rated in _____.

- a. Watts
- b. Foot candle
- c. Volt-amps
- d. Lumens

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- a. Watts
- b. Foot candle
- c. Volt-amps
- d. Lumens**

23. If the primary winding of a 10 to 1 step down transformer has 20,000 turns, the secondary winding should have _____ turns.

a. 200,000

b. 2000

c. 200

d. 20

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a. 200,000

b. 2000

c. 200

d. 20

24. An electron is _____.

- a. A neutron
- b. An orbiting particle
- c. A proton
- d. The smallest part of an atom with a negative charge

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a. A neutron

b. An orbiting particle

c. A proton

d. The smallest part of an atom with a negative charge

25. The signals of electrical injury may include _____.

I. Unconsciousness

II. Weak, irregular, or absent pulse

III. Dazed, confused behaviour

a. I only

b. II only

c. III only

d. I, II & III

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I. Unconsciousness

II. Weak, irregular, or absent pulse

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b. II only

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26. This CODE is intended to be suitable for mandatory application by governmental bodies exercising legal jurisdiction over _____.

I. Electrical installation

II. And for use by insurance inspectors

a. Both I & II

b. Neither I nor II

c. I only

d. II only

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a. Both I & II

b. Neither I nor II

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27. The name of the tool common used for bending small size conduit is a _____.

- a. Growler
- b. Mandrel
- c. Hickey
- d. Henry

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- a. Growler
- b. Mandrel
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- d. Henry

28. When cutting holes in masonry which of the following tools is most commonly used?

- a. Auger bit
- b. Router bit
- c. Star drill
- d. Reamer

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29. Electrician's diagonal lineman pliers should not be used to cut _____.

- a. Aluminum wire
- b. Copper wire
- c. Steel wire
- d. Copper-clad wire

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- a. Aluminum wire
- b. Copper wire
- c. Steel wire**
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30. One of the following is the first thing to do when a person gets an electric shock and is still in contact with the supply.

- a. Remove the victim from contact by using a dry stick or dry rope
- b. Treat for burns
- c. Start artificial respiration immediately
- d. Shut off power within 10 minutes

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- a. Remove the victim from contact by using a dry stick or dry rope
- b. Treat for burns
- c. Start artificial respiration immediately
- d. Shut off power within 10 minutes

31. A “mil” measures _____.

a. $1/8$ ”

b. 0.000001”

c. 0.001”

d. 0.00010”

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b. 0.000001”

c. 0.001”

d. 0.00010”

32. The term “hertz” means _____.

- a. Car rental company
- b. Frequency
- c. Degrees
- d. Phase angle

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a. Car rental company

b. Frequency

c. Degrees

d. Phase angle

33. The difference of electrical potential between two conductors of a circuit is the _____.

- a. Resistance
- b. Amperage
- c. Voltage
- d. Wattage

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- a. Resistance
- b. Amperage
- c. Voltage**
- d. Wattage

34. The letters DPDT are used to identify a type of _____.

- a. Insulation
- b. Fuse
- c. Motor
- d. Switch

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35. The term “ampere-hour” is associated with _____.

- a. Motors
- b. Transformers
- c. Electromagnets
- d. Storage batteries

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- a. Motors
- b. Transformers
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- d. Storage batteries

36. Which of the following would improve the resistance to earth?

I. Use multiple ground rods

II. Treat the soil

III. Lengthen the ground rod

a. I only

b. II & III only

c. I & III only

d. I, II & III

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37. A tap tool is a tool used to _____.

- a. Cut external threads
- b. Remove broken bolts
- c. Ream raceways
- d. Cut internal threads

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- b. Remove broken bolts
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38. When cutting a metal conduit with a hacksaw, the pressure applied to the hacksaw should be on _____.

- a. The return stroke only
- b. The forward stroke only
- c. Both the forward and return stroke equally
- d. None of these

38. When cutting a metal conduit with a hacksaw, the pressure applied to the hacksaw should be on _____.

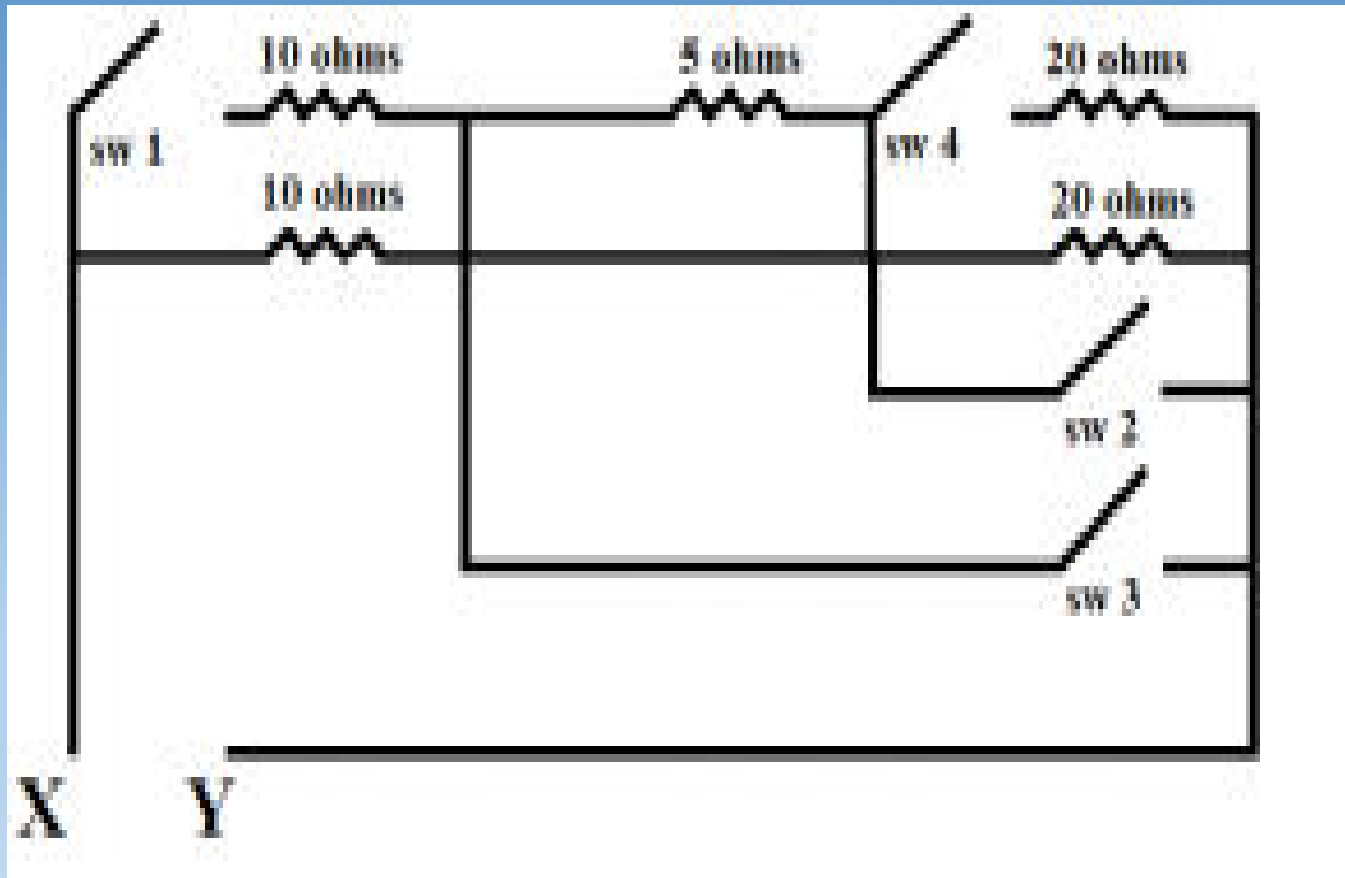
a. The return stroke only

b. The forward stroke only

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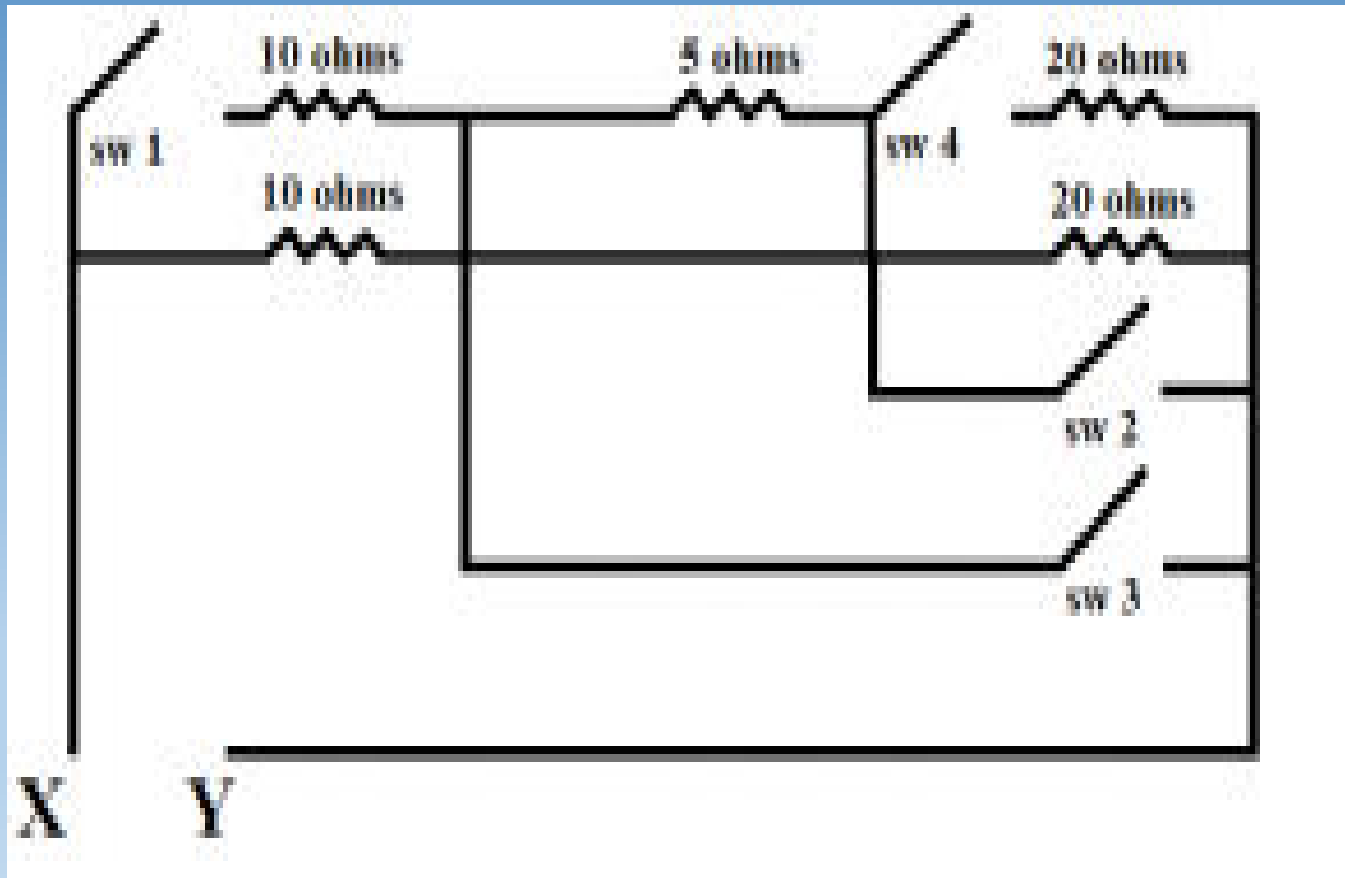
d. None of these

39. The switches to be closed in order to obtain a combined resistance of 5 ohms are _____.



- a. 1 & 3
- b. 2 & 3
- c. 1 & 2
- d. 1 & 4

39. The switches to be closed in order to obtain a combined resistance of 5 ohms are _____.



a. 1 & 3

b. 2 & 3

c. 1 & 2

d. 1 & 4

40. When the term “10-32” in connection with machine screws commonly used in lighting work, the number 32 refers to _____.

- a. Screw length
- b. Screw thickness
- c. Diameter of hole
- d. Threads per inch

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41. To fasten a box to a terra cotta wall you would use _____.

- a. Lag bolts
- b. Expansion bolts
- c. Wooden plugs
- d. Rawl plugs

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- b. Expansion bolts
- c. Wooden plugs
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42. The output winding of a transformer is called the _____.

- a. Primary
- b. Output
- c. Secondary
- d. Both a and b

42. The **output winding** of a transformer is called the _____.

- a. Primary
- b. Output
- c. Secondary**
- d. Both a and b

43. The flux commonly used for the soldering of electrical conductors is _____.

- a. Zinc chloride
- b. Rosin
- c. Borax
- d. None of these

43. The flux commonly used for the soldering of electrical conductors is _____.

- a. Zinc chloride
- b. Rosin
- c. Borax
- d. None of these

44. A shunt is sometimes used to increase the range of an electrical measuring instrument. The shunt is normally used when measuring _____.

- a. AC voltage
- b. DC voltage
- c. DC amperes
- d. AC amperes

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- a. AC voltage
- b. DC voltage
- c. DC amperes
- d. AC amperes

45. A battery operates in the principle of _____.

- a. Photo emission
- b. Triboelectric effect
- c. Electrochemistry
- d. Voltaic conductivity

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- a. Photo emission
- b. Triboelectric effect
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- d. Voltaic conductivity

46. When an electric current is forced through a wire that has considerable resistance, the _____.

I. Ampacity will decrease

II. Voltage will drop

III. Wire will heat up

a. III only

b. I & II only

c. II & III only

d. I & III only

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II. Voltage will drop

III. Wire will heat up

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c. II & III only

d. I & III only

47. The continuity of an electrical circuit can be determined in the field by the means of _____.

- a. An ammeter
- b. Wheatstone bridge
- c. Bell & battery set
- d. Wattmeter

47. The **continuity** of an electrical circuit can be determined in the field by the means of _____.

- a. An ammeter
- b. Wheatstone bridge
- c. Bell & battery set**
- d. Wattmeter

48. A wattmeter is connected in _____ in the circuit.

- a. Series
- b. Parallel
- c. Series-parallel
- d. Wattage

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a. Series

b. Parallel

c. Series-parallel

d. Wattage

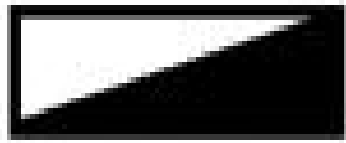
49. A shunt is used to measure _____.

- a. Resistance
- b. Capacitance
- c. Current
- d. Wattage

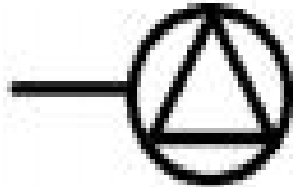
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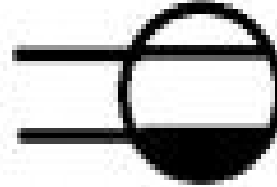
50. Which of the following is the symbol for a duplex outlet, split circuit?



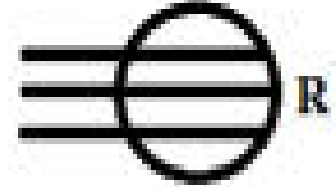
a.



b.

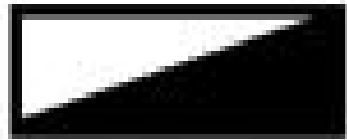


c.

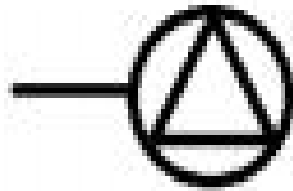


d.

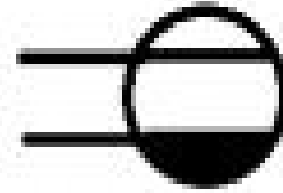
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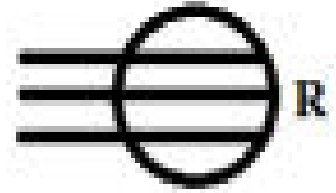
a.



b.



c.



d.

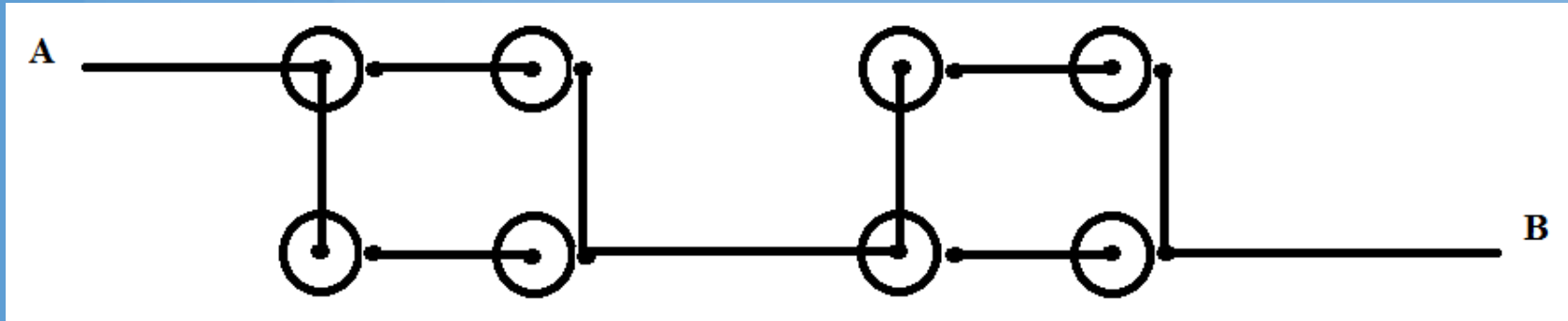
END!

Godbless!

Journeyman Chapter 8

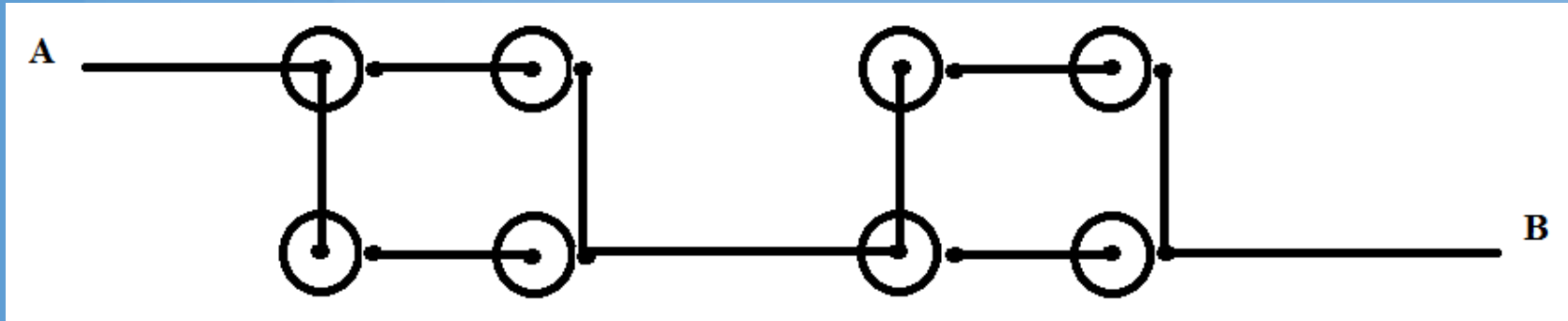
Registered Master Electrician Reviewer

1. Using 1.5 volt dry cell, the voltage between A and B would be _____.



- a. 1.5
- b. 4
- c. 6
- d. 12

1. Using 1.5 volt dry cell, the voltage between A and B would be _____.



- a. 1.5
- b. 4
- c. 6 (Series-Parallel)
- d. 12

2. A rigid conduit connecting to an outlet box should have a _____.

- a. Bushing and locknut on the outside
- b. Bushing on the outside and a locknut on the inside
- c. Locknut and bushing on the inside
- d. Locknut on the outside and a bushing on the inside

2. A rigid conduit connecting to an outlet box should have a _____.

- a. Bushing and locknut on the outside
- b. Bushing on the outside and a locknut on the inside
- c. Locknut and bushing on the inside
- d. Locknut on the outside and a bushing on the inside

3. Identified, as used in the Code in reference to a conductor or its terminal, means that such a conductor or terminal is to be recognized as _____.

- a. Grounded
- b. Bonded
- c. Colored
- d. Marked

3. Identified, as used in the Code in reference to a conductor or its terminal, means that such a conductor or terminal is to be recognized as _____.

a. Grounded (200-1)

b. Bonded

c. Colored

d. Marked

4. A toaster will produce less heat on low voltage because _____.

- a. Its total watt output decreases
- b. The current will decrease
- c. The resistance has not changed
- d. All of these

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- a. Its total watt output decreases
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- c. The resistance has not changed
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5. If the current flow through a conductor is increased, the magnetic field around the conductor _____.

- a. Is changed
- b. Becomes stronger
- c. Collapses
- d. Becomes weaker

5. If the current flow through a conductor is increased, the magnetic field around the conductor _____.

- a. Is changed
- b. Becomes stronger
- c. Collapses
- d. Becomes weaker

6. Comparing a #6 to a #10 conductor of equal lengths, the #6 will have lower _____.

- a. Cost
- b. Weight
- c. Resistance
- d. Strength

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- a. Cost
- b. Weight
- c. Resistance
- d. Strength

7. The definition of ambient temperature is _____.

- a. The temperature of the conductor
- b. The insulation rating of the conductor
- c. The temperature of the area surrounding the conductor
- d. The different temperature

7. The definition of **ambient temperature** is _____.

- a. The temperature of the conductor
- b. The insulation rating of the conductor
- c. The temperature of the area surrounding the conductor**
- d. The different temperature

8. The primary reason for using a hacksaw blade with fine teeth rather than coarse teeth when cutting large stranded conductors is _____.

- a. A coarse blade would overheat the conductor
- b. A coarse blade breaks too easily
- c. To avoid snagging or pulling strands
- d. A fine blade will bend easier

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- d. A fine blade will bend easier

9. The stranded residential service is a 3-wire, 240 volt single-phase system. The maximum voltage to ground in this system would be _____ volts.

- a. 115
- b. 120
- c. 199
- d. 208

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a. 115

b. 120

c. 199

d. 208

10. When working on a motor, the electrician should _____ to prevent accidental starting of the motor.

- a. Remove the fuses
- b. Ground the motor
- c. Shut off the switch
- d. Remove the belts

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- b. Ground the motor
- c. Shut off the switch
- d. Remove the belts

11. It is the responsibility of the electrician to make sure his tools are in good condition because ____.

- a. Defective tool can cause accidents
- b. The boss may want to use them
- c. The company will pay for only one set of tools
- d. A good job requires perfect tools

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- c. The company will pay for only one set of tools
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12. Continually overloading a conductor is a poor practice because it causes _____.

- a. The conductor to melt
- b. The insulation to deteriorate
- c. The conductor to shrink
- d. Damage the raceway

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- a. The conductor to melt
- b. The insulation to deteriorate**
- c. The conductor to shrink
- d. Damage the raceway

13. For better illumination you would _____.

- a. Random spacing of lights
- b. Even spacing, numerous lights
- c. Evenly spaced, higher ceilings
- d. Cluster lights

13. For better illumination you would _____.

- a. Random spacing of lights
- b. Even spacing, numerous lights
- c. Evenly spaced, higher ceilings
- d. Cluster lights

14. A junction box above a lay-in ceiling is considered _____.

- a. Concealed
- b. Accessible
- c. Readily accessible
- d. Recessed

14. A junction box above a lay-in ceiling is considered _____.

- a. Concealed
- b. Accessible
- c. Readily accessible
- d. Recessed

15. Which of the following metals is most commonly used in the filament of a bulb?

- a. Aluminum
- b. Mercury
- c. Tungsten
- d. Platinum

15. Which of the following metals is most commonly used in the filament of a bulb?

- a. Aluminum
- b. Mercury
- c. Tungsten
- d. Platinum

16. Electrical equipment can be defined as _____.

I. Fittings II. Appliances III. Devices IV. Fixtures

- a. I only
- b. I & IV only
- c. I, III & IV only
- d. All of these

16. Electrical equipment can be defined as

_____.

I. Fittings II. Appliances III. Devices IV. Fixtures

a. I only

b. I & IV only

c. I, III & IV only

d. All of these

17. If two equal resistance conductors are connected in parallel, the resistance of the two conductors is equal to _____.

- a. The resistance of one conductor
- b. Twice the resistance of one conductor
- c. One-half the resistance of one conductor
- d. The resistance of both conductors

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- a. The resistance of one conductor
- b. Twice the resistance of one conductor
- c. One-half the resistance of one conductor
- d. The resistance of both conductors

18. Wire connections should encircle binding posts in the _____ manner the nut turns to tighten.

- a. Opposite
- b. Same
- c. Reverse
- d. Different

18. **Wire connections** should encircle binding posts in the _____ manner the **nut turns to tighten**.

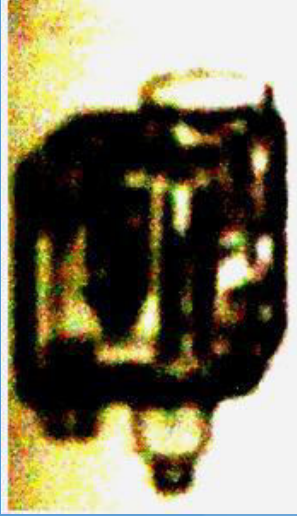
a. Opposite

b. Same

c. Reverse

d. Different

19. Which of the following is a limit switch?



a.



b.

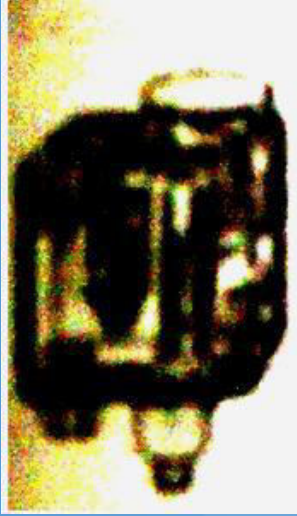


c.



d.

19. Which of the following is a limit switch?



a.



b.



c.



d.

20. The primary and secondary windings of a transformer always have _____.

- a. A common magnetic circuit
- b. The same size
- c. Separate magnetic circuits
- d. The same number of turns

20. The primary and secondary windings of a transformer always have _____.

- a. A common magnetic circuit
- b. The same size
- c. Separate magnetic circuits
- d. The same number of turns

21. Which of the following is not the force which moves electron?

- a. EMF
- b. Voltage
- c. Potential
- d. Current

21. Which of the following is **not the force which moves electron?**

- a. EMF
- b. Voltage
- c. Potential
- d. Current**

22. A motor with a wide speed range is a _____.

- a. DC motor
- b. AC motor
- c. Synchronous motor
- d. Induction motor

22. A motor with a wide speed range is a _____.

- a. DC motor
- b. AC motor
- c. Synchronous motor
- d. Induction motor

23. The “stator” of an AC generator is another name for the _____.

- a. Rotating portion
- b. Slip rings
- c. Stationary portion
- d. Housing

23. The “**stator**” of an AC generator is another name for the _____.

- a. Rotating portion
- b. Slip rings
- c. Stationary portion**
- d. Housing

24. Where galvanized conduit is used, the main purpose of the galvanizing is _____.

- a. Slow down rust
- b. Provide better continuity
- c. Provide better strength
- d. Provide a better surface for painting

24. Where galvanized conduit is used, the main purpose of the galvanizing is _____.

- a. Slow down rust
- b. Provide better continuity
- c. Provide better strength
- d. Provide a better surface for painting

25. To lubricate a motor sleeve bearing you would use _____.

- a. Grease
- b. Vaseline
- c. Oil
- d. Graphite

25. To lubricate a motor sleeve bearing you would use

_____.

- a. Grease
- b. Vaseline
- c. Oil
- d. Graphite

26. When soldering conductors, flux is used
_____.

- a. To heat the conductors quicker
- b. To keep the surfaces clean
- c. To prevent loss of heat
- d. To bond the conductors

26. When soldering conductors, flux is used
_____.

- a. To heat the conductors quicker
- b. To keep the surfaces clean
- c. To prevent loss of heat
- d. To bond the conductors

27. _____ means so constructed or protected that exposure to the weather will not interfere with successful operation.

- a. Weatherproof
- b. Weather tight
- c. Weather resistant
- d. All weather

27. _____ means so constructed or protected that exposure to the weather will not interfere with successful operation.

- a. Weatherproof
- b. Weather tight
- c. Weather resistant
- d. All weather

28. The current used for charging storage batteries is
_____.

- a. Square-wave
- b. Direct
- c. Alternating
- d. Variable

28. The current used for charging storage batteries is
_____.

- a. Square-wave
- b. Direct
- c. Alternating
- d. Variable

29. You should close a knife switch firmly and rapidly as there will be less _____.

- a. Likelihood of arcing
- b. Wear on the contacts
- c. Danger of shock
- d. Energy used

29. You should close a knife switch firmly and rapidly as there will be less _____.

- a. Likelihood of arcing
- b. Wear on the contacts
- c. Danger of shock
- d. Energy used

30. If one complete cycle occurs in $\frac{1}{30}$ of a second, the frequency is _____.

- a. 30 hertz
- b. 60 Cycle
- c. 115 cycle
- d. 60 hertz

30. If one complete cycle occurs in $1/30$ of a second, the frequency is _____.

- a. 30 hertz
- b. 60 Cycle
- c. 115 cycle
- d. 60 hertz

31. An instrument that measures electrical energy is called the _____.

- a. Galvanometer
- b. Wattmeter
- c. Dynamometer
- d. Watt-hour meter

31. An instrument that measures electrical energy is called the _____.

- a. Galvanometer
- b. Wattmeter
- c. Dynamometer
- d. Watt-hour meter

32. In electrical wiring, “wire nuts” are used to _____.

- a. Connect wires to terminals
- b. Join wires and insulate the joints
- c. Connect the electrode
- d. Tighten the panel studs

32. In electrical wiring, “wire nuts” are used to _____.

- a. Connect wires to terminals
- b. Join wires and insulate the joints
- c. Connect the electrode
- d. Tighten the panel studs

33. Which of the following would be the best metal for a magnet?

- a. Steel
- b. Aluminum
- c. Lead
- d. Tin

33. Which of the following would be the best metal for a magnet?

- a. Steel
- b. Aluminum
- c. Lead
- d. Tin

34. An electrician may use a megger _____.

- a. To determine the RPM of a motor
- b. To determine the output of a motor
- c. To check the wattage
- d. To test a lighting circuit for a ground.

34. An electrician may use a megger _____.

- a. To determine the RPM of a motor
- b. To determine the output of a motor
- c. To check the wattage
- d. To test a lighting circuit for a ground.

35. The least important thing in soldering two conductors together is to _____.

- a. Use plenty of solder
- b. Use sufficient heat
- c. Clean the conductors
- d. Use the proper flux

35. The **least important** thing in **soldering** two conductors together is to _____.

- a. **Use plenty of solder**
- b. Use sufficient heat
- c. Clean the conductors
- d. Use the proper flux

36. The property of a circuit tending to prevent the flow of current and at the same time causing energy to be converted into heat is referred to as _____.

- a. The inductance
- b. The resistance
- c. The capacitance
- d. The reluctance

36. The **property** of a circuit tending to **prevent the flow** of current and at **the same time causing energy to be converted into heat** is referred to as _____.

- a. The inductance
- b. The resistance**
- c. The capacitance
- d. The reluctance

37. Rigid conduit is generally secured to outlet boxes by _____.

- a. Beam clamps
- b. Locknuts and bushings
- c. Set screw
- d. Offsets

37. Rigid conduit is generally secured to outlet boxes by _____.

- a. Beam clamps
- b. Locknuts and bushings
- c. Set screw
- d. Offsets

38. Which one of the following is not a safe practice when lifting heavy items?

- a. Use the arm and leg muscles
- b. Keep your back as upright as possible
- c. Keep lifting a heavy object until you get help
- d. Keep your feet spread apart

38. Which one of the following is **not a safe practice** when lifting heavy items?

- a. Use the arm and leg muscles
- b. Keep your back as upright as possible
- c. Keep lifting a heavy object until you get help**
- d. Keep your feet spread apart

39. A thermocouple will transform _____ into electricity.

- a. Current
- b. Heat
- c. Work
- d. Watts

39. A **thermocouple** will transform _____ into electricity.

a. Current

b. Heat

c. Work

d. Watts

40. In a residence the wall switch controlling the ceiling light is usually _____.

- a. Connected across both lines
- b. A double pole switch
- c. Connected in one line only
- d. A 4-way switch

40. In a residence the wall switch controlling the ceiling light is usually _____.

- a. Connected across both lines
- b. A double pole switch
- c. Connected in one line only
- d. A 4-way switch

41. A switch which opens automatically when the current exceeds a predetermined limit would be called a _____.

- a. Limit switch
- b. Circuit breaker
- c. DT disconnect
- d. Contactor

41. A switch which opens automatically when the current exceeds a predetermined limit would be called a _____.

- a. Limit switch
- b. Circuit breaker
- c. DT disconnect
- d. Contactor

42. A wattmeter is a combination of which two of the following meters?

I. Ammeter

II. Ohmmeter

III. Phase meter

IV. Volt meter

V. Power factor meter

a. II & III

b. I & V

c. I & IV

d. II & V

42. A wattmeter is a combination of which two of the following meters?

I. Ammeter

II. Ohmmeter

III. Phase meter

IV. Volt meter

V. Power factor meter

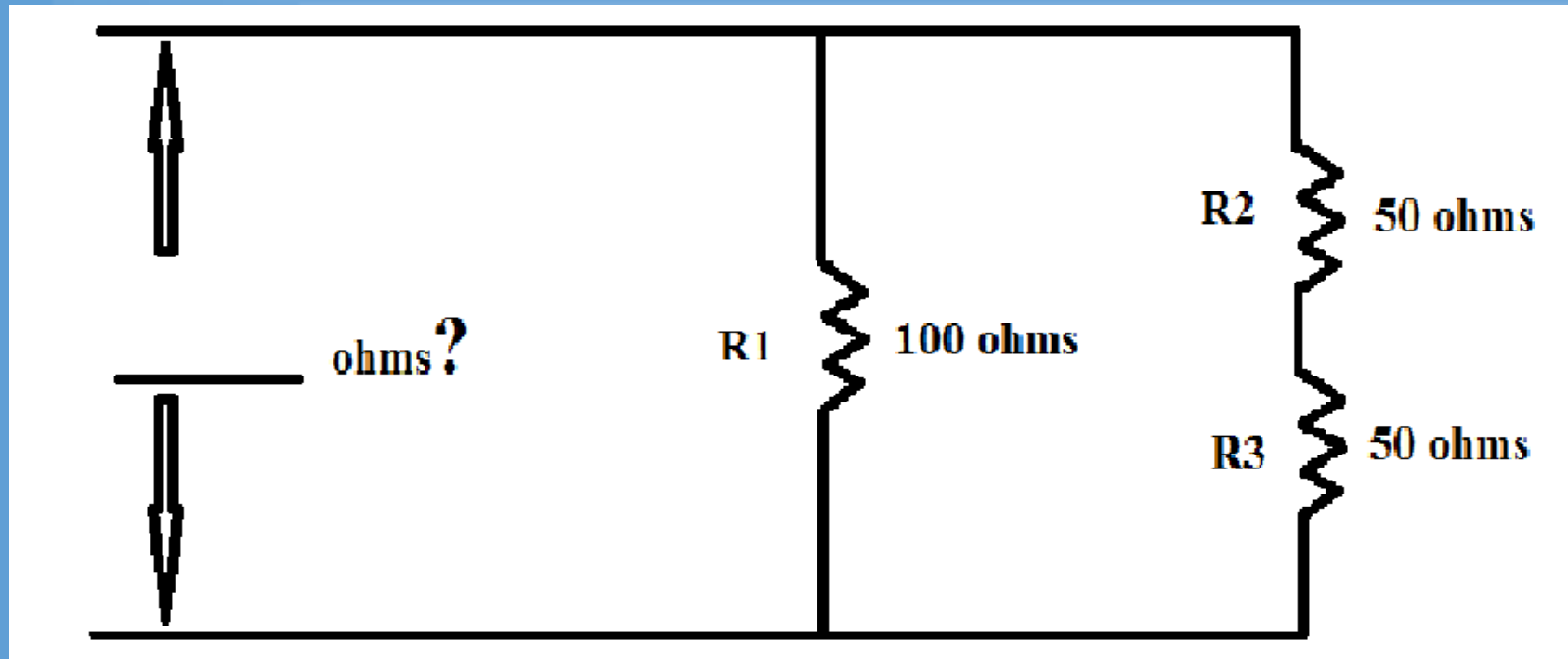
a. II & III

b. I & V

c. I & IV

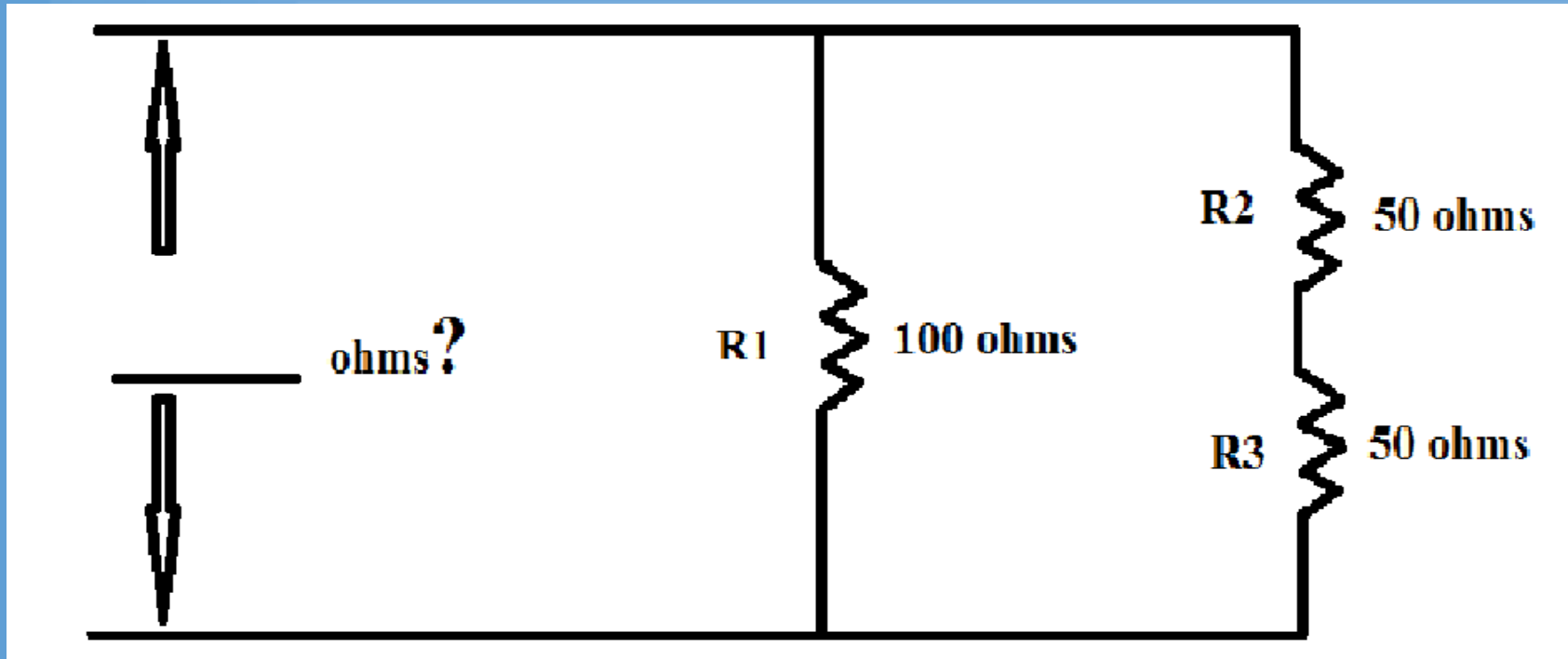
d. II & V

43. What would the ohmmeter read?



a. 100 ohms b. 200 ohms c. 125 ohms d. 50 ohms

43. What would the ohmmeter read?



- a. 100 ohms b. 200 ohms c. 125 ohms d. 50 ohms

44. Acid is not considered a good flux when soldering conductors because it _____.

- a. Smells bad
- b. Is corrosive
- c. Is non-conductive
- d. Costs too much

44. Acid is not considered a good flux when soldering conductors because it _____.

- a. Smells bad
- b. Is corrosive
- c. Is non-conductive
- d. Costs too much

45. If the spring tension on a cartridge fuse clip is weak, the result most likely would be _____.

- a. The fuse would blow immediately
- b. The fuse clips would become warm
- c. The voltage to the load would increase
- d. The supply voltage would increase

45. If the **spring tension on a cartridge fuse clip is weak**, the result most likely would be _____.

- a. The fuse would blow immediately
- b. The fuse clips would become warm**
- c. The voltage to the load would increase
- d. The supply voltage would increase

46. The branch circuit loads specified by the Code for lighting and receptacles are considered ____.

- a. Minimum loads
- b. Maximum loads
- c. Loads to be served
- d. Peak loads

46. The **branch circuit loads** specified by the Code for **lighting and receptacles** are considered ____.

- a. **Minimum loads**
- b. Maximum loads
- c. Loads to be served
- d. Peak loads

47. The conductor with the highest insulation temperature rating is _____.

- a. RH
- b. TW
- c. THWN
- d. THHN

47. The conductor with the **highest insulation temperature rating** is _____.

- a. RH
- b. TW
- c. THWN
- d. THHN**

48. After cutting a conduit, to remove the rough edges on both ends, the conduit ends should be ____.

- a. Reamed
- b. Filed
- c. Sanded
- d. Ground

48. After cutting a conduit, to **remove the rough edges on both ends**, the conduit ends should be ____.

- a. Reamed
- b. Filed
- c. Sanded
- d. Ground

49. To fasten a raceway to a solid concrete ceiling, you would use _____.

- a. Toggle bolts
- b. Expansion bolts
- c. Wooden plugs
- d. Rawl plugs

49. To fasten a raceway to a solid concrete ceiling, you would use _____.

- a. Toggle bolts
- b. Expansion bolts
- c. Wooden plugs
- d. Rawl plugs

50. A commutator of a generator should be cleaned with which of the following?

- a. Emery cloth
- b. Graphite
- c. A smooth file
- d. Fine sandpaper

50. A commutator of a generator should be cleaned with which of the following?

- a. Emery cloth
- b. Graphite
- c. A smooth file
- d. Fine sandpaper

Journeyman Chapter 9

Registered Master Electrician Reviewer

1. To control a ceiling light from five different locations it requires which of the following?

- a. Four 3-way switches and one 4-way switches
- b. Three 4-way switches and two 3-way switches
- c. Three 3-way switches and two 4-way switches
- d. Four 4-way switches and one 3-way switches

1. To control a ceiling light from five different locations it requires which of the following?

a. Four 3-way switches and one 4-way switches

b. Three 4-way switches and two 3-way switches

c. Three 3-way switches and two 4-way switches

d. Four 4-way switches and one 3-way switches

2. The advantage of AC over DC includes which of the following?

- a. Better speed control
- b. Lower resistance at higher current
- c. Ease of voltage variation
- d. Impedance is greater

2. The advantage of AC over DC includes which of the following?

- a. Better speed control
- b. Lower resistance at higher current
- c. Ease of voltage variation
- d. Impedance is greater

3. Which of the following is considered the best electrical conductor?

a. Iron wire

b. Copper wire

c. Aluminum wire

d. Tin wire

3. Which of the following is considered the best electrical conductor?

a. Iron wire

b. Copper wire

c. Aluminum wire

d. Tin wire

4. The liquid in a battery is called the _____.

- a. Askarel
- b. Festoon
- c. Hermetic
- d. Electrolyte

4. The liquid in a battery is called the _____.

a. Askarel

b. Festoon

c. Hermetic

d. Electrolyte

5. A color coded is used in multiple-conductor cables. For 3-conductor cable the colors would be _____.

- a. One black, one red and one white
- b. Two black and one red
- c. One white, one black and one blue
- d. Two red and one black

5. A color coded is used in multiple-conductor cables. For 3-conductor cable the colors would be _____.

- a. One black, one red and one white
- b. Two black and one red
- c. One white, one black and one blue
- d. Two red and one black

6. Explanatory material in the Code is characterized by _____.

- a. The word “shall”
- b. FPN
- c. The word “may”
- d. The word “could”

6. Explanatory material in the Code is characterized by _____.

- a. The word “shall”
- b. FPN
- c. The word “may”
- d. The word “could”

7. The identified grounded conductor of a lighting circuit is always connected to the screw of a light socket to _____.

- a. Reduce the possibility of accidental shock
- b. Ground the light fixture
- c. Improve the efficiency of the lamp
- d. Provide the easiest place to connect the wire

7. The identified grounded conductor of a lighting circuit is always connected to the screw of a light socket to _____.

- a. Reduce the possibility of accidental shock
- b. Ground the light fixture
- c. Improve the efficiency of the lamp
- d. Provide the easiest place to connect the wire

8. A ____ box may be waterproof.

- a. Watertight
- b. Rainproof
- c. Raintight
- d. All of these

8. A ____ box may be waterproof.

a. Watertight

b. Rainproof

c. Raintight

d. All of these

9. The Code requires that all AC phase conductors where used, the neutral and all equipment grounding conductors be grouped together when using metal enclosures or raceways. The principal reason for this is _____.

- a. Currents would circulate through individual raceways
- b. Less expensive to install a single raceway
- c. Less labor hours for pulling wires in a single raceway
- d. Conductors are easier to pull in a single raceway

9. The Code requires that all **AC phase conductors** where used, the neutral and all equipment grounding conductors be grouped together when using metal enclosures or raceways. The **principal reason** for this is _____.

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- b. Less expensive to install a single raceway
- c. Less labor hours for pulling wires in a single raceway
- d. Conductors are easier to pull in a single raceway

10. Installing more than three current carrying conductors in the same conduit requires _____.

- a. A larger conduit
- b. High heat rated conductors
- c. Derating of ampacity
- d. Continuous loading

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- a. A larger conduit
- b. High heat rated conductors
- c. Derating of ampacity
- d. Continuous loading

11. A _____ helps prevent arcing in movable contacts.

- a. Spring
- b. Condenser
- c. Resistor
- d. Hydrometer

11. A _____ helps prevent arcing in movable contacts.

a. Spring

b. Condenser

c. Resistor

d. Hydrometer

12. The _____ circuit is that portion of a wiring system prior to the final overcurrent protective device protecting the circuit.

- a. Service
- b. Feeder
- c. Power
- d. Branch

12. The _____ circuit is that portion of a wiring system prior to the final overcurrent protective device protecting the circuit.

a. Service

b. Feeder

c. Power

d. Branch

13. When tightening a screw on a terminal, the end of the conductor should wrap around the screw in the same direction that you are turning the screw so that _____.

- a. When you pull on the conductor it will tighten
- b. The screw will not become loose
- c. The conductor will act as a locking nut
- d. The conductor will not turn off

13. When tightening a screw on a terminal, the end of the conductor should **wrap around the screw in the same direction that you are turning the screw** so that _____.

- a. When you pull on the conductor it will tighten
- b. The screw will not become loose
- c. The conductor will act as a locking nut
- d. The conductor will not turn off**

14. Determining a positive wire on a single-phase circuit is _____.

- a. Possible with a wattmeter
- b. Possible with a voltmeter
- c. Possible with an ammeter
- d. An impossibility

14. Determining a positive wire on a single-phase circuit is _____.

- a. Possible with a wattmeter
- b. Possible with a voltmeter
- c. Possible with an ammeter
- d. An impossibility

15. A_____ is used for testing specific gravity.

a. Thermocouple

b. Megger

c. Hydrometer

d. Galvanometer

15. A_____ is used for testing specific gravity.

a. Thermocouple

b. Megger

c. Hydrometer

d. Galvanometer

16. An autotransformer differs from each other types of transformers in that _____.

- a. Its primary winding is always largest than its easier secondary winding
- b. It can be used only in automobiles
- c. Its primary and secondary winding are common to each other
- d. It must be wound with heavier wire

16. An autotransformer differs from each other types of transformers in that _____.

- a. Its primary winding is always largest than its easier secondary winding
- b. It can be used only in automobiles
- c. Its primary and secondary winding are common to each other
- d. It must be wound with heavier wire

17. Where the _____ is likely to be high, asbestos insulation on the conductor would be a good choice.

a. Temperature

b. Humidity

c. Voltage

d. Amperage

17. Where the _____ is likely to be high, asbestos insulation on the conductor would be a good choice.

a. Temperature

b. Humidity

c. Voltage

d. Amperage

18. If the end of a cartridge fuse becomes warmer than normal, you should _____.

- a. Tighten the fuse clips
- b. Lower the voltage on the circuit
- c. Notify the utility company
- d. Change the fuse

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- a. Tighten the fuse clips
- b. Lower the voltage on the circuit
- c. Notify the utility company
- d. Change the fuse

19. Which of the following is the poorest conductor of electricity?

- a. Mercury
- b. Aluminum
- c. Carbon
- d. Silver

19. Which of the following is the poorest conductor of electricity?

a. Mercury

b. Aluminum

c. Carbon

d. Silver

20. The primary winding of a loaded step-down transformer has _____ compared to the secondary winding.

- a. Lower voltage and current
- b. Higher voltage and current
- c. Higher voltage and lower the current
- d. Lower voltage and higher current

20. The primary winding of a loaded step-down transformer has _____ compared to the secondary winding.

- a. Lower voltage and current
- b. Higher voltage and current
- c. Higher voltage and lower the current
- d. Lower voltage and higher current

21. Copper is used for the tip of a soldering iron because _____.

- a. Copper will not melt
- b. Copper is very good conductor of heat
- c. Solder will not stick to other alloys
- d. Copper is less expensive

21. Copper is used for the tip of a soldering iron because _____.

a. Copper will not melt

b. Copper is very good conductor of heat

c. Solder will not stick to other alloys

d. Copper is less expensive

22. The sum of the voltage drop around a circuit is equal to the source voltage is _____.

- a. Kirchhoff's Law
- b. Ohm's Law
- c. Nevin's Law
- d. Faraday's Law

22. The sum of the voltage drop around a circuit is equal to the source voltage is _____.

a. Kirchhoff's Law

b. Ohm's Law

c. Nevin's Law

d. Faraday's Law

23. Piezoelectric is caused by crystals or binding
_____.

- a. Chemical
- b. Battery
- c. Pressure
- d. Heat

23. Piezoelectric is caused by crystals or binding
_____.

- a. Chemical
- b. Battery
- c. Pressure
- d. Heat

24. Heavy duty lampholders include _____.

- a. Admedium lampholders rated at 660 watts
- b. Lampholders used on circuits larger than 20 amperes
- c. Lampholders rated at not less than 750 watts
- d. All of the above

24. Heavy duty lampholders include _____.

- a. Admedium lampholders rated at 660 watts
- b. Lampholders used on circuits larger than 20 amperes
- c. Lampholders rated at not less than 750 watts
- d. All of the above

25. The reason for installing electrical conductors in a conduit is _____.

- a. To provide a ground
- b. To increase the ampacity of the conductors
- c. To protect the conductors from damage
- d. To avoid derating for continuous load of conductors

25. The reason for installing electrical conductors in a conduit is _____.

- a. To provide a ground
- b. To increase the ampacity of the conductors
- c. To protect the conductors from damage
- d. To avoid derating for continuous load of conductors

26. Discoloring of one end of a fuse normally indicates _____.

- a. Increased current
- b. Excessive voltage
- c. Low resistance
- d. Poor contact

26. **Discoloring** of one end of a fuse normally indicates _____.

- a. Increased current
- b. Excessive voltage
- c. Low resistance
- d. Poor contact**

27. Wing nuts are useful on equipment where _____.

- a. Cotter pins are used
- b. The nuts must be removed frequently
- c. A wrench cannot be used
- d. Screws cannot be used

27. Wing nuts are useful on equipment where _____.

- a. Cotter pins are used
- b. The nuts must be removed frequently
- c. A wrench cannot be used
- d. Screws cannot be used

28. When resistors are connected in series, the total resistance is _____.

- a. The sum of the individual resistance values
- b. The equivalent of the smallest resistance value
- c. The equivalent of the largest resistance value
- d. Less than the value of the smallest resistance

28. When resistors are connected in series, the total resistance is _____.

- a. The sum of the individual resistance values
- b. The equivalent of the smallest resistance value
- c. The equivalent of the largest resistance value
- d. Less than the value of the smallest resistance

29. If a value 120 volt incandescent light bulb is operating at a voltage of 125 volts, the result will be _____.

- a. It may be enough to blow a fuse
- b. The bulb won't be as bright
- c. Shorter life of the bulb
- d. The wattage will be less than rated

29. If a value 120 volt incandescent light bulb is operating at a voltage of 125 volts, the result will be _____.

- a. It may be enough to blow a fuse
- b. The bulb won't be as bright
- c. Shorter life of the bulb
- d. The wattage will be less than rated

30. Laminations are used in transformers to prevent _____.

- a. Copper loss
- b. Weight
- c. Eddy current loss
- d. Counter EMF

30. **Laminations** are used in transformers **to prevent** _____.

- a. Copper loss
- b. Weight
- c. Eddy current loss**
- d. Counter EMF

31. The Code requires which of the following colors for the equipment grounding conductor?

- a. White or gray
- b. Green or green with yellow stripes
- c. Yellow
- d. Blue with a yellow stripes

31. The Code requires which of the following colors for the equipment grounding conductor?

a. White or gray

b. Green or green with yellow stripes

c. Yellow

d. Blue with a yellow stripes

32. Sometimes mercury toggle switches are used in place of a regular toggle switch because they ____.

- a. Are easier to connect
- b. Do not wear out as quickly
- c. Are less expensive
- d. They glow in the dark

32. Sometimes mercury toggle switches are used in place of a regular toggle switch because they ____.

- a. Are easier to connect
- b. Do not wear out as quickly
- c. Are less expensive
- d. They glow in the dark

33. The assigned color for the high-leg conductor of a three-phase, 4-wire delta secondary is _____.

- a. Red
- b. Black
- c. Blue
- d. Orange

33. The assigned color for the high-leg conductor of a three-phase, 4-wire delta secondary is _____.

- a. Red
- b. Black
- c. Blue
- d. Orange

34. The Code rule for maximum 90 degree bends in a conduit between two boxes is four, the most likely reason for the total 360 degree limitation is _____.

- a. It is safe
- b. It makes pulling the conductors through the conduit too difficult
- c. You can damage the galvanized coating on the conduit
- d. Too many bends require extra wire to be pulled

34. The Code rule for maximum 90 degree bends in a conduit between two boxes is four, the most likely reason for the total 360 degree limitation is

_____.

- a. It is safe
- b. It makes pulling the conductors through the conduit too difficult
- c. You can damage the galvanized coating on the conduit
- d. Too many bends require extra wire to be pulled

35. The correct word to define wiring which is not concealed is _____.

- a. Open
- b. Uncovered
- c. Exposed
- d. Bare

35. The correct word to define wiring which is not concealed is _____.

- a. Open
- b. Uncovered
- c. Exposed
- d. Bare

36. A solenoid is a _____.

- a. Relay
- b. Permanent magnet
- c. Dynamo
- d. Electromagnet

36. A solenoid is a _____.

- a. Relay
- b. Permanent magnet
- c. Dynamo
- d. Electromagnet

37. An electrician should always consider the circuit to be “hot” unless he definitely knows otherwise. The main reason is to avoid

_____.

- a. Personal injury
- b. Having to find the panel
- c. Saving time
- d. Shutting off the wrong circuit

37. An electrician should always consider the circuit to be “hot” unless he definitely knows otherwise. The main reason is to avoid

_____.

- a. Personal injury
- b. Having to find the panel
- c. Saving time
- d. Shutting off the wrong circuit

38. The best thing to cut PVC conduit within a tight area is _____.

- a. A short hacksaw
- b. A nylon string
- c. A knife
- d. A pipe cutter

38. The best thing to cut PVC conduit within a tight area is _____.

a. A short hacksaw

b. A nylon string

c. A knife

d. A pipe cutter

39. If a live conductor is contacted accidentally, the severity of the electrical shock is determined primarily by _____.

- a. The size of the conductor
- b. Whether the current is DC or AC
- c. The current in the conductor
- d. The contact resistance

39. If a **live conductor is contacted accidentally**, the severity of the electrical shock is determined primarily by _____.

- a. The size of the conductor
- b. Whether the current is DC or AC
- c. The current in the conductor
- d. The contact resistance**

40. Ohm's Law is _____.

- a. An equation for determining power
- b. The relationship between voltage, current and power
- c. The relationship between voltage, current and resistance
- d. A measurement of wattage losses

40. Ohm's Law is _____.

- a. An equation for determining power
- b. The relationship between voltage, current and power
- c. The relationship between voltage, current and resistance
- d. A measurement of wattage losses

41. What is the normal taper on a standard conduit thread-cutting die?

- a. $\frac{1}{2}$ " per foot
- b. $\frac{1}{4}$ " per foot
- c. $\frac{3}{8}$ " per foot
- d. $\frac{3}{4}$ " per foot

41. What is the normal taper on a standard conduit thread-cutting die?

a. $\frac{1}{2}$ " per foot

b. $\frac{1}{4}$ " per foot

c. $\frac{3}{8}$ " per foot

d. $\frac{3}{4}$ " per foot

42. In an AC circuit the ratio of the power in watts to the total volt-amps is called the _____.

- a. Demand factor
- b. Power factor
- c. Turns-ratio
- d. Diversity factor

42. In an AC circuit the ratio of the power in watts to the total volt-amps is called the _____.

- a. Demand factor
- b. Power factor
- c. Turns-ratio
- d. Diversity factor

43. The total load on any overcurrent device located in a panelboard shall not exceed _____ of its rating where the normal operation the load will continue for three hours or more.

- a. 80%
- b. 125%
- c. 70%
- d. 50%

43. The total load on any overcurrent device located in a panelboard shall not exceed _____ of its rating where the normal operation the load will continue for three hours or more.

- a. 80%
- b. 125%
- c. 70%
- d. 50%

44. Four heaters, each having a resistance of 30 ohms, are connected in series across a 600-volt train circuit. The current is _____ amperes.

- a. 5
- b. 17
- c. 20
- d. 80

44. Four heaters, each having a resistance of 30 ohms, are connected in series across a 600-volt train circuit. The current is _____ amperes.

a. 5 ($I/R = 600/120$)

b. 17

c. 20

d. 80

45. A ladder which is painted is a safety hazard mainly because the paint _____.

- a. May conceal weak spots in the rails or rungs
- b. Is slippery after drying
- c. Causes the wood to crack more quickly
- d. Peels and the sharp edges of the paint may cut the hands

45. A ladder which is painted is a safety hazard mainly because the paint _____.

- a. May conceal weak spots in the rails or rungs
- b. Is slippery after drying
- c. Causes the wood to crack more quickly
- d. Peels and the sharp edges of the paint may cut the hands

46. The chemical used as the agent in fire extinguishers to fight electrical fires is _____.

a. CO₂

b. KOH

c. H₂O

d. LO6

46. The chemical used as the agent in fire extinguishers to fight electrical fires is _____.

a. CO₂

b. KOH

c. H₂O

d. LO6

47. A location classified as _____ may be temporarily subject to dampness and wetness.

- a. Dry
- b. Damp
- c. Moist
- d. Wet

47. A location classified as _____ may be temporarily subject to dampness and wetness.

- a. Dry
- b. Damp
- c. Moist
- d. Wet

48. The average dry cell battery gives an approximate voltage of _____.

a. 1.5

b. 1.2

c. 1.7

d. 2.0

48. The average dry cell battery gives an approximate voltage of _____.

a. 1.5

b. 1.2

c. 1.7

d. 2.0

49. The _____ circuit is that portion of a wiring system beyond the final overcurrent protection.

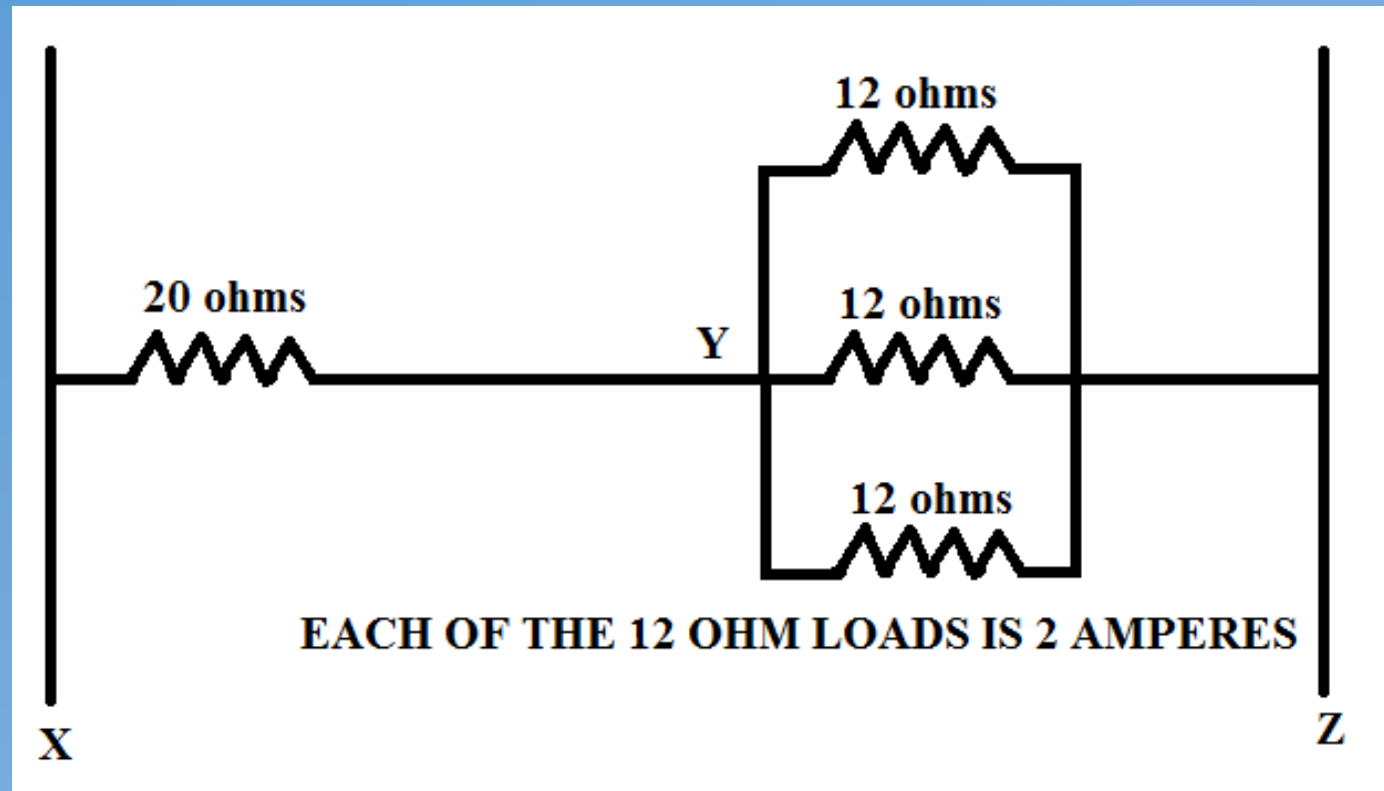
- a. Lighting
- b. Feeder
- c. Signal
- d. Branch

49. The _____ circuit is that portion of a wiring system beyond the final overcurrent protection.

- a. Lighting
- b. Feeder
- c. Signal
- d. Branch

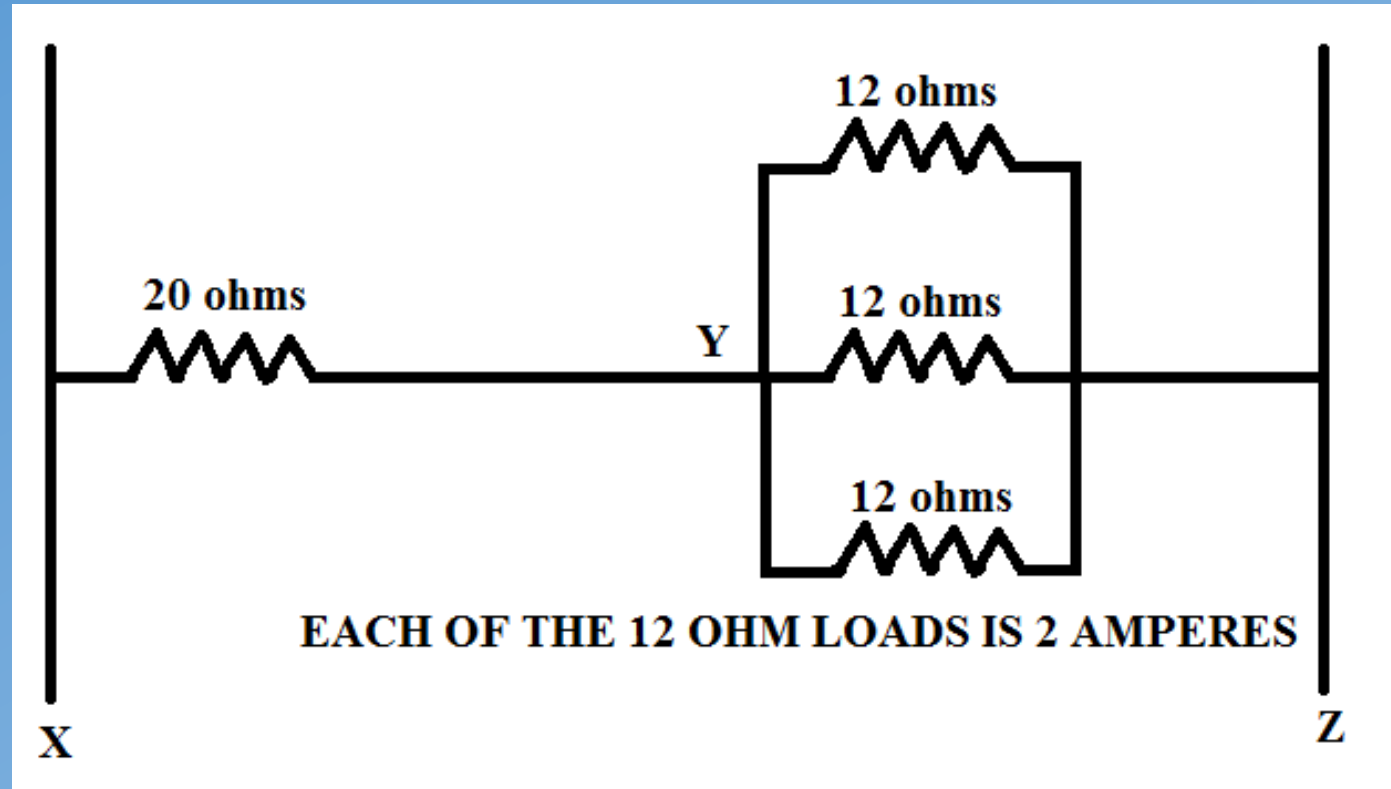
50. What is the voltage between points Y and Z?

- a. 72 volt
- b. 120 volts
- c. 24 volts
- d. 144 volts



50. What is the voltage between points Y and Z?

- a. 72 volt
- b. 120 volts
- c. 24 volts
- d. 144 volts



Journeyman

Chapter 10

Registered Master Electrician

1. The neutral conductor shall not be
_____.

- a. Stranded
- b. Solid
- c. Insulated
- d. Fused

1. The neutral conductor shall not be _____.

- a. Stranded
- b. Solid
- c. Insulated
- d. Fused

2. The voltage drop in a line can be decreased by_____.

I. Increasing the wire size

II. Increasing the current

III. Decreasing the load

a. I only

b. I and II only

c. I, II and III

d. I and III only

2. The voltage drop in a line can be decreased by_____.

I. Increasing the wire size

II. Increasing the current

III. Decreasing the load

a. I only

b. I and II only

c. I, II and III

d. I and III only

3. In a residence, no point along the floor line in any wall space may be more than ____ feet from an outlet.

a. 6

b. $6 \frac{1}{2}$

c. 12

d. 10

3. In a residence, no point along the floor line in any wall space may be more than ____ feet from an outlet.

a. 6

b. 6 ½

c. 12

d. 10

4. Insulating safety grips on tools

_____.

- a. Are enough
- b. Are not meant for that purpose
- c. Should be used with other insulating equipment
- d. Are not enough

4. Insulating safety grips on tools

_____.

- a. Are enough
- b. Are not meant for that purpose
- c. Should be used with other insulating equipment
- d. Are not enough

5. The rating of any one portable appliance shall not exceed ____ percent of the branch circuit rating.

- a. 40
- b. 50
- c. 70
- d. 80

5. The rating of any one portable appliance shall not exceed ____ percent of the branch circuit rating.

a. 40

b. 50

c. 70

d. 80

6. A generic term for a group of non-flammable synthetic chlorinated hydrocarbons used as electrical insulating media.

a. Askarel

b. Acid

c. Chloragorm

d. Solder

6. A generic term for a group of non-flammable synthetic chlorinated hydrocarbons used as electrical insulating media.

a. Askarel

b. Acid

c. Chloragorm

d. Solder

7. The part of an electrical system that performs a mechanical function rather than an electrical function is called a (an) _____.

- a. Receptacle
- b. Device
- c. Fitting
- d. Outlet

7. The part of an electrical system that performs a mechanical function rather than an electrical function is called a (an) _____.

- a. Receptacle
- b. Device
- c. Fitting
- d. Outlet

8. An electrical condenser is best defined as _____.

- a. A coil of wire
- b. A wrapping of layers of metal foil
- c. A coil of wire with layers of metal foil
- d. A wrapping of many layers of metal foil set apart by waxed paper

8. An **electrical condenser** is best defined as _____.

- a. A coil of wire
- b. A wrapping of layers of metal foil
- c. A coil of wire with layers of metal foil
- d. A wrapping of many layers of metal foil set apart by waxed paper**

9. Solid wire is preferred instead of stranded wire in panel wiring because _____.

- a. Costs less than stranded
- b. Solid will carry more current
- c. Can be “shaped” better
- d. No derating required for solid

9. Solid wire is preferred instead of stranded wire in panel wiring because _____.

- a. Costs less than stranded
- b. Solid will carry more current
- c. Can be “shaped” better
- d. No derating required for solid

10. Which one of the following is not an insulator?

a. Bakelite

b. Oil

c. Air

d. Salt water

10. Which one of the following is not an insulator?

a. Bakelite

b. Oil

c. Air

d. Salt water

11. The definition of accessible (wire):

- a. Admitting close approach
- b. Not guarded by locked doors, elevation, etc
- c. Not permanently closed in by the building or structure
- d. All of the above

11. The definition of accessible (wire):

- a. Admitting close approach
- b. Not guarded by locked doors, elevation, etc
- c. Not permanently closed in by the building or structure
- d. All of the above

12. The Code is designed for safety regardless of _____.

I. Cost

II. Time

III. Maintenance

IV. Efficiency

V. Future structure

a. I & II

b. III & IV

c. I through IV

d. I through V

12. The Code is designed for safety regardless of _____.

I. Cost

II. Time

III. Maintenance

IV. Efficiency

V. Future structure

a. I & II

b. III & IV

c. I through IV

d. I through V

13. When voltage and current appear at their zero and peak values at the same time, they are in ____.

- a. Motion
- b. Group
- c. Phase
- d. Balanced

13. When voltage and current appear at their zero and peak values at the same time, they are in ____.

- a. Motion
- b. Group
- c. Phase
- d. Balanced

14. What is meant by “traveller wires”?

- a. Wiring to a split receptacle
- b. Two-wires between 3-way switches
- c. Wiring to a door bell
- d. Out of state electrician

14. What is meant by “traveller wires”?

a. Wiring to a split receptacle

b. Two-wires between 3-way switches

c. Wiring to a door bell

d. Out of state electrician

15. On a #4 drill bit, the #4 is determined by _____.

- a. Hardness
- b. Size
- c. Strength
- d. Length

15. On a #4 drill bit, the #4 is determined by _____.

a. Hardness

b. Size

c. Strength

d. Length

16. Wiring systems in wet locations should be _____.

- a. Placed so a permanent air space separates them from the supporting surface.
- b. Separated by insulated bushings
- c. Separated by non-combustible tubing
- d. Protected by a guard strip

16. Wiring systems in wet locations should be _____.

- a. Placed so a permanent air space separates them from the supporting surface.
- b. Separated by insulated bushings
- c. Separated by non-combustible tubing
- d. Protected by a guard strip

17. The best type of fire extinguisher for an electrical fire is a _____.

- a. Dry chemical extinguisher
- b. Soda-acid extinguisher
- c. Foam extinguisher
- d. Carbon monoxide extinguisher

17. The **best type** of fire extinguisher for an **electrical fire** is a _____.

- a. **Dry chemical extinguisher**
- b. Soda-acid extinguisher
- c. Foam extinguisher
- d. Carbon monoxide extinguisher

18. “Thermally protected” appearing on the nameplate of a motor indicates that the motor is provided with a _____.

- a. Fuse
- b. Switch
- c. Breaker
- d. Heat sensing element

18. “Thermally protected” appearing on the nameplate of a motor indicates that the motor is provided with a _____.

- a. Fuse
- b. Switch
- c. Breaker
- d. Heat sensing element

19. A capacitor is a device that
_____ energy.

- a. Produces
- b. Stores
- c. Opposes
- d. Increases

19. A **capacitor** is a device that
_____ energy.

a. Produces

b. Stores

c. Opposes

d. Increases

20. When working near acid storage batteries, extreme care should be taken to guard against sparks essentially to avoid _____.

- a. Overheating the electrolyte
- b. An electric shock
- c. A short circuit
- d. An explosion

20. When working near **acid storage batteries**, extreme care should be taken to guard against sparks essentially to avoid _____.

- a. Overheating the electrolyte
- b. An electric shock
- c. A short circuit
- d. An explosion**

21. Which of the following statements is incorrect?

- a. Current flowing through a conductor causes heat
- b. The conduit of an electrical system should be grounded
- c. Volt meters are connected in parallel in a circuit
- d. Rectifiers change DC to AC

21. Which of the following statements is incorrect?

- a. Current flowing through a conductor causes heat
- b. The conduit of an electrical system should be grounded
- c. Volt meters are connected in parallel in a circuit
- d. Rectifiers change DC to AC

22. When installing raceway systems, it is essential that they be _____.

a. Rigidly supported as required

b. Exposed

c. Concealed in walls

d. Readily accessible

22. When installing raceway systems, it is essential that they be _____.

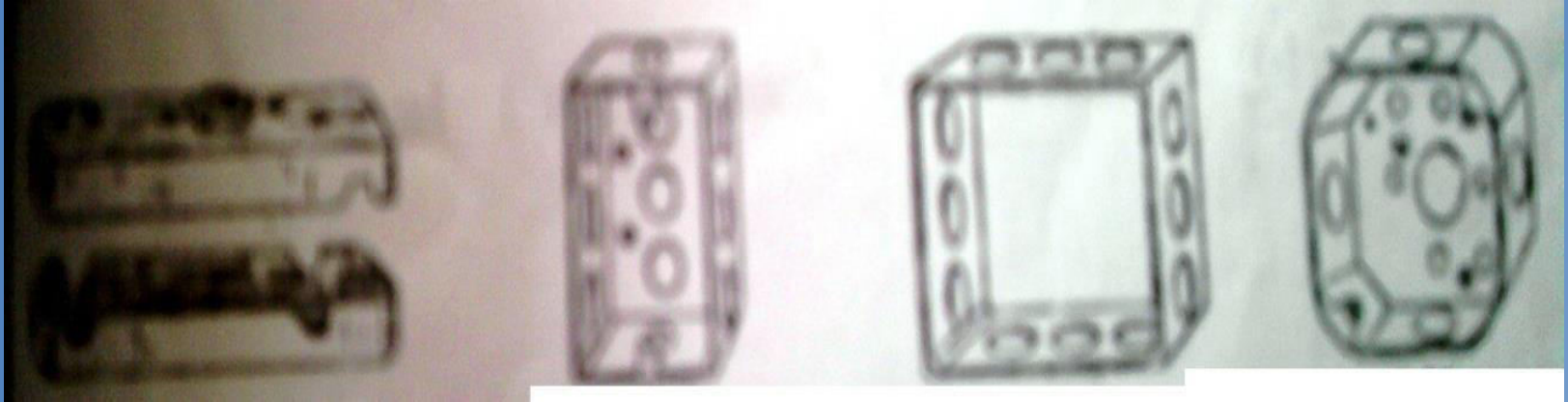
a. Rigidly supported as required

b. Exposed

c. Concealed in walls

d. Readily accessible

23. Which of the following is a “handy” box?



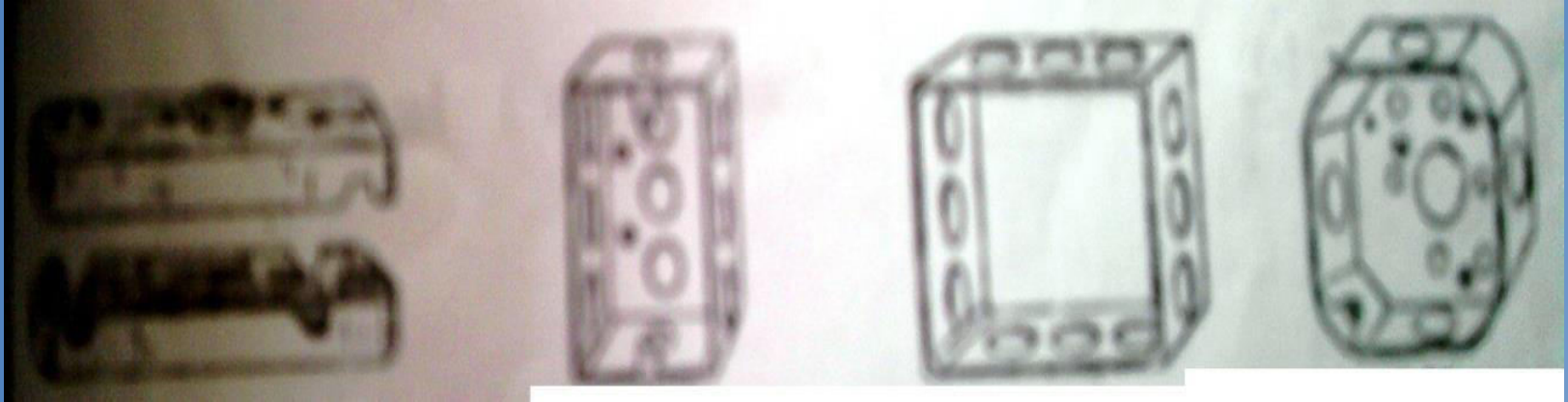
a.

b.

c.

d.

23. Which of the following is a “handy” box?



a.

b.

c.

d.

24. The reason for grounding the frame of a portable electric hand tool is to _____.

- a. Prevent the frame of the tool from becoming alive to ground
- b. Prevent overheating of the tool
- c. Prevent shorts
- d. Reduce the voltage drop

24. The reason for grounding the frame of a portable electric hand tool is to _____.

- a. Prevent the frame of the tool from becoming alive to ground
- b. Prevent overheating of the tool
- c. Prevent shorts
- d. Reduce the voltage drop

25. Two metals of different materials shall not be joined together in order to avoid the _____ action.

- a. Rusting
- b. Galvanic
- c. Reverse
- d. Corrosion

25. Two metals of different materials shall not be joined together in order to avoid the _____ action.

a. Rusting

b. Galvanic

c. Reverse

d. Corrosion

26. A ____ device which serves to govern in some predetermined manner the electric power delivered to the apparatus to which it's connected.

- a. Switch
- b. Feeder
- c. Service
- d. Controller

26. A ____ device which serves to govern in some predetermined manner the electric power delivered to the apparatus to which it's connected.

- a. Switch
- b. Feeder
- c. Service
- d. Controller

27. The ungrounded conductor can be identified by the color _____.

- a. White or gray
- b. Green or bare
- c. Pink flamingo
- d. None of these

27. The **ungrounded conductor** can be identified by the color _____.

- a. White or gray
- b. Green or bare
- c. Pink flamingo**
- d. None of these

28. What is the maximum number of overcurrent devices allowed in a lighting and appliance panelboard?

- a. 24
- b. 30
- c. 36
- d. 42

28. What is the maximum number of overcurrent devices allowed in a lighting and appliance panelboard?

a. 24

b. 30

c. 36

d. 42

29. A _____ is a certain type cartridge fuse that can be readily replaced.

- a. Time-lag fuse
- b. Permanent fuse
- c. One-time fuse
- d. Renewable fuse

29. A _____ is a certain type **cartridge fuse that can be readily replaced.**

- a. Time-lag fuse
- b. Permanent fuse
- c. One-time fuse
- d. Renewable fuse**

30. The purpose of a Western Union splice is _____.

- a. For the use of the utility companies only
- b. For the purpose of strengthening a splice
- c. For use on the west coast only
- d. None of these

30. The purpose of a **Western Union splice** is _____.

- a. For the use of the utility companies only
- b. For the purpose of strengthening a splice**
- c. For use on the west coast only
- d. None of these

31. Electricity may be produced by means of _____ forces.

- a. Mechanical
- b. Thermal
- c. Chemical
- d. All of these

31. Electricity may be produced by means of _____ forces.

a. Mechanical

b. Thermal

c. Chemical

d. All of these

32. Copper-clad aluminum conductors have an ampacity _____.

- a. Lower than copper but higher than aluminum
- b. Equal to copper
- c. Rating of their own
- d. Equal to aluminum

32. Copper-clad aluminum conductors have an ampacity _____.

- a. Lower than copper but higher than aluminum
- b. Equal to copper
- c. Rating of their own
- d. Equal to aluminum

33. The heating element in a toaster has a _____.

- a. Low resistance
- b. High resistance
- c. High conductivity
- d. None of these

33. The heating element in a toaster has a _____.

- a. Low resistance
- b. High resistance
- c. High conductivity
- d. None of these

34. The total resistance of four 10 ohm resistors in parallel is _____.

- a. 10 ohms
- b. 2.5 ohms
- c. 5 ohms
- d. 4 ohms

34. The total resistance of four 10 ohm resistors in parallel is _____.

a. 10 ohms

b. 2.5 ohms

c. 5 ohms

d. 4 ohms

35. To mark a point on the floor directly beneath a point on the ceiling, it is best to use a _____.

- a. Transit rod
- b. Plumb bob
- c. Square
- d. 12' tape

35. To mark a point on the floor directly beneath a point on the ceiling, it is best to use a _____.

a. Transit rod

b. Plumb bob

c. Square

d. 12' tape

36. Openings around electrical penetrations through fire-resistant rated walls, partitions, floors or ceilings shall be _____.

- a. Bushed
- b. Sleeved
- c. Firestopped
- d. Isolated

36. Openings around electrical penetrations through fire-resistant rated walls, partitions, floors or ceilings shall be _____.

- a. Bushed
- b. Sleeved
- c. Firestopped
- d. Isolated

37. A generator exciter uses _____ current.

a. Alternating

b. Direct

c. Neither alternating nor direct

d. either alternating or direct

37. A generator exciter uses _____ current.

a. Alternating

b. Direct

c. Neither alternating nor direct

d. either alternating or direct

38. When installing an instrument meter on a panel, to obtain accurate mounting _____.

- a. Use the meter and drill through the holes
- b. Drill oversize holes
- c. Use a template
- d. Drill from back of panel

38. When installing an instrument meter on a panel, to **obtain accurate mounting** _____.

- a. Use the meter and drill through the holes
- b. Drill oversize holes
- c. Use a template**
- d. Drill from back of panel

39. The advantage of cutting a metal rigid conduit with a hacksaw rather than pipe cutter is _____.

- a. You do not need a vice
- b. Less energy required in cutting
- c. Less reaming is required
- d. Threading oil is not required

39. The advantage of cutting a metal rigid conduit with a hacksaw rather than pipe cutter is _____.

- a. You do not need a vice
- b. Less energy required in cutting
- c. Less reaming is required
- d. Threading oil is not required

40. You would use an approved _____ to protect conductors from abrasion where they enter a box.

- a. Locknut
- b. Bushing
- c. All thread
- d. Hickey

40. You would use an approved _____
to protect conductors from abrasion where
they enter a box.

a. Locknut

b. Bushing

c. All thread

d. Hickey

41. To reverse the rotation of a three-phase motor you would _____.

- a. Reverse all the leads
- b. Reverse two of the four leads
- c. Turn it around
- d. Reverse any two of the three leads

41. To reverse the rotation of a three-phase motor you would _____.

- a. Reverse all the leads
- b. Reverse two of the four leads
- c. Turn it around
- d. Reverse any two of the three leads

42. The output rating of a one horsepower motor is _____.

- a. 1840 watts
- b. 746 watts
- c. 1500 watts
- d. 1000 watts

42. The output rating of a **one horsepower** motor is _____.

a. 1840 watts

b. 746 watts

c. 1500 watts

d. 1000 watts

43. In other than residential calculations, an ordinary outlet shall be calculated at _____.

- a. 200 va
- b. 600 watts
- c. 300 watts
- d. 180 va

43. In other than residential calculations,
an **ordinary outlet** shall be calculated at
_____.

- a. 200 va
- b. 600 watts
- c. 300 watts
- d. 180 va**

44. Impedance is present in the following type of circuit:

- a. Resistance
- b. DC only
- c. AC only
- d. Both AC and DC

44. **Impedance** is present in the following type of circuit:

- a. Resistance
- b. DC only
- c. AC only**
- d. Both AC and DC

45. On an insulated conductor the type letter “TW” indicates _____.

- a. Tie wire
- b. Thermoplastic-moisture resistance
- c. Thermoplastic-waterproof
- d. Thermal-with nylon

45. On an insulated conductor the type letter “TW” indicates _____.

a. Tie wire

b. Thermoplastic-moisture resistance

c. Thermoplastic-waterproof

d. Thermal-with nylon

46. A load is considered as continuous if it is expected to continue for _____.

- a. $\frac{1}{2}$ hour
- b. 1 hour
- c. 2 hours
- d. 3 hours

46. A load is considered as continuous if it is expected to continue for _____.

- a. $\frac{1}{2}$ hour
- b. 1 hour
- c. 2 hours
- d. 3 hours

47. The standard classification of branch circuits applied only to those circuits with _____ outlets.

- a. Two or more
- b. More than two
- c. More than three
- d. Three or more

47. The **standard classification of branch circuits** applied only to those circuits with _____ outlets.

- a. **Two or more**
- b. More than two
- c. More than three
- d. Three or more

48. If the primary of the transformer is 480 and secondary is 240/120v, the wire on the _____ is larger.

- a. Tertiary
- b. Secondary
- c. Primary
- d. windings

48. If the primary of the transformer is 480 and secondary is 240/120v, the wire on the _____ is larger.

a. Tertiary

b. Secondary

c. Primary

d. windings

49. The important function of a type S fuse is _____.

- a. Non-interchangeable
- b. Slow burner
- c. Motor protection
- d. Fast acting

49. The important function of a type S fuse is _____.

- a. Non-interchangeable
- b. Slow burner
- c. Motor protection
- d. Fast acting

50. If the voltage is doubled the ampacity of a conductor _____.

- a. Increases
- b. Decrease
- c. Doubles
- d. Remains the same

50. If the **voltage** is doubled the ampacity of a conductor _____.

- a. Increases
- b. Decrease
- c. Doubles
- d. Remains the same**

Journeyman

Chapter 11

Registered master Electrician Reviewer

1. A _____ is a protective device for limiting surge voltages by discharging or bypassing surge current, and it also prevents continued flow of follow current while remaining capable of repeating these functions.

- a. Surge arrester
- b. Automatic fuse
- c. Fuse
- d. Circuit breaker

1. A _____ is a **protective device for limiting surge voltages** by discharging or bypassing surge current, and it also prevents continued flow of follow current while remaining capable of repeating these functions.

- a. **Surge arrester**
- b. Automatic fuse
- c. Fuse
- d. Circuit breaker

2. A _____ conductor is one having one or more layers of non-conducting materials that are not recognized as insulation.

- a. Bare
- b. Covered
- c. Insulated
- d. Wrapped

2. A _____ conductor is one having one or more layers of non-conducting materials that are not recognized as insulation.

a. Bare

b. Covered

c. Insulated

d. Wrapped

3. In a DC circuit, the ratio of watts to volt-amperes is _____.

- a. Unity
- b. Greater than one
- c. Less than one
- d. Cannot tell what it might be

3. In a DC circuit, the ratio of watts to volt-
amperes is _____.

a. Unity

b. Greater than one

c. Less than one

d. Cannot tell what it might be

4. A current limiting overcurrent protective device is a device which will ____ the current flowing in the faulted circuit.

- a. Reduce
- b. Increase
- c. Maintain
- d. None of these

4. A **current limiting overcurrent protective device** is a device which will ____ the current flowing in the faulted circuit.

a. **Reduce**

b. Increase

c. Maintain

d. None of these

5. The horsepower rating of a motor
_____.

- a. Is a measure of motor efficiency
- b. Is the input to the motor
- c. Cannot be changed to watts
- d. Is the output of the motor

5. The **horsepower rating** of a motor
_____.

- a. Is a measure of motor efficiency
- b. Is the input to the motor
- c. Cannot be changed to watts
- d. Is the output of the motor**

6. A common fuse and circuit breaker works on the principal that _____.

- a. Voltage develops heat
- b. Voltage breaks down insulation
- c. Current develops heat
- d. Current expands a wire

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- a. Voltage develops heat
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7. The voltage will lead the current when the _____ in the circuit.

- a. Inductive reactance exceeds the capacitive reactance
- b. Reactance exceeds the resistance in the circuit
- c. Resistance exceeds the reactance
- d. Capacitive reactance exceeds the inductive reactance

7. The voltage will lead the current when the _____ in the circuit.

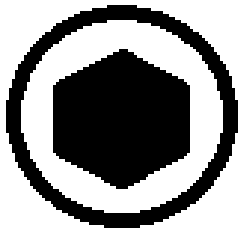
a. Inductive reactance exceeds the capacitive reactance

b. Reactance exceeds the resistance in the circuit

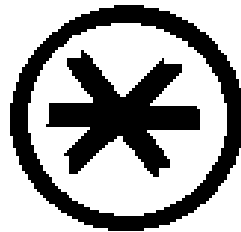
c. Resistance exceeds the reactance

d. Capacitive reactance exceeds the inductive reactance

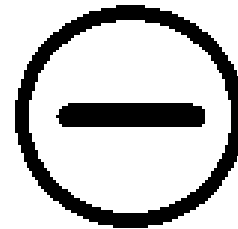
8. Which of the following is an Allen head bolt?



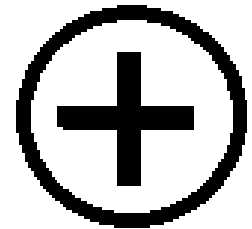
a.



b.

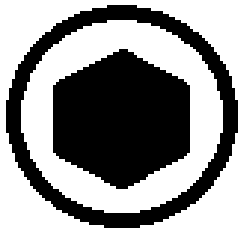


c.

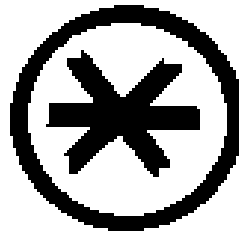


d.

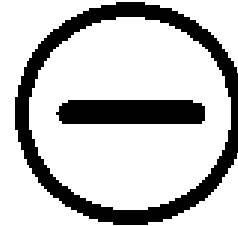
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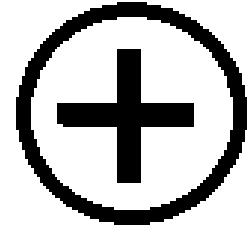
a.



b.



c.



d.

9. _____ is a self-acting, operating by its own mechanism when actuated by some impersonal influence, as for example, a change in current strength, pressure, temperature, or mechanical configuration.

- a. Remote-control
- b. Automatic
- c. Semi-automatic
- d. Controller

9. _____ is a **self-acting**, operating by its own mechanism when actuated by some impersonal influence, as for example, a change in current strength, pressure, temperature, or mechanical configuration.

a. Remote-control

b. Automatic

c. Semi-automatic

d. Controller

10. A 1000 watt, 120 volt lamp uses electrical energy at the same rate as a 14.4 ohm resistor on _____.

- a. 120 volts
- b. 115 volts
- c. 208 volts
- d. 240 volts

10. A 1000 watt, 120 volt lamp uses electrical energy at the same rate as a 14.4 ohm resistor on _____.

a. 120 volts ($W=E^2/R$)

b. 115 volts

c. 208 volts

d. 240 volts

11. When using compressed air to clean electrical equipment the air pressure should not exceed 50 pounds. The main reason is higher pressures _____.

- a. May loosen insulating tape
- b. May blow dust to surrounding equipment
- c. Introduce a personal hazard to the user
- d. May rupture the air hose

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- a. May loosen insulating tape
- b. May blow dust to surrounding equipment
- c. Introduce a personal hazard to the user
- d. May rupture the air hose

12. Which of the following is not used to fasten equipment to concrete?

- a. Expansion bolt
- b. Lead sheath
- c. Rawl plug
- d. Steel bushing

12. Which of the following is **not used to fasten equipment to concrete?**

- a. Expansion bolt
- b. Lead sheath
- c. Rawl plug
- d. Steel bushing**

13. A single-pole switch to operate a light will have the wiring connected in the _____ conductor.

- a. Grounded
- b. Identified
- c. Ungrounded
- d. Neutral

13. A single-pole switch to operate a light will have the wiring connected in the _____ conductor.

a. Grounded

b. Identified

c. Ungrounded

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14. The decimal equivalent of $9/16$ is

_____.

a. 0.5625

b. 0.675

c. 0.875

d. None of these

14. The decimal equivalent of $9/16$ is

_____.

a. 0.5625

b. 0.675

c. 0.875

d. None of these

15. The information most useful in preventing the recurrence of a similar type accident when making out an accident report would be _____.

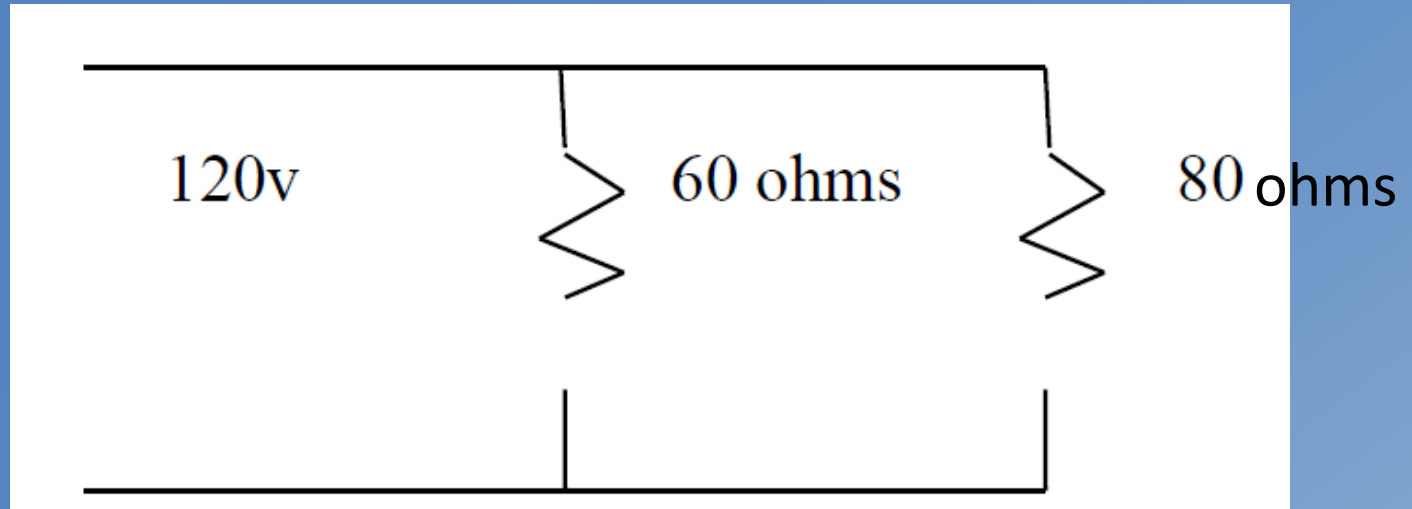
- a. The nature of the injury
- b. The cause of the accident
- c. The weather conditions at the time
- d. The age of the person involved

15. The information **most useful in preventing the recurrence** of a similar type accident when making out an accident report would be _____.

- a. The nature of the injury
- b. The cause of the accident**
- c. The weather conditions at the time
- d. The age of the person involved

16. What is the total wattage of this circuit?

- a. 3.5
- b. 420
- c. 16,800
- d. 140



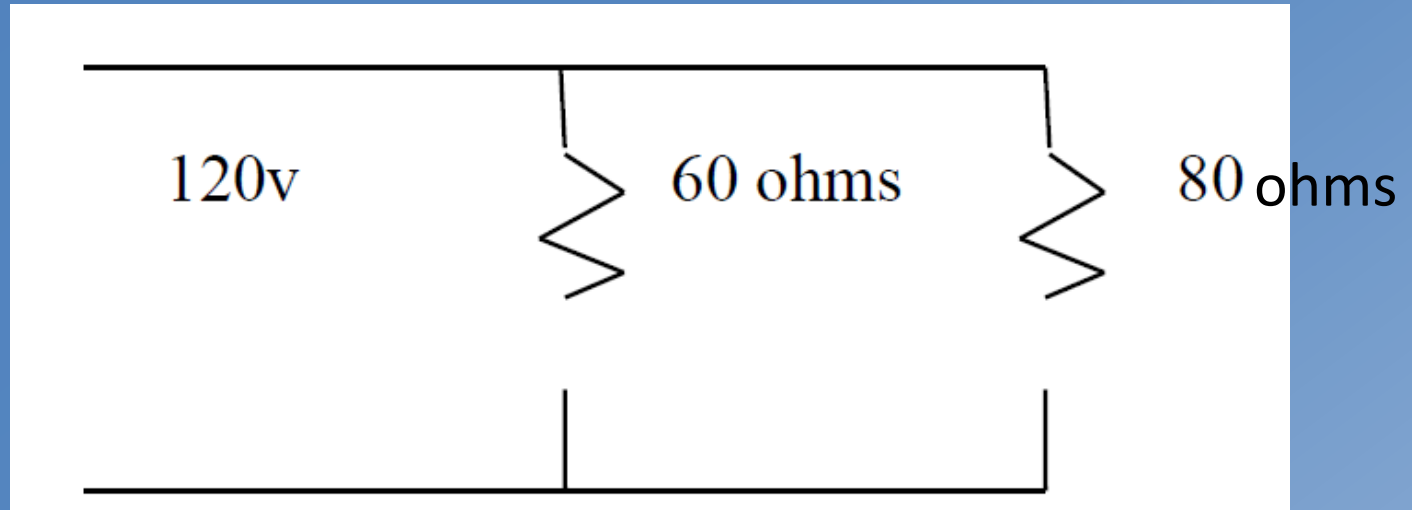
16. What is the total wattage of this circuit?

a. 3.5

b. 420

c. 16,800

d. 140



17. Artificial respiration after a severe electrical shock is necessary when the shock results in _____.

- a. Broken limbs
- b. Bleeding
- c. Stoppage of breathing
- d. Unconsciousness

17. **Artificial respiration** after a severe electrical shock is necessary when the shock results in _____.

- a. Broken limbs
- b. Bleeding
- c. Stoppage of breathing**
- d. Unconsciousness

18. If the circuit voltage is increased, all else remains the same, only the _____ will change.

- a. Resistance
- b. Current
- c. Ampacity
- d. Conductivity

18. If the **circuit voltage is increased**, all else remains the same, only the _____ will change.

a. Resistance

b. Current

c. Ampacity

d. Conductivity

19. The two methods of making joints or connections for insulated cables are soldered connections and by means of solderless connection devices (wirenuts). The advantage (s) of a solderless connection is/are ____.

- I. Will not fail under short circuit due to melting of solder
- II. Mechanical strength as great as solder
- III. Reduces the time required to make a splice

a. I only

b. I & II only

c. II & III only

d. I, II & III

19. The two methods of making joints or connections for insulated cables are soldered connections and by means of solderless connection devices (wirenuts). The **advantage(s) of a solderless connection** is/are ____.

- I. Will not fail under short circuit due to melting of solder
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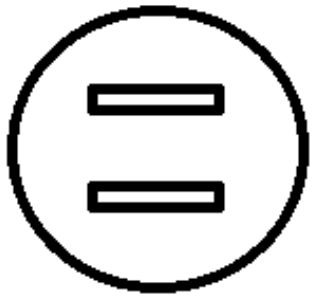
a. I only

b. I & II only

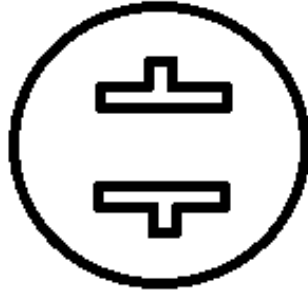
c. II & III only

d. I, II & III

20. Which of the following plugs is a polarized plug?



a.



b.

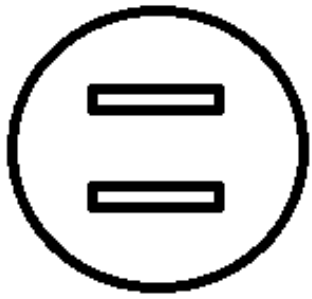


c.

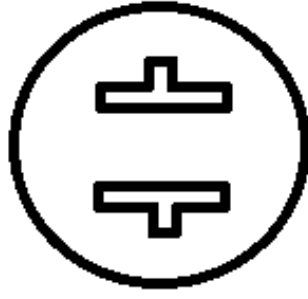


d.

20. Which of the following plugs is a polarized plug?



a.



b.



c.



d.

21. When accidentally splashing a chemical into the eyes the best immediate first aid solution is to ____.

- a. Look directly into the sun
- b. Rub the eyes with dry cloth
- c. Flush eyes with clean water
- d. Close eyes quickly

21. When accidentally splashing a chemical into the eyes the best immediate first aid solution is to ____.

- a. Look directly into the sun
- b. Rub the eyes with dry cloth
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22. It is generally not good practice to supply lamps and motors from the same circuit because _____.

- I. It is more economical to operate motors on a higher voltage than that of a lighting circuit
- II. Overloads and short circuits are more common on motor circuits and would put the lights out
- III. When a motor is started it would cause the lights to dim or blink

a. I only

b. II only

c. III only

d. I, II & III

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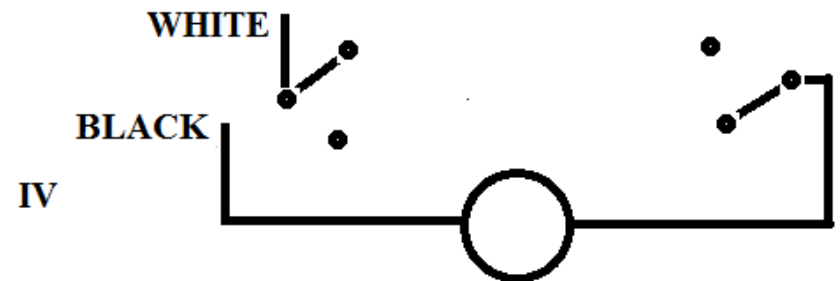
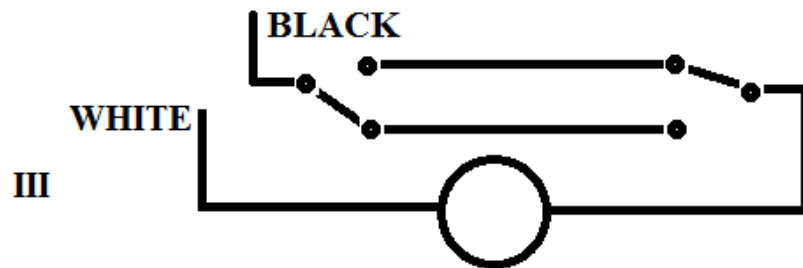
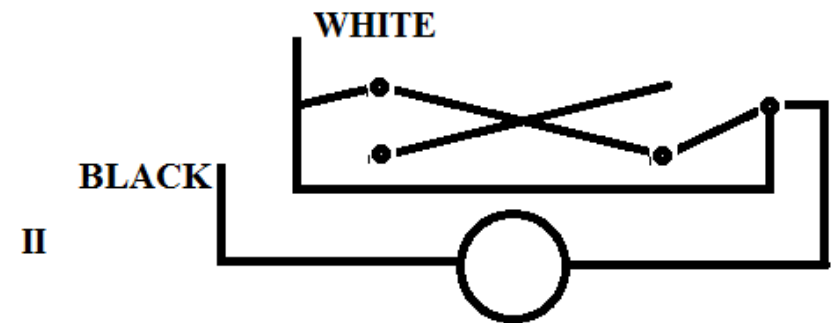
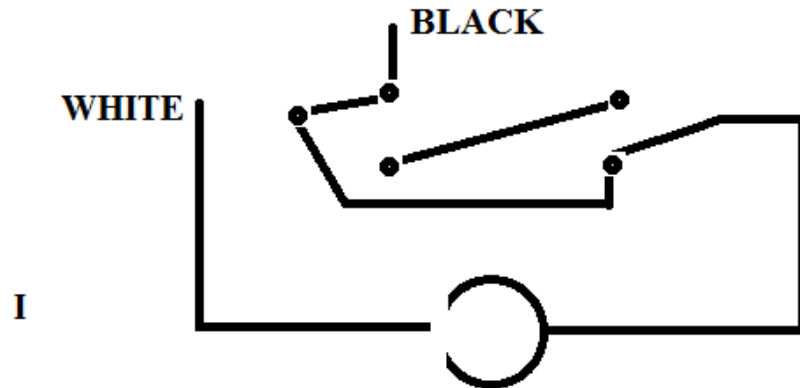
a. I only

b. II only

c. III only

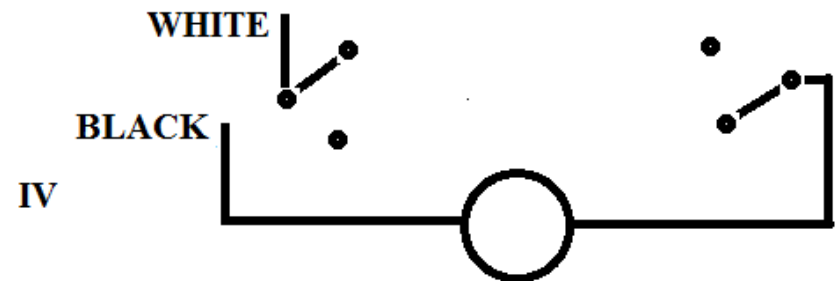
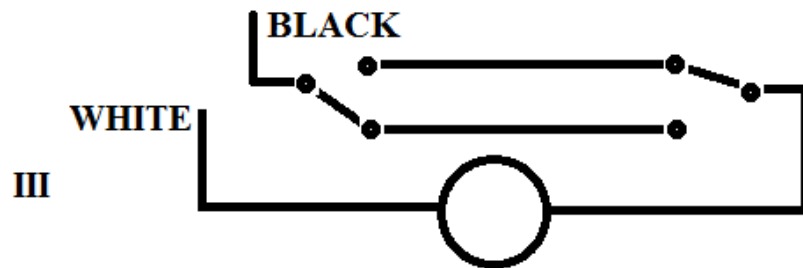
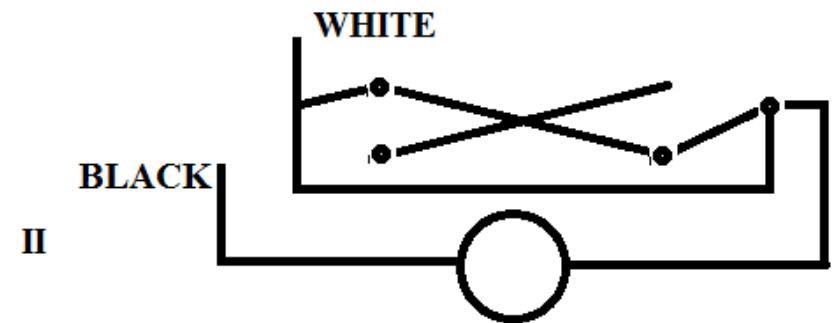
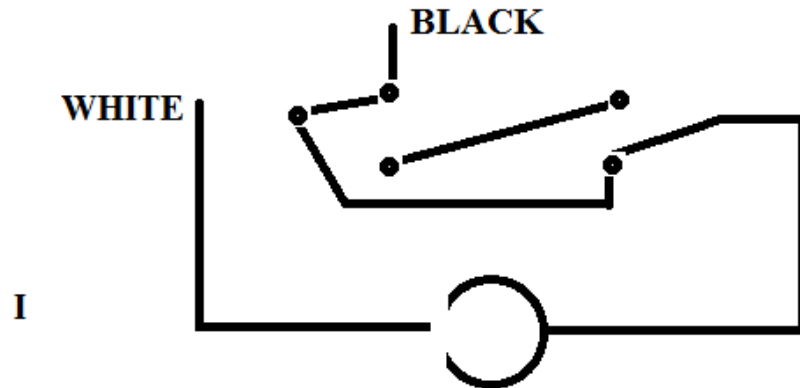
d. I, II & III

23. Which of the following is the correct wiring to a light controlled by two 3-way switches?



- a. I only b. II only c. III only d. IV only

23. Which of the following is the correct wiring to a light controlled by **two 3-way switches**?



- a. I only b. II only **c. III only** d. IV only

24. The Code considers low voltage to be _____.

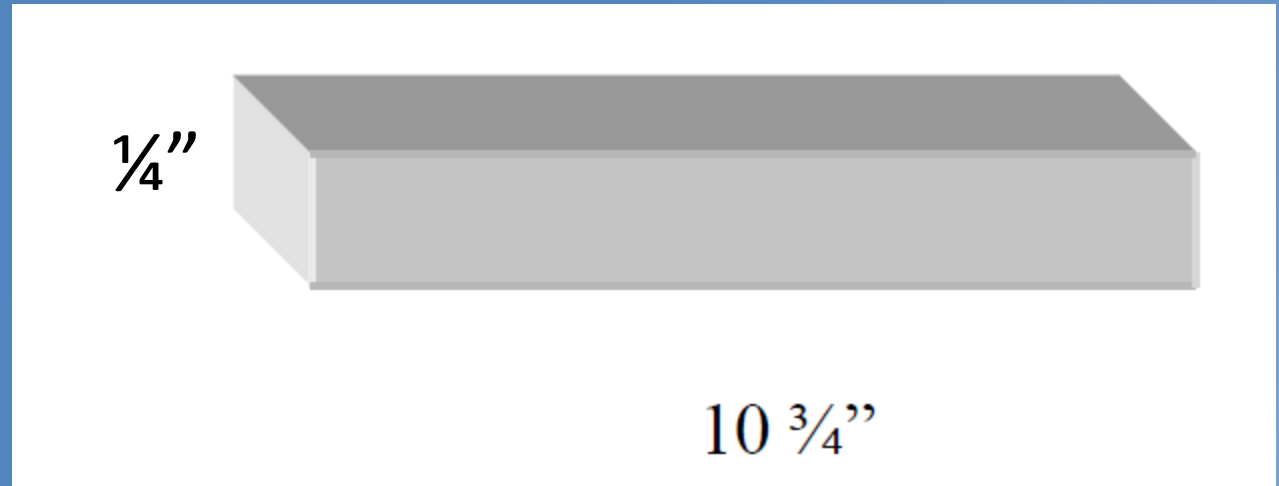
- a. 480 volts or less
- b. 600 volts or less
- c. 24 volts
- d. 12 volts

24. The Code considers **low voltage** to be _____.

- a. 480 volts or less
- b. 600 volts or less**
- c. 24 volts
- d. 12 volts

25. The cross-sectional area of the bus bar is _____ square inch.

- a. 0.125
- b. 1.34375
- c. 11.5
- d. None of these



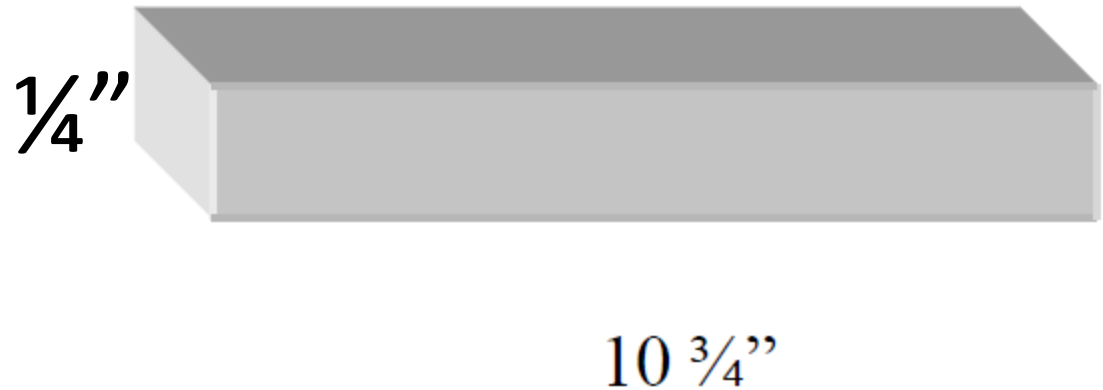
25. The cross-sectional area of the bus bar is _____ square inch.

a. 0.125

b. 1.34375

c. 11.5

d. None of these



26. A high spot temperature in a corroded electrical connection is caused by a (an) _____.

- a. Increase in the flow of current through the connection
- b. Decrease in the voltage drop across the connection
- c. Increase in the voltage drop across the connection
- d. Decrease in the effective resistance of the connection

26. A high spot temperature in a corroded electrical connection is caused by a (an) _____.

- a. Increase in the flow of current through the connection
- b. Decrease in the voltage drop across the connection
- c. Increase in the voltage drop across the connection
- d. Decrease in the effective resistance of the connection

27. _____ is the symbol used for the delta connection.

a. Ω

b. Σ

c. ϕ

d. Δ

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a. Ω

b. Σ

c. ϕ

d. Δ

28. Because aluminum is not a magnetic metal, there will be _____ present when aluminum conductors are grouped in a raceway.

- a. No heat due to voltage
- b. No heating due to hysteresis
- c. No induced currents
- d. None of these

28. Because aluminum is not a magnetic metal, there will be _____ present when aluminum conductors are grouped in a raceway.

- a. No heat due to voltage
- b. No heating due to hysteresis
- c. No induced currents
- d. None of these

29. A switch is a device for

_____.

I. Making or braking connections

II. Changing connections

III. Interruption of circuit under short-circuit conditions

a. I only

b. I & II only

c. II & III only

d. I, II & III

29. A **switch** is a device for

_____.

I. Making or braking connections

II. Changing connections

III. Interruption of circuit under short-circuit conditions

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b. I & II only

c. II & III only

d. I, II & III

30. At least two persons are required to be present during a high-voltage test because _____.

- a. One person can cover while the one is on break
- b. High voltage is too heavy for one
- c. If one is hurt the other person can help
- d. It eliminates overtime

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- a. One person can cover while the one is on break
- b. High voltage is too heavy for one
- c. If one is hurt the other person can help**
- d. It eliminates overtime

31. One of the essential functions of any switch is to maintain a _____.

- a. Good high-resistance contact in the closed position
- b. Good low-resistance contact in the closed position
- c. Good low-resistance contact in the open position
- d. Good high-resistance contact in the open position

31. One of the essential functions of any switch is to maintain a _____.

- a. Good high-resistance contact in the closed position
- b. Good low-resistance contact in the closed position
- c. Good low-resistance contact in the open position
- d. Good high-resistance contact in the open position

32. Which of the following is a 30-amp receptacle?



a.

b.

c.

d.

32. Which of the following is a 30-amp receptacle?



a.

b.

c.

d.

33. When the ground resistance exceeds the allowable value of 25 ohms, the resistance can be reduced by _____.

I. Paralleling ground rods

II. Using a longer ground rod

III. Using a larger diameter ground rod

IV. Chemical treatment of the soil

a. II & III only

b. I, II & III only

c. II, III & IV only

d. I, II, III & IV

33. When the **ground resistance exceeds** the allowable value of **25 ohms**, the resistance can **be reduced** by _____.

I. Paralleling ground rods

II. Using a longer ground rod

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IV. Chemical treatment of the soil

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b. I, II & III only

c. II, III & IV only

d. I, II, III & IV

34. Silver and gold are better conductors of electricity than copper; however, the main reason copper is used is its

_____.

- a. Weight
- b. Strength
- c. Melting point
- d. Cost is less

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_____.

- a. Weight
- b. Strength
- c. Melting point
- d. Cost is less

35. Standard lengths of conduit are in 10 foot lengths. A required feeder raceway is 18 yards in length, how many lengths of 10 foot conduit would you need?

a. 4

b. 5

c. 6

d. None of these

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a. 4

b. 5

c. 6

d. None of these

36. The term “open circuit” means

_____.

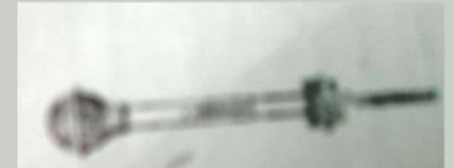
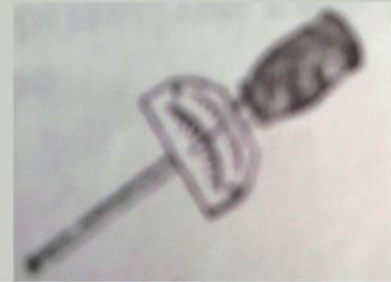
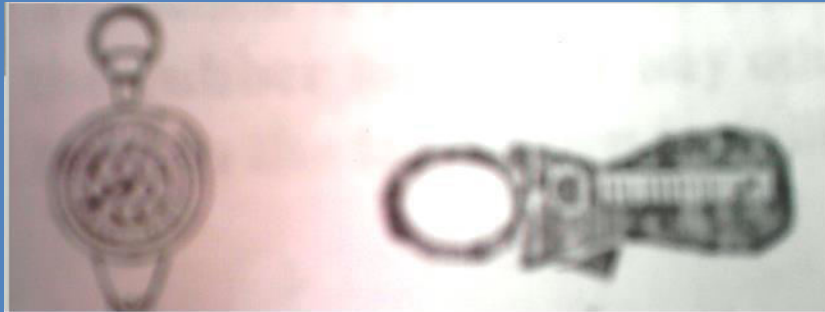
- a. The wiring is in an open area
- b. The wiring is exposed on a building
- c. All parts of the circuit are not in contact
- d. The circuit has one end exposed

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_____.

- a. The wiring is in an open area
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37. Which of the items below is used to test specific gravity?



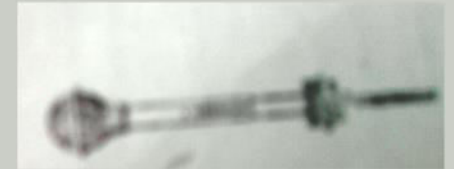
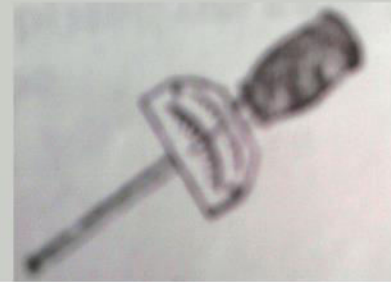
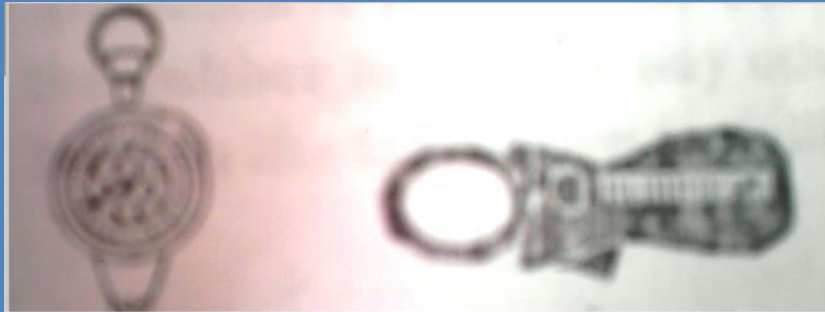
a.

b.

c.

d.

37. Which of the items below is used to test specific gravity?



a.

b.

c.

d.

38. Conduit should be installed as to prevent the collection of water in it between outlets. The conduit should not have _____.

- a. Low point at an outlet
- b. High point at an outlet
- c. High point between successive outlets
- d. Low point between successive outlets

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- a. Low point at an outlet
- b. High point at an outlet
- c. High point between successive outlets
- d. Low point between successive outlets**

39. Brass is an alloy of _____.

- a. Zinc and copper
- b. Lead and copper
- c. Tin and lead
- d. Lead and tin

39. Brass is an alloy of _____.

- a. Zinc and copper
- b. Lead and copper
- c. Tin and lead
- d. Lead and tin

40. Which type of the following portable fire extinguishers should be used on a live electrical fire?

- a. Carbon dioxide
- b. Water
- c. Foam
- d. Soda-acid

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a. Carbon dioxide

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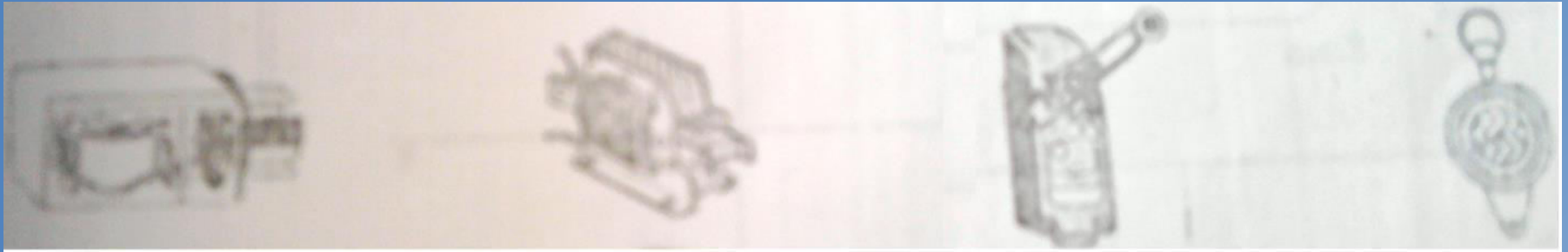
41. Enclosed knife switches that require the switch to be open before the housing door can be opened, are called _____ switches.

- a. Release
- b. Air-break
- c. Safety
- d. Service

41. Enclosed knife switches that require the switch to be open before the housing door can be opened, are called _____ switches.

- a. Release
- b. Air-break
- c. Safety
- d. Service

42. Which of the following is a solenoid?



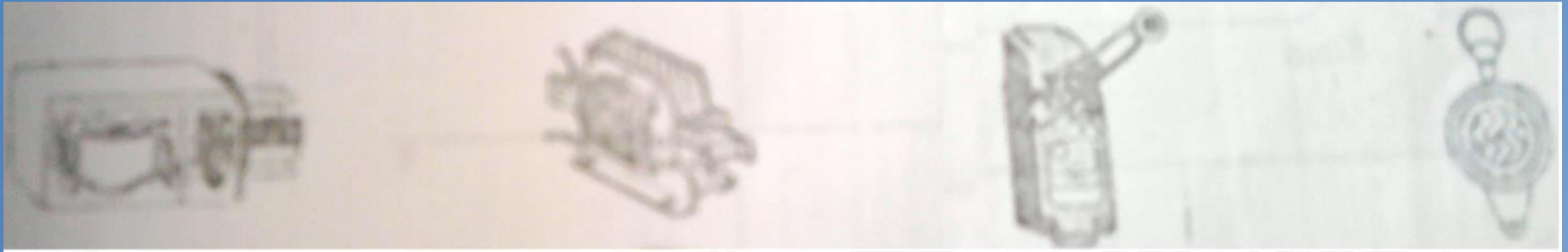
a.

b.

c.

d.

42. Which of the following is a **solenoid**?



a.

b.

c.

d.

43. What Article of the Code addresses high-voltage (over 600 volts)?

- a. 450
- b. 230
- c. 680
- d. 490

43. What Article of the Code addresses
high-voltage (over 600 volts)?

a. 450

b. 230

c. 680

d. 490

44. A close nipple _____.

- a. Is always $\frac{1}{2}$ " or less in length
- b. Has no threads
- c. Has only internal threads
- d. Has threads over its entire length

45. When applying rubber tape to an electrical splice, it would be necessary to _____.

- a. Stretch the tape properly during the application
- b. Apply an adhesive to the splice before applying the tape
- c. Apply the rubber tape after any other tape
- d. Apply heat to the tape when installing

45. When applying rubber tape to an electrical splice, it would be necessary to _____.

- a. Stretch the tape properly during the application
- b. Apply an adhesive to the splice before applying the tape
- c. Apply the rubber tape after any other tape
- d. Apply heat to the tape when installing

46. A stranded wire with the same AWG as a solid wire _____.

- a. Is used for higher voltages
- b. Has a higher ampacity
- c. Is larger in total diameter
- d. Has the same resistance

46. A stranded wire with the same AWG as a solid wire _____.

- a. Is used for higher voltages
- b. Has a higher ampacity
- c. Is larger in total diameter
- d. Has the same resistance

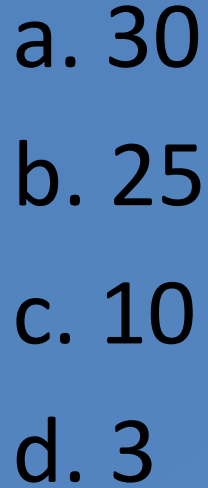
47. A limit switch is used on a piece of machinery to open the circuit when the _____.

- a. Current exceeds a preset limit
- b. Travel reaches a preset limit
- c. Pressure exceeds a preset limit
- d. Temperature reaches a preset limit

47. A **limit switch** is used on a piece of machinery to open the circuit when the _____.

- a. Current exceeds a preset limit
- b. Travel reaches a preset limit**
- c. Pressure exceeds a preset limit
- d. Temperature reaches a preset limit

- a. 30
- b. 25
- c. 10
- d. 3



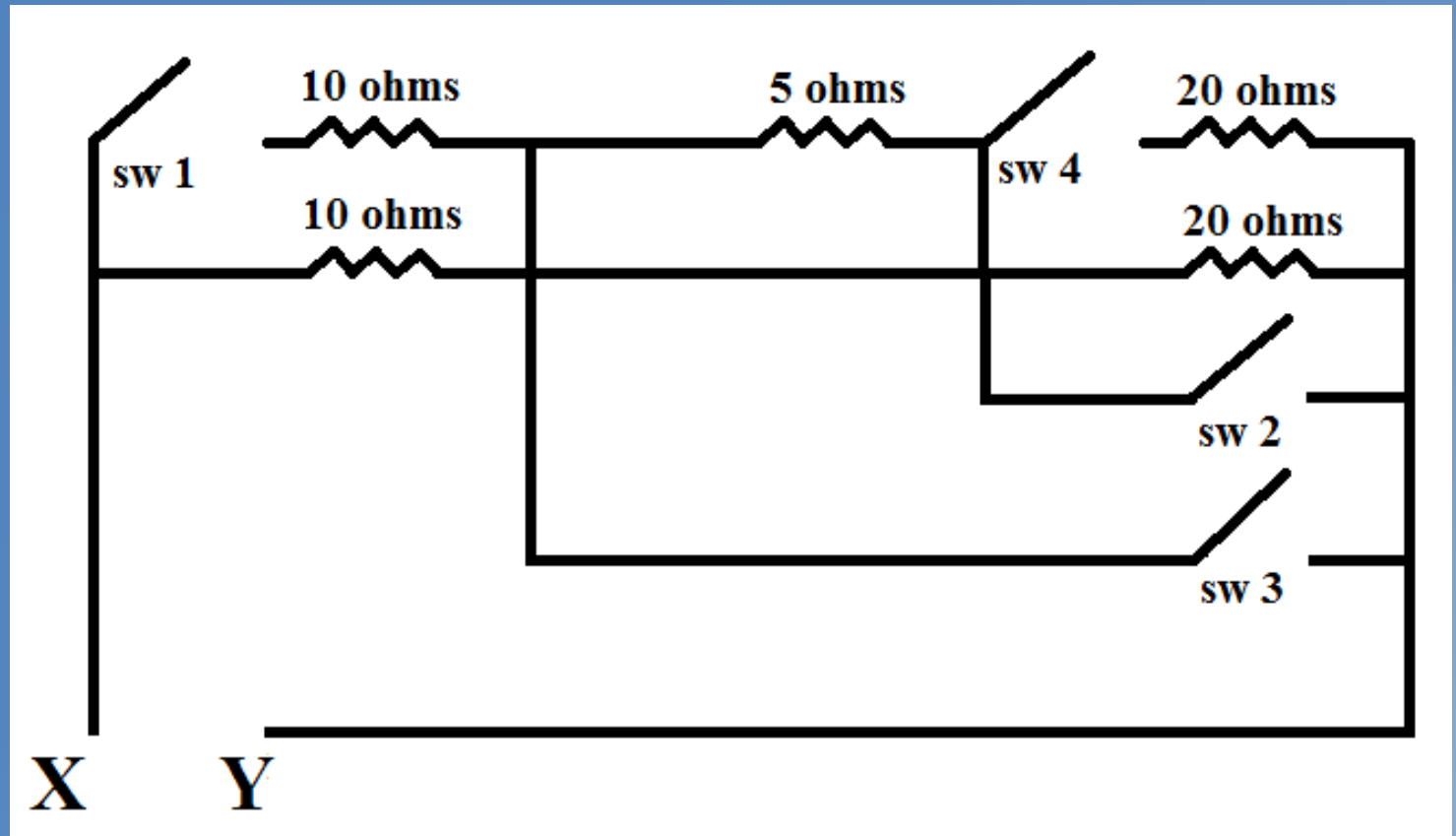
48. With switches 1 and 2 closed the combined resistance of the circuit is _____ ohms.

a. 30

b. 25

c. 10

d. 3



49. When rigid metal conduits are buried the minimum cover required by the Code is _____.

- a. 6"
- b. 12"
- c. 18"
- d. 24"

49. When rigid metal conduits are buried the minimum cover required by the Code is _____.

a. 6"

b. 12"

c. 18"

d. 24"

50. A fixture that weighs more than _____ pounds shall not be supported by the screw shell of a lampholder.

- a. 2
- b. 3
- c. 4
- d. 6

50. A fixture that weighs more than _____ pounds shall not be supported by the screw shell of a lampholder.

a. 2

b. 3

c. 4

d. 6

Journeyman

Chapter 12

Registered Master Electrician Reviewer

1. Your foreman asked you to measure the insulation resistance of some conductors. To do this you would use a _____.

- a. Hydrometer
- b. Megger
- c. Belt tester
- d. Wattmeter

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a. Hydrometer

b. Megger

c. Belt tester

d. Wattmeter

2. The main difference between a pipe thread and a machine thread is that the pipe thread is _____.

- a. Finer
- b. Longer
- c. Uneven
- d. Tapered

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3. Receptacles in residential wiring are regularly connected in _____.

- a. Parallel
- b. Perpendicular
- c. Series
- d. Diagonal

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a. Parallel

b. Perpendicular

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d. Diagonal

4. A foreman in charge of a crew in men preparing to work on a low voltage tension circuit should caution them to _____.

- a. Work only when the load is zero
- b. Consider the circuit hot at all times
- c. Never work on any circuit alone
- d. Wait until the circuit has been killed

4. A foreman in charge of a crew in men preparing to work on a **low voltage tension circuit** should caution them to _____.

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- b. Consider the circuit hot at all times**
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5. The term pneumatic refers to _____.

a. Electricity

b. Steam

c. Air

d. Oil

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a. Electricity

b. Steam

c. Air

d. Oil

6. What type of fastener would you use to mount a box to a hollow tile wall?

- a. Expansion bolts
- b. Toggle bolts
- c. Rawl plugs
- d. Bolts with backing plates

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7. If a low resistance is connected in parallel with a higher resistance, the combined resistance is ____.

- a. Higher or lower than the resistance depending on the size of the higher resistance
- b. Always less than the low resistance
- c. Always more than the higher resistance
- d. The total would be the low and high added together

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8. The lubricant used to make pulling wires through a conduit easier is _____.

- a. Grease
- b. Powdered pumice
- c. Vaseline
- d. powdered soapstone

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9. The instrument by which electric power is measured is a _____.

- a. Ammeter
- b. Rectifier
- c. Voltmeter
- d. Wattmeter

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10. The connection between the grounded circuit conductor and the equipment grounding conductor at the service is called the _____ bonding jumper.

- a. Circuit
- b. Equipment
- c. Main
- d. Appliance

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11. The larger the conductor, the _____.

- a. Higher the resistance
- b. Lower the ampacity
- c. Higher the voltage
- d. Lower the resistance

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- a. Higher the resistance
- b. Lower the ampacity
- c. Higher the voltage
- d. Lower the resistance

12. A hook on the end of a fish tape is not to _____.

- a. Keep it from catching on joints and bends
- b. Tie a swab to
- c. Tie the wires, to be pulled
- d. Protect the end of the wire

12. A hook on the end of a fish tape is not to _____.

- a. Keep it from catching on joints and bends
- b. Tie a swab to
- c. Tie the wires, to be pulled
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13. Which of the following is a LL conduit body?



a.

b.

c.

d.

13. Which of the following is a **LL conduit body**?



a.

b.

c.

d.

14. When soldering two copper conductors together, they are kept clean while heating by _____.

- a. the use of flux
- b. Applying the solder quickly
- c. Rubbing often with emery cloth
- d. Not permitting the open flame to touch them

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15. Metal cabinets used for lighting circuits are grounded to _____.

- a. Reduce shock hazard
- b. Eliminate electrolysis
- c. Assure that the fuse will blow in defective circuit
- d. Simplify the wiring

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- a. Reduce shock hazard
- b. Eliminate electrolysis
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16. In sockets, extension cord is protected by means of the _____ knot.

- a. Underwriters'
- b. Clove hitch
- c. Sheepshank
- d. Western union

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- a. Underwriters'
- b. Clove hitch
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17. A branch circuit that supplies a number of outlets for lighting and appliances is a _____.

- a. Individual
- b. Multi-purpose
- c. General purpose
- d. Utility

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- a. Individual
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18. When three equal resistors are connected in parallel, the total resistance is _____.

- a. Equal to the resistance of each
- b. Less than anyone resistor
- c. Greater than any one resistor
- d. None of these

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19. The efficiency of the motor is a measured of _____.

- a. The natural speed of the motor
- b. The torque the motor produces
- c. How well it converts electrical energy into mechanical energy
- d. The power output of the motor in horsepower

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- a. The natural speed of the motor
- b. The torque the motor produces
- c. How well it converts electrical energy into mechanical energy**
- d. The power output of the motor in horsepower

20. When stripping insulation from an aluminum conductor _____.

I. Remove insulation as you would sharpen a pencil

II. Ring the conductor and slip the insulation of the conductor

III. Peel the insulation back and then cut outwards

a. I, II & III

c. I & III only

b. I & II only

d. II & III only

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II. Ring the conductor and slip the insulation of the conductor

III. Peel the insulation back and then cut outwards

a. I, II & III

c. I & III only

b. I & II only

d. II & III only

21. The _____ angle is the angle between the real power and the apparent power.

- a. Lag
- b. Power factor
- c. Voltage-current
- d. Watt

21. The _____ angle is the angle between the real power and the apparent power.

a. Lag

b. Power factor

c. Voltage-current

d. Watt

22. The most heat is created when current flows through which of the following?

- a. A 10 ohm condenser
- b. A 10 ohm inductance coil
- c. A 10 ohm resistor
- d. Heat would be equal

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- c. A 10 ohm resistor
- d. Heat would be equal

23. 60 cycle frequency travels 180 degrees in how many seconds?

a. $1/60$

b. $1/120$

c. $1/180$

d. $1/30$

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a. $1/60$

b. $1/120$

c. $1/180$

d. $1/30$

24. The current carrying capacity of conductors expressed in amperes is _____.

- a. Demand
- b. Pressure
- c. Ampacity
- d. Duty-cycle

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- a. Demand
- b. Pressure
- c. Ampacity
- d. Duty-cycle

25. The electrician's tapered reamer is used for _____.

- a. Reaming the threads on couplings
- b. Reaming the holes in bushings
- c. Reaming the ends of rigid conduit after it is cut
- d. Making holes in boxes

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- a. Reaming the threads on couplings
- b. Reaming the holes in bushings
- c. Reaming the ends of rigid conduit after it is cut
- d. Making holes in boxes

26. Electricity is sold by the kilowatt which is
_____ watts.

- a. 10,000
- b. 1000
- c. 100
- d. 100,000

26. Electricity is sold by the kilowatt which is _____ watts.

a. 10,000

b. 1000

c. 100

d. 100,000

27. Three-way switching does not use the following conductor:

- a. Ungrounded
- b. Traveler
- c. Grounded
- d. Switch leg

27. Three-way switching does not use the following conductor:

- a. Ungrounded
- b. Traveler
- c. Grounded
- d. Switch leg

28. The greater the number of free electrons the better the _____ of a metal.

- a. Insulation wire
- b. Resistance
- c. Voltage drop
- d. Conductivity

28. The greater the number of free electrons the better the _____ of a metal.

- a. Insulation wire
- b. Resistance
- c. Voltage drop
- d. Conductivity

29. To cut Wiremold you would _____.

- a. Use a chisel
- b. Use an approved cutter like an M.M. cutter
- c. Use a pair of tin snips
- d. Use a hacksaw and remove the burr with a file

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- b. Use an approved cutter like an M.M. cutter
- c. Use a pair of tin snips
- d. Use a hacksaw and remove the burr with a file

30. Electrical contacts are opened or closed when the electrical current energizes the coils of a device called a _____.

- a. Thermostat
- b. Reactor
- c. Condenser
- d. Relay

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- a. Thermostat
- b. Reactor
- c. Condenser
- d. Relay

31. A clamp-on ammeter will measure _____.

- a. Voltage when clamped on a single conductor
- b. current when clamped on a multi-conductor cable
- c. Accurately only when parallel to cable
- d. Accurately only when clamped perpendicular to a conductor

31. A clamp-on ammeter will measure _____.

- a. Voltage when clamped on a single conductor
- b. current when clamped on a multi-conductor cable
- c. Accurately only when parallel to cable
- d. Accurately only when clamped perpendicular to a conductor

32. When current leaves its intended path and returns to the source, by passing the load, the circuit is _____.

- a. Open
- b. Shorted
- c. Incomplete
- d. Broken

32. When **current leaves its intended path and returns to the source**, by passing the load, the circuit is _____.

- a. Open
- b. Shorted**
- c. Incomplete
- d. Broken

33. The electric pressure or electromotive force is measured by the _____.

- a. Volt
- b. Electric meter
- c. Watt
- d. Kilowatt

33. The electric pressure or electromotive force is measured by the _____.

a. Volt

b. Electric meter

c. Watt

d. Kilowatt

34. Conduit installed in a concrete slab is considered a _____.

- a. Damp location
- b. Moist location
- c. Wet location
- d. Dry location

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- a. Damp location
- b. Moist location
- c. Wet location
- d. Dry location

35. It is best as a safety measure, not to use water to extinguish electrical equipment fires. The main reason is that water _____.

- a. May transmit shock to the user
- b. Will turn to steam
- c. Will not put the fire out
- d. May damage the wiring

35. It is best as a safety measure, not to use water to extinguish electrical equipment fires. The main reason is that water _____.

- a. May transmit shock to the user
- b. Will turn to steam
- c. Will not put the fire out
- d. May damage the wiring

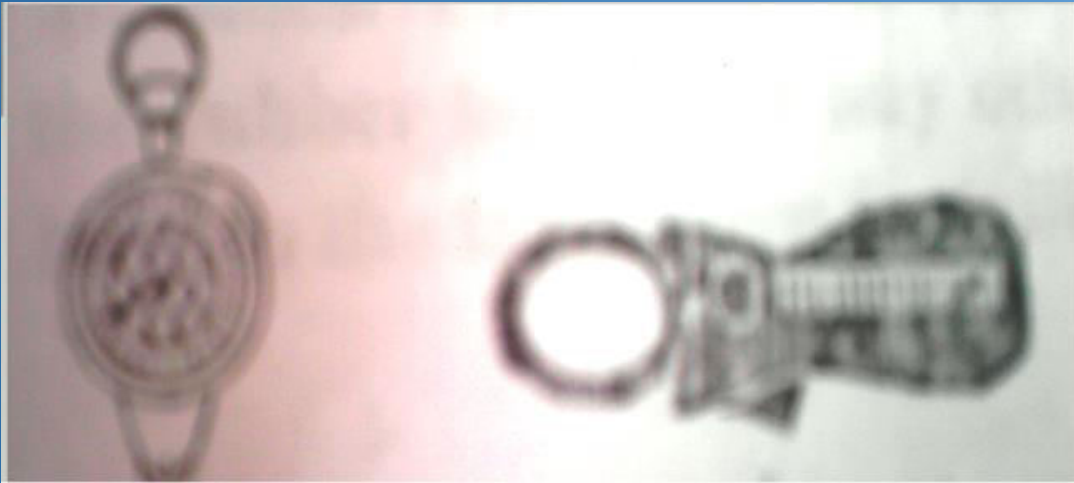
36. The total opposition to current flow in an AC circuit is expressed in ohms and is called _____.

- a. Impedance
- b. Conductance
- c. Reluctance
- d. Resistance

36. The total opposition to current flow in an AC circuit is expressed in ohms and is called _____.

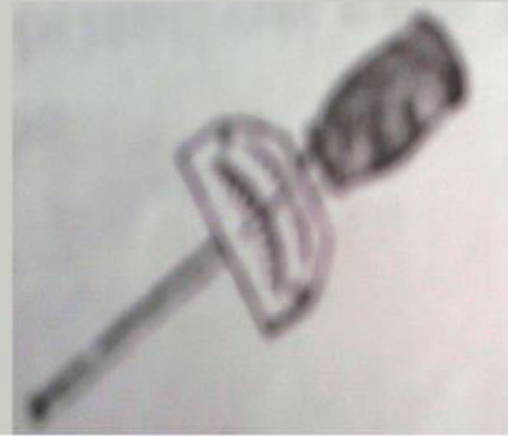
- a. Impedance
- b. Conductance
- c. Reluctance
- d. Resistance

37. Which of the items below is a rotometer?



a.

b.

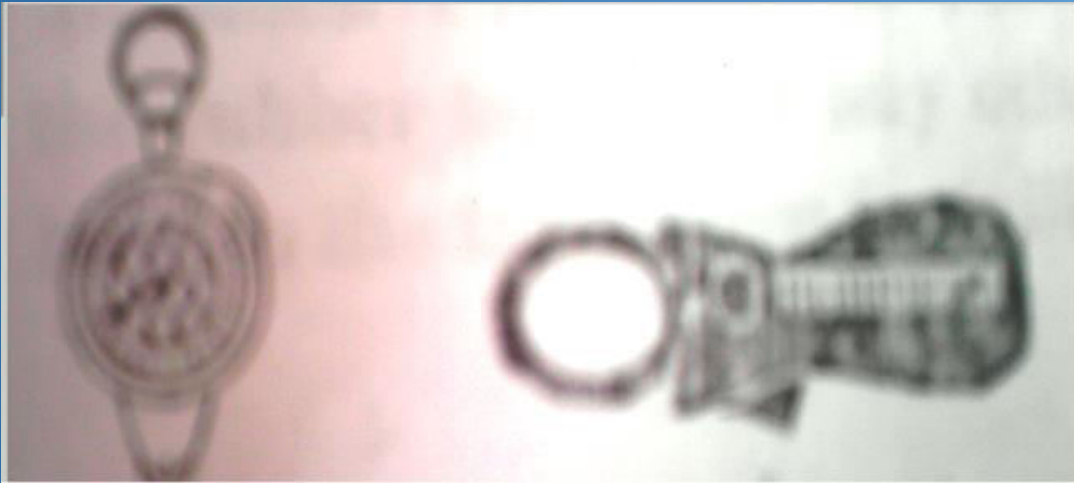


c.



d.

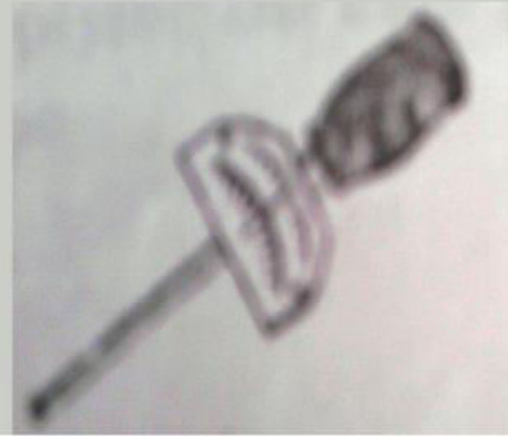
37. Which of the items below is a **rotometer**?



a.



b.



c.



d.

38. When a person is burned the basic care steps are _____.

- a. Cover and cool the burned area
- b. Prevent infection
- c. Care for shock
- d. All of these

38. When a person is burned the basic care steps are _____.

- a. Cover and cool the burned area
- b. Prevent infection
- c. Care for shock
- d. All of these

39. A multimeter is a combination of _____.

- a. Ammeter, ohmmeter and wattmeter
- b. Voltmeter, ohmmeter and ammeter
- c. Voltmeter, ammeter and megger
- d. Voltmeter, wattmeter and ammeter

39. A **multimeter** is a combination of _____.

a. Ammeter, ohmmeter and wattmeter

b. Voltmeter, ohmmeter and ammeter

c. Voltmeter, ammeter and megger

d. Voltmeter, wattmeter and ammeter

40. A good magnetic material is _____.

- a. Brass
- b. Copper
- c. Iron
- d. Aluminum

40. A good magnetic material is _____.

- a. Brass
- b. Copper
- c. Iron
- d. Aluminum

41. Since fuses are rated by an amperage and voltage a fuse will work on _____.

- a. AC only
- b. AC or DC
- c. DC only
- d. Any voltage

41. Since fuses are rated by an amperage and voltage a fuse will work on _____.

a. AC only

b. AC or DC

c. DC only

d. Any voltage

42. A fuse puller is used in replacing _____.

- a. Cartridge fuses
- b. Plug fuses
- c. Link fuses
- d. Ribbon fuses

42. A fuse puller is used in replacing _____.

a. Cartridge fuses

b. Plug fuses

c. Link fuses

d. Ribbon fuses

43. A pendant fixture is a _____.

- a. Hanging fixture
- b. Recessed fixture
- c. Bracket fixture
- d. None of these

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- a. Hanging fixture
- b. Recessed fixture
- c. Bracket fixture
- d. None of these

44. To fasten an outlet box between the studs in a wall constructed of metal lath and plaster, you would use _____.

- a. Cement or mortar
- b. iron wire
- c. Nylon lath twine
- d. An approved box hanger

44. To **fasten an outlet box** between the studs in a wall constructed of metal lath and plaster, you would use _____.

- a. Cement or mortar
- b. iron wire
- c. Nylon lath twine
- d. An approved box hanger**

45. The unit of measurement for electrical resistance to current is the _____.

- a. Watt
- b. Ohm
- c. Volt
- d. Amp

45. The unit of measurement for electrical resistance to current is the _____.

a. Watt

b. Ohm

c. Volt

d. Amp

46. A low energy power circuit _____.

- a. Is a remote-control circuit
- b. Is a signal circuit
- c. Has its power supplied by transformers and batteries
- d. None of these

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a. Is a remote-control circuit

b. Is a signal circuit

c. Has its power supplied by transformers and batteries

d. None of these

47. To convert AC to DC you will use _____.

- a. Generator
- b. Rectifier
- c. Vibrator
- d. Auto-transformer

47. To convert AC to DC you will use _____.

a. Generator

b. Rectifier

c. Vibrator

d. Auto-transformer

48. S3 is a symbol used on a drawing to indicate a _____ switch.

- a. Flush
- b. Single-pole
- c. Four-way
- d. Three-way

48. S_3 is a symbol used on a drawing to indicate a _____ switch.

- a. Flush
- b. Single-pole
- c. Four-way
- d. Three-way

49. Action requiring personal intervention for its control:

- a. Controller
- b. Automatic
- c. Periodic duty
- d. Non-automatic

49. Action requiring **personal intervention** for its control:

- a. Controller
- b. Automatic
- c. Periodic duty
- d. Non-automatic**

50. A voltmeter is connected in _____ with the load.

- a. Series
- b. Parallel
- c. Series-parallel
- d. Series-shunt

50. A voltmeter is connected in _____ with the load.

a. Series

b. Parallel

c. Series-parallel

d. Series-shunt