Question Bank 3

AR. ANGEL B. MANLAPAO, UAP, RMP

1.Which of the following step is used for isolating a circuit breaker maintenance purposes?

A. Turn off the main generator

B. Open the disconnect switches

C. Connect the circuit breaker contacts to ground

D. Short circuit the circuit breaker

1.Which of the following step is used for isolating a circuit breaker maintenance purposes?

A. Turn off the main generator

B. Open the disconnect switches

C. Connect the circuit breaker contacts to ground

D. Short circuit the circuit breaker

2. How would determine, from visual observation of the armature winding, whether the generator is a lap or a wave wound.

A. Direction of the connection

B. Connection to the commutator

C. Connection to the field winding

D. Connection to brushes

2. How would determine, from visual observation of the armature winding, whether the generator is a lap or a wave wound.

A. Direction of the connection

B. Connection to the commutator

C. Connection to the field winding

D. Connection to brushes

3. A resistor of 4-ohm resistance is connected in a parallel with a series combination two resistors, 3 ohm & 1 ohm respectively. What is the equivalent resistance of the whole combination.

A. 8 ohms
B. 3 ohms
C. 5 ohms
D. 2 ohms

3. A resistor of 4-ohm resistance is connected in a parallel with a series combination two resistors, 3 ohm & 1 ohm respectively. What is the equivalent resistance of the whole combination.

A. 8 ohms
B. 3 ohms
C. 5 ohms
D. 2 ohms

Rt = 4(3+1) / 4+(3+1)

Rt = 2 ohms

4. How many year is the term of office for any members of the BEE (Board of Electrical Eng’g).?

A. 3 years
B. 2 years
C. 1 year
D. 4 years

4. How many year is the term of office for any members of the BEE (Board of Electrical Eng’g).?

A. 3 years
B. 2 years
C. 1 year
D. 4 years

5. If a person is accidentally in electric shock, which of the following is the first thing to do?

A. Call immediately the nearest doctor
B. Attend instantly to the victim’s breathing
C. Separate the victim immediately from the circuit
D. Give him water at once to help them breath

5. If a person is accidentally in electric shock, which of the following is the first thing to do?

A. Call immediately the nearest doctor
B. Attend instantly to the victim’s breathing
C. Separate the victim immediately from the circuit
D. Give him water at once to help them breath

6. If a three-phase, delta-wye transformer bank having a 480 V primary, and a 208/120 V secondary, is considered to be 100% efficient, and to have resistive type of load, the maximum KVA of the load will be ____.

I. Equal to the KVA of the secondary of the transformer

II. Equal to the primary KVA of the transformer

III. Considerably less than the KVA of the transformer

A. I, II & III

B. I only

C. I & II only

D. II only

6. If a three-phase, delta-wye transformer bank having a 480 V primary, and a 208/120 V secondary, is considered to be 100% efficient, and to have resistive type of load, the maximum KVA of the load will be ____.

I. Equal to the KVA of the secondary of the transformer

II. Equal to the primary KVA of the transformer

III. Considerably less than the KVA of the transformer

A. I, II & III

B. I only

C. I & II only

D. II only

7. What type of lubrication is commonly used in gear motors?

A. Water
B. Oil
C. Grease
D. Talc

7. What type of lubrication is commonly used in gear motors?

A. Water
B. Oil
C. Grease
D. Talc

8. One horsepower is equivalent to how many watts?

A. 746 watts
B. 764 watts
C. 674 watts
D. 500 watts

8. One horsepower is equivalent to how many watts?

A. 746 watts
B. 764 watts
C. 674 watts
D. 500 watts

9. Relays which verify the condition of the power system or in protection system.

A. Auxiliary relay
B. Regulating relay
C. Programming relay
D. Monitoring relay

9. Relays which verify the condition of the power system or in protection system.

A. Auxiliary relay
B. Regulating relay
C. Programming relay
D. Monitoring relay

10. A substance that cannot be decomposed any further by any chemical reaction.

A. Ion
B. Element
C. Molecule
D. Non of these

10. A substance that cannot be decomposed any further by any chemical reaction.

A. Ion
B. Element
C. Molecule
D. Non of these

11. If the needle of the VOM will no longer align with the zero-ohm mark at the lowest range of the resistance but will align on the other resistance ranges, which of the following is a probable cause?

A. The needle is bend
B. The supply battery is weak
C. The meter current is abnormal
D. The terminal were interchanged

11. If the needle of the VOM will no longer align with the zero-ohm mark at the lowest range of the resistance but will align on the other resistance ranges, which of the following is a probable cause?

A. The needle is bend
B. The supply battery is weak
C. The meter current is abnormal
D. The terminal were interchanged

12. The no load power input of a transformer is approximately equal to what losses in a transformer?

A. Iron losses
B. Copper losses
C. Ventilation losses
D. All of these

12. The no load power input of a transformer is approximately equal to what losses in a transformer?

A. Iron losses
B. Copper losses
C. Ventilation losses
D. All of these

13. A Merz-price protection is suitable for?

A. Alternators
B. Transformers
C. Transmission lines
D. feeders

13. A Merz-price protection is suitable for?

A. Alternators
B. Transformers
C. Transmission lines
D. feeders

14. The admittance in AC circuit is a parameter equivalent to which of the following?

A. Impedance
B. Square of impedance
C. Square root of impedance
D. Reciprocal of impedance

14. The admittance in AC circuit is a parameter equivalent to which of the following?

A. Impedance
B. Square of impedance
C. Square root of impedance
D. Reciprocal of impedance

15. In applying mouth to mouth rescue breathing to a person under electric shock, which of the following is the correct sequence out of the following scrambled steps?

I. Pull his chain to keep his tongue out
II. Clear his throat from any materials
III. Place him on his back
IV. Blow air through his nose or mouth
V. Tilt his head as far as possible

A. I, III, II, V, IV B. III, V, I, IV, II C. III, II, V, I, IV D. II, V, III, IV, I

15. In applying mouth to mouth rescue breathing to a person under electric shock, which of the following is the correct sequence out of the following scrambled steps?

I. Pull his chain to keep his tongue out

II. Clear his throat from any materials

III. Place him on his back

IV. Blow air through his nose or mouth

V. Tilt his head as far as possible

A. I, III, II, V, IV B. III, V, I, IV, II C. III, II, V, I, IV D. II, V, III, IV, I

16. What is the resistance of a component having no continuity?

A. Low resistance
B. Zero resistance
C. Infinite resistance
D. All of these

16. What is the resistance of a component having no continuity?

A. Low resistance
B. Zero resistance
C. Infinite resistance
D. All of these

17. What is the common tripping time for 60 Hz circuit breaker?

A. 6 cycles
B. 8 cycles
C. 7 cycles
D. 5 cycles

17. What is the common tripping time for 60 Hz circuit breaker?

A. 6 cycles
B. 8 cycles
C. 7 cycles
D. 5 cycles

18. Motor used to start heavy loads?

A. Synchronous motor
B. Series motor
C. Wound rotor motor
D. Compound motor

18. Motor used to start heavy loads?

A. Synchronous motor
B. Series motor
C. Wound rotor motor
D. Compound motor

19. What should you do to prevent a shock when working on a high voltage supply?

A. Open the filter capacitor
B. Discharge the filter capacitor
C. Closed the filter capacitor
D. Charge the filter capacitor

19. What should you do to prevent a shock when working on a high voltage supply?

A. Open the filter capacitor
B. Discharge the filter capacitor
C. Closed the filter capacitor
D. Charge the filter capacitor

20. Which of the following is a unit of flux?

A. Ampere turns
B. Gilbert
C. Oersted
D. Maxwell

20. Which of the following is a unit of flux?

A. Ampere turns
B. Gilbert
C. Oersted
D. Maxwell

21. An oscilloscope is usually used to measure____.

A. RMS voltage
B. Average voltage
C. Maximum voltage
D. All of these

21. An oscilloscope is usually used to measure____.

A. RMS voltage
B. Average voltage
C. Maximum voltage
D. All of these

22. A resistance of 4 ohms is connected in a series to a parallel connection of two 8-ohm resistance. The total resistance is____

A. 6 ohms
B. 20 ohms
C. 8 ohms
D. 12 ohms

22. A resistance of 4 ohms is connected in a series to a parallel connection of two 8-ohm resistance. The total resistance is____

A. 6 ohms
B. 20 ohms
C. 8 ohms
D. 12 ohms

Rt = 8(8) / 8+8 + 4

Rt = 8 ohms

23. When cleaning a commutator, which of the following shall NOT be used?

A. Clean cloth
B. Sand paper
C. Emery
D. File

23. When cleaning a commutator, which of the following shall NOT be used?

A. Clean cloth
B. Sand paper
C. Emery
D. File

24. What is the equivalent capacitance of two series capacitors rated 4 and 6 uF respectively?

A. 2.4 uF
B. 10 uF
C. 0.416 uF
D. 0.1 uF

24. What is the equivalent capacitance of two series capacitors rated 4 and 6 uF respectively?

A. 2.4 uF
B. 10 uF
C. 0.416 uF
D. 0.1 uF

$1/Ct = 1/C1 + 1/C2$

$1/Ct = 1/4 + 1/6$

$Ct = 2.4$ uF

25. In the event that the prime mover fails, the alternator is prevented from motorizing by which device?

A. Voltage regulator
B. Inverse time CB
C. Reverse power relay
D. Thermal overload relay

25. In the event that the prime mover fails, the alternator is prevented from motorizing by which device?

A. Voltage regulator
B. Inverse time CB
C. Reverse power relay
D. Thermal overload relay

26. For efficient operation, induction motors are always designed with a small.

A. Air gap
B. Voltage drop
C. Inductive reactance
D. impedance

26. For efficient operation, induction motors are always designed with a small.

A. Air gap
B. Voltage drop
C. Inductive reactance
D. impedance

27. Which one is a semi-conductor?

A. Phosphorous
B. Arsenic
C. Gallium arsenide
D. Diamond

27. Which one is a semi-conductor?

A. Phosphorous
B. Arsenic
C. Gallium arsenide
D. Diamond

28. What is the name of an ion that acquires additional electrons?

A. Anion
B. Cathode
C. Anode
D. Cation

28. What is the name of an ion that acquires additional electrons?

A. Anion
B. Cathode
C. Anode
D. Cation

29. In order for a material to be called a conductor, what is the maximum number of valence electrons it can have?

A. 1
B. 2
C. 3
D. 8

29. In order for a material to be called a conductor, what is the maximum number of valence electrons it can have?

A. 1

B. 2

C. 3

D. 8

30. The resistance of four rheostats are 10, 5, 7 & 3 ohms, which are connected in series to a battery, which produces a potential difference of 75 V across its terminals. Find the current in each rheostat.

A. 10 A

B. 3 A

C. 5 A

D. 7 A

30. The resistance of four rheostats are 10, 5, 7 & 3 ohms, which are connected in series to a battery, which produces a potential difference of 75 V across its terminals. Find the current in each rheostat.

A. 10 A

B. 3 A

C. 5 A

D. 7 A

$I = E/Rt$

$I = 75 / 10+5+7+3$

$I = 3A$

31. Three resistor R1,R2 and R3 are connected in series across a 100-V source. If R2 opens, the

A. Voltage across R2 is 100 V
B. Voltage across R1 is 100 V
C. Total resistance decreases
D. Voltage across R2 is zero

31. Three resistor R1,R2 and R3 are connected in series across a 100-V source. If R2 opens, the

A. Voltage across R2 is 100 V
B. Voltage across R1 is 100 V
C. Total resistance decreases
D. Voltage across R2 is zero

32. A 6-cell lead acid battery produces how much voltage across its terminals.?

A. 6 V
B. 12 V
C. 9 V
D. 18 V

32. A 6-cell lead acid battery produces how much voltage across its terminals.?

A. 6 V
B. 12 V
C. 9 V
D. 18 V

E = (voltage / cell) (n)
E = (2 V) (6)
E = 12 V

33. This winding is connected in series with armature winding of a DC generator to compensate the field flux distortion due to armature reaction.

A. Series field windings
B. Interpole windings
C. Compensating windings
D. Shunt field windings

33. This winding is connected in series with armature winding of a DC generator to compensate the field flux distortion due to armature reaction.

A. Series field windings
B. Interpole windings
C. Compensating windings
D. Shunt field windings

34. Voltage across an electric circuit, acts as a?

A. Mass of electrons
B. Negative ions
C. Force
D. Component of current

34. Voltage across an electric circuit, acts as a?

A. Mass of electrons
B. Negative ions
C. Force
D. Component of current

35. An ideal step-up transformer with 100 turns in the primary and 2500 turns in the secondary carries a load of 2 A in the secondary windings. What is the current in the primary side?

A. 50 A
B. 0.08 A
C. 25 A
D. 1,250 A

35. An ideal step-up transformer with 100 turns in the primary and 2500 turns in the secondary carries a load of 2 A in the secondary windings. What is the current in the primary side?

A. 50 A
B. 0.08 A
C. 25 A
D. 1,250 A

$I_1/I_2 = N_2/N_1$

$I_1 = I_2 (N_2/N_1)$

$I_1 = 2 (2500/100)$

$I = 50$ A

36. When examining a dead set, which item should be checked?

A. Open filament
B. Power supply diodes
C. Fuse
D. All of these

36. When examining a dead set, which item should be checked?

A. Open filament
B. Power supply diodes
C. Fuse
D. All of these

37. Twenty resistors each having a resistance of 1000 ohms are connected in parallel. The equivalent resistance is.

A. 20,000 ohms
B. 50 ohms
C. 500 ohms
D. 5,000 ohms

37. Twenty resistors each having a resistance of 1000 ohms are connected in parallel. The equivalent resistance is.

A. 20,000 ohms
B. 50 ohms
C. 500 ohms
D. 5,000 ohms

$Rt = R/n$

$Rt = 100/20$

$Rt = 50$ ohms

38. A 220-V, 10 hp, single-phase induction motor operates at an efficeiency of 86% at a power factor of 90%. What is the current.

A. 45.26 A
B. 37.69 A
C. 34.81 A
D. 43.81 A

38. A 220-V, 10 hp, single-phase induction motor operates at an efficeiency of 86% at a power factor of 90%. What is the current.

A. 45.26 A
B. 37.69 A
C. 34.81 A
D. 43.81 A

$P = EIpf$

$Hp = P_{out}/P_{in} = P_{out}/Eipf$

$I = P_{out}/hpEpf$

$I = 10hp \times 746/hp / 0.86(220)(0.0)$

$I = 43.81$

39. One of the following parameters cannot be change by a transformer? Which one?

A. Impedance
B. Current
C. Voltage
D. Power

39. One of the following parameters cannot be change by a transformer? Which one?

A. Impedance
B. Current
C. Voltage
D. Power

40. The counter EMF of a DC motor is zero when the ____.

A. Armature is not turning
B. Armature just begins to turn
C. Motor is at rated speed
D. Motor is almost up to rated speed

40. The counter EMF of a DC motor is zero when the ____.

A. Armature is not turning
B. Armature just begins to turn
C. Motor is at rated speed
D. Motor is almost up to rated speed

41. Which of the following types of motors is most commonly used for overhead cranes?

A. DC series motor
B. Split-phase motor
C. DC shunt motor
D. Synchronous motor

41. Which of the following types of motors is most commonly used for overhead cranes?

A. DC series motor
B. Split-phase motor
C. DC shunt motor
D. Synchronous motor

42. A wattmeter measures.

A. AC as well DC power
B. AC power only
C. DC reactive power only
D. None of these

42. A wattmeter measures.

A. AC as well DC power
B. AC power only
C. DC reactive power only
D. None of these

43. In parallel operation of DC generators which of the following parameters must be the same?

A. Current
B. Power
C. Voltage
D. All of these

43. In parallel operation of DC generators which of the following parameters must be the same?

A. Current
B. Power
C. Voltage
D. All of these

44. Transforms heat energy to electric energy.

A. Transformer
B. Battery
C. Generator
D. Thermocouple

44. Transforms heat energy to electric energy.

A. Transformer
B. Battery
C. Generator
D. Thermocouple

45. Which of the following is NOT normally found on alternators?

A. Slip rings
B. Commutator
C. Brushes
D. Field coils

45. Which of the following is NOT normally found on alternators?

A. Slip rings
B. Commutator
C. Brushes
D. Field coils

46. Which of the following statements is NOT true?

A. A discharged lead-acid cell for a long time can easily be charged
B. Lead-acid cells can be charged and discharged at the very high rate without damaging the plates.
C. A lead-acid cell has lesser ampere hour capacity than a nickel iron cell of the same capacity.
D. All of these

46. Which of the following statements is NOT true?

A. A discharged lead-acid cell for a long time can easily be charged
B. Lead-acid cells can be charged and discharged at the very high rate without damaging the plates.
C. A lead-acid cell has lesser ampere hour capacity than a nickel iron cell of the same capacity.
D. All of these

47. Rheostat and potentiometers are types of _____ resistors.

A. Film
B. Fixed
C. Variable
D. Wire wound

47. Rheostat and potentiometers are types of _____ resistors.

A. Film
B. Fixed
C. Variable
D. Wire wound

48. A step down transformer lowers

A. Voltage and amperage
B. Voltage and increase amperage
C. Amperage and increase voltage
D. Voltage and power

48. A step down transformer lowers

A. Voltage and amperage
B. Voltage and increase amperage
C. Amperage and increase voltage
D. Voltage and power

49. What is the feeder load of a feeder serving three squirrel cage induction motors having full load currents of 34, 27 and 12 A respectively?

A. 73 A
B. 81.50 A
C. 91.25 A
D. 58.40 A

49. What is the feeder load of a feeder serving three squirrel cage induction motors having full load currents of 34, 27 and 12 A respectively?

A. 73 A

B. 81.50 A

C. 91.25 A

D. 58.40 A

Load = $\sum$load + 25% of largest load

Load = 34 + 27 +12 (0.25 x 34)

Load = 81.5 A

50. Capacitor commonly used in circuits that have a combination of DC and AC voltages.

A. Ceramic capacitor
B. Plastic capacitor
C. Oil-filled capacitor
D. Electrolytic capacitor

50. Capacitor commonly used in circuits that have a combination of DC and AC voltages.

A. Ceramic capacitor
B. Plastic capacitor
C. Oil-filled capacitor
D. Electrolytic capacitor

51. For receptacle outlets, each single multiple receptacle on the strap shall be considered not less than _____.

A. 200 VA
B. 180 VA
C. 600 VA
D. 150 VA

51. For receptacle outlets, each single or each multiple receptacle on one strap shall be considered not less than _____.

A. 200 VA
B. 180 VA
C. 600 VA
D. 150 VA

52. Which of the following statements is NOT true?

A. Conductor in raceways shall be continuous between outlets
B. Metal raceways, boxes, cabinets and fittings shall be grounded
C. Metal on non-metallic raceways shall be continuous between cabinets, boxes or other enclosures
D. Raceways shall be used as a means of support for other raceways

52. Which of the following statements is NOT true?

A. Conductor in raceways shall be continuous between outlets
B. Metal raceways, boxes, cabinets and fittings shall be grounded
C. Metal on non-metallic raceways shall be continuous between cabinets, boxes or other enclosures
D. Raceways shall be used as a means of support for other raceways

53. Where no standard electrical equipment of the exact size or rating is available and the next larger size is neither available the next smaller size or rating maybe used provided a special permission is obtained from one of the following. Which one is this.

A. Barrio captain
B. Mayor
C. Electrical inspector
D. Fire chef

53. Where no standard electrical equipment of the exact size or rating is available and the next larger size is neither available the next smaller size or rating maybe used provided a special permission is obtained from one of the following. Which one is this.

A. Barrio captain
B. Mayor
C. Electrical inspector
D. Fire chef

54. Which on the following statement about overcurrent devices is NOT correct?

A. It shall be located where they will not be exposed to physical damage
B. It shall be readily accessible
C. It can be located inside clothes closets
D. In a multi-family dwelling, each occupant shall have ready access to all overcurrent device protecting his occupancy

54. Which on the following statement about overcurrent devices is NOT correct?

A. It shall be located where they will not be exposed to physical damage
B. It shall be readily accessible
C. It can be located inside clothes closets
D. In a multi-family dwelling, each occupant shall have ready access to all overcurrent device protecting his occupancy

55. A box with a blank cover which is inserted in one or more runs of raceway to facilitate pulling of the conductors.

A. Coupling box

B. Junction box

C. Terminal box

D. Pull box

55. A box with a blank cover which is inserted in one or more runs of raceway to facilitate pulling of the conductors.

A.Coupling box

B.Junction box

C.Terminal box

D.Pull box

56. The neutral conductor from the neutral point of a generator to its connection point to the grounding impedance shall be.

A. Left opened
B. Grounded
C. Fully insulated
D. Non of these

56. The neutral conductor from the neutral point of a generator to its connection point to the grounding impedance shall be.

A. Left opened
B. Grounded
C. Fully insulated
D. Non of these

57. What is the total number of the mechanical degrees that a PVC conduit run maybe bent between pull points (pull boxes, junction boxes or utility boxes)?

A. 360°
B. 180°
C. 120°
D. 270°

57. What is the total number of the mechanical degrees that a PVC conduit run maybe bent between pull points (pull boxes, junction boxes or utility boxes)?

A. 360°

B. 180°

C. 120°

D. 270°

58. A two wire DC system supplying premises wiring shall be grounded EXCEPT.

A. A system equipped with a ground detector and supplying only industrial equipment limited areas
B. A system operating at 50 V or less between conductors
C. A rectifier device DC system supplied from an AC system
D. All of these

58. A two wire DC system supplying premises wiring shall be grounded EXCEPT.

A. A system equipped with a ground detector and supplying only industrial equipment limited areas
B. A system operating at 50 V or less between conductors
C. A rectifier device DC system supplied from an AC system
D. All of these

59. For ranges of 8.75 kw of more in rating, the minimum branch circuit required shall be.

A. 20 A
B. 40 A
C. 30 A
D. 50 A

59. For ranges of 8.75 kw of more in rating, the minimum branch circuit required shall be.

A. 20 A

B. 40 A

C. 30 A

D. 50 A

60. Metal raceways, enclosures, frames and other non-current carrying metal parts of electric equipment shall be kept at least a certain distance from lightning rod conductors. What is this distance?

A. 1,900 mm
B. 2,000 mm
C. 1,800 mm
D. 1,500 mm

60. Metal raceways, enclosures, frames and other non-current carrying metal parts of electric equipment shall be kept at least a certain distance from lightning rod conductors. What is this distance?

A. 1,900 mm
B. 2,000 mm
C. 1,800 mm
D. 1,500 mm

61. Where extensive metal on or on buildings may become energized and is subject to personal contact _____ will provided additional safety.

A. Bonding
B. Suitable ground detectors
C. Suitable arresters
D. Adequate bonding and grounding

61. Where extensive metal on or on buildings may become energized and is subject to personal contact _____ will provided additional safety.

A. Bonding
B. Suitable ground detectors
C. Suitable arresters
D. Adequate bonding and grounding

62. Instruments, pilot lights, potential transformers and other switchboard devices with potential coils shall be supplied by a circuit that is protected by a standard overcurrent device rated up to_____.

A. 20 A
B. 30 A
C. 10 A
D. 15 A

62. Instruments, pilot lights, potential transformers and other switchboard devices with potential coils shall be supplied by a circuit that is protected by a standard overcurrent device rated up to_____.

A. 20 A
B. 30 A
C. 10 A
D. 15 A

63. A wire or other mechanical member having one end secured and the other end fastened to a pole maintained under tension.

A. Lug
B. Tie wire
C. Cable rack
D. Guy

63. A wire or other mechanical member having one end secured and the other end fastened to a pole maintained under tension.

A. Lug
B. Tie wire
C. Cable rack
D. Guy

64. The branch circuit rating shall NOT be less than ____of the non-continuous load.

A. 125%

B. 80%

C. 100%

D. 115%

64. The branch circuit rating shall NOT be less than ____of the non-continuous load.

A. 125%

B. 80%

C. 100%

D. 115%

65. What is the maximum operating temperature of type THWN conductor?

A. 75°C

B. 60°C

C. 90°C

D. 110°C

65. What is the maximum operating temperature of type THWN conductor?

A. 75°C

B. 60°C

C. 90°C

D. 110°C

66. A ground metal enclosure containing a factory mounted, bare or insulated conductors, which are usually copper, or aluminum bars, rods or tubes.

A. Cable tray
B. Busway
C. Wireway
D. Cablebus

66. A ground metal enclosure containing a factory mounted, bare or insulated conductors, which are usually copper, or aluminum bars, rods or tubes.

A. Cable tray
B. Busway
C. Wireway
D. Cablebus

67. Below are the factors that affect the ampacity of an electrical conductor EXPECT one. Which one is this?

A. Insulation resistance

B. Length of the conductor

C. Conductor material

D. Cross-sectional area of the conductor

67. Below are the factors that affect the ampacity of an electrical conductor EXPECT one. Which one is this?

A. Insulation resistance

B. Length of the conductor

C. Conductor material

D. Cross-sectional area of the conductor

68. Mineral insulated metal sheathed cable shall be permitted in any of the following installations EXCEPT one. Which one is this?

A. For control circuits
B. Where exposed to oil and gasoline
C. For feeder circuits
D. Where exposed to corrosive atmosphere

68. Mineral insulated metal sheathed cable shall be permitted in any of the following installations EXCEPT one. Which one is this?

A. For control circuits
B. Where exposed to oil and gasoline
C. For feeder circuits
D. Where exposed to corrosive atmosphere

69. Where flexible tubing is used to encase the conductors, the tubing shall extend from the last insulating support to no less than _____ inside the nonmetallic boxes.

A. 8 mm
B. 10 mm
C. 5.5 mm
D. 6.4 mm

69. Where flexible tubing is used to encase the conductors, the tubing shall extend from the last insulating support to no less than _____ inside the nonmetallic boxes.

A. 8 mm

B. 10 mm

C. 5.5 mm

D. 6.4 mm

70. An insulating element , generally of elongated form with transverse holes of slots for the purpose of insulating two section of a guy or provide insulation between structure and anchor.

A. Guy insulator
B. Pin insulator
C. Strain insulator
D. Spool insulator

70. An insulating element , generally of elongated form with transverse holes of slots for the purpose of insulating two section of a guy or provide insulation between structure and anchor.

A. Guy insulator
B. Pin insulator
C. Strain insulator
D. Spool insulator

71. Corner joints on a gutter shall be made tight, where the assembly is held together by rivets or bolts. The spacing shall NOT be more than____.

A. 250 mm

B. 100 mm

C. 300 mm

D. 200 mm

71. Corner joints on a gutter shall be made tight, where the assembly is held together by rivets or bolts. The spacing shall NOT be more than____.

A. 250 mm

B. 100 mm

C. 300 mm

D. 200 mm

72. For barber shops and beauty parlors, the general lighting load per square meter of area shall be

A. 24 watts

B. 28 watts

C. 16 watts

D. 8 watts

72. For barber shops and beauty parlors, the general lighting load per square meter of area shall be

A. 24 watts

B. 28 watts

C. 16 watts

D. 8 watts

73. The sum of the cross sectional area of all conductors in a wireway must not exceed ____ percent of the cross sectional area of the wireway.

A. 15%

B. 20%

C. 10%

D. 25%

73. The sum of the cross sectional area of all conductors in a wireway must not exceed _____ percent of the cross sectional area of the wireway.

A. 15%

B. 20%

C. 10%

D. 25%

74. In any watercraft, receptacle outlets operating at_____ volts or more shall have a grounding pole.

A. 100 V

B. 120 V

C. 50 V

D. 60 V

74. In any watercraft, receptacle outlets operating at_____ volts or more shall have a grounding pole.

A. 100 V

B. 120 V

C. 50 V

D. 60 V

75. For 25 to 50 A circuits, the minimum insulation resistance is.

A. 100,000 ohms
B. 250,000 ohms
C. 50,000 ohms
D. 25,000 ohms

75. For 25 to 50 A circuits, the minimum insulation resistance is.

A. 100,000 ohms

B. 250,000 ohms

C. 50,000 ohms

D. 25,000 ohms

76. The minimum size of wire used in electrical wiring is the former # 14 AWG. Under the metric standard in the PEC, what is the equivalent size of this wire?

A. 5.5 mm^2

B. 1.6 mm^2

C. 3.5 mm^2

D. 2.0 mm^2

76. The minimum size of wire used in electrical wiring is the former # 14 AWG. Under the metric standard in the PEC, what is the equivalent size of this wire?

A. 5.5 mm^2

B. 1.6 mm^2

C. 3.5 mm^2

D. 2.0 mm^2

77. For circuits over 600 V nominal, conductors shall NOT be bent to radius less than _____ times the diameter for shielded or lead covered conductors.

A. 6

B. 8

C. 10

D. 12

77. For circuits over 600 V nominal, conductors shall NOT be bent to radius less than _____ times the diameter for shielded or lead covered conductors.

A. 6

B. 8

C. 10

D. 12

78. What is the ampacity of a 5.5mm² TW copper conductor?

A. 35 A

B. 45 A

C. 40 A

D. 30 A

78. What is the ampacity of a 5.5mm² TW copper conductor?

A. 35 A

B. 45 A

C. 40 A

D. 30 A

79. Lighting fixtures shall be wired with a fixture flexible cord with a cross sectional area of NOT less than.

A. 0.50 mm^2

B. 2.00 mm^2

C. 1.25 mm^2

D. 0.75 mm^2

79. Lighting fixtures shall be wired with a fixture flexible cord with a cross sectional area of NOT less than.

A. 0.50 mm^2

B. 2.00 mm^2

C. 1.25 mm^2

D. 0.75 mm^2

80. Type MI cables shall be securely supported at intervals NOT exceeding_____.

A. 1,800 mm

B. 2,000 mm

C. 1,500 mm

D. 2,500 mm

80. Type MI cables shall be securely supported at intervals NOT exceeding_____.

A. 1,800 mm

B. 2,000 mm

C. 1,500 mm

D. 2,500 mm

81. If the setting of overcurrent device in a circuit ahead of a equipment is 60 A. What is the minimum required grounding conductor using copper?

A. 5.5 mm^2

B. 8.0 mm^2

C. 14 mm^2

D. Non of these

81. If the setting of overcurrent device in a circuit ahead of a equipment is 60 A. What is the minimum required grounding conductor using copper?

A. 5.5 mm^2

B. 8.0 mm^2

C. 14 mm^2

D. Non of these

82. The total load on overcurrent device located in a panel board shall NOT exceed a certain percentage of its rating. What is this percentage?

A. 100%

B. 90%

C. 80%

D. 125%

82. The total load on overcurrent device located in a panel board shall NOT exceed a certain percentage of its rating. What is this percentage?

A. 100%

B. 90%

C. 80%

D. 125%

83. For show window lighting, a load of not less than _____ volt amperes shall be included for each linear meter of show window.

A. 500

B. 400

C. 600

D. 300

83. For show window lighting, a load of not less than _____ volt amperes shall be included for each linear meter of show window.

A. 500

B. 400

C. 600

D. 300

84. Liquid light flexible nonmetallic conduit shall be permitted to be used.

A. For direct burial
B. Where flexibility is required
C. In exposed or concealed locations
D. All of these

84. Liquid light flexible nonmetallic conduit shall be permitted to be used.

A. For direct burial

B. Where flexibility is required

C. In exposed or concealed locations

D. All of these

85. Flexible metal conduit must not be used in.

A. Wet locations
B. Hoistways
C. Storage battery room
D. All of these

85. Flexible metal conduit must not be used in.

A. Wet locations
B. Hoistways
C. Storage battery room
D. All of these

86. Circuit containing electric discharge lighting transformer exclusively shall NOT be rated in excess of_____.

A. 30 A

B. 20 A

C. 15 A

D. 40 A

86. Circuit containing electric discharge lighting transformer exclusively shall NOT be rated in excess of_____.

A. 30 A

B. 20 A

C. 15 A

D. 40 A

87. Conductors which run above the top level of the window shall be permitted to be less than 1,000 mm but in no case shall be less than.

A. 300 mm

B. 600 mm

C. 500 mm

D. 800 mm

87. Conductors which run above the top level of the window shall be permitted to be less than 1,000 mm but in no case shall be less than.

A. 300 mm
B. 600 mm
C. 500 mm
D. 800 mm

88. The conductor connecting the neutral point of the transformer or generator to the grounding impedance shall_____.

A. Not be permitted to be installed is a separate raceway
B. Be permitted to be installed in a separate raceway
C. Not be permitted to be installed inside a raceway
D. All of these

88. The conductor connecting the neutral point of the transformer or generator to the grounding impedance shall_____.

A. Not be permitted to be installed is a separate raceway
B. Be permitted to be installed in a separate raceway
C. Not be permitted to be installed inside a raceway
D. All of these

89. The use of surface non-metal raceway is NOT permitted in all those mentioned below EXCEPT one. Which one is this.?

A. Dry locations
B. Where subject to severe physical damage
C. Where the voltage is over 300 V
D. Where concealed

89. The use of surface non-metal raceway is NOT permitted in all those mentioned below EXCEPT one. Which one is this.?

A. Dry locations
B. Where subject to severe physical damage
C. Where the voltage is over 300 V
D. Where concealed

90. Hazardous location in which ignitable concentration of flammable gases of vapors can exist under normal operating conditions.

A. Class II, Division 1

B. Class II, Division 2

C. Class I, Division 1

D. Class II, Division 2

90. Hazardous location in which ignitable concentration of flammable gases of vapors can exist under normal operating conditions.

A. Class II, Division 1

B. Class II, Division 2

C. Class I, Division 1

D. Class II, Division 2

91. For underground feeder and branch circuits, what type of conductors shall be used?

A. Type USE
B. Type XHHW
C. Type MI
D. Type UF

91. For underground feeder and branch circuits, what type of conductors shall be used?

A. Type USE
B. Type XHHW
C. Type MI
D. Type UF

92. The maximum setting of the ground fault protection of equipment shall be____.

A. 1,500 A

B. 1,800 A

C. 1,400 A

D. 1,200 A

92. The maximum setting of the ground fault protection of equipment shall be____.

A. 1,500 A

B. 1,800 A

C. 1,400 A

D. 1,200 A

93. Switches are operated vertically rather than horizontally. The upward position of the handle shall mean.

A. Switch-on position
B. Switch-off position
C. Neutral position
D. Any position

93. Switches are operated vertically rather than horizontally. The upward position of the handle shall mean.

A. Switch-on position
B. Switch-off position
C. Neutral position
D. Any position

94. The grounding impedance for grounded neutral system shall be installed between the____.

A. System neutral and the current carrying conductors
B. Grounding electrode and system neutral
C. Grounding electrode and metal frame of generator
D. All of these

94. The grounding impedance for grounded neutral system shall be installed between the____.

A. System neutral and the current carrying conductors
B. Grounding electrode and system neutral
C. Grounding electrode and metal frame of generator
D. All of these

95. For installation consisting of not more than 2-wire branch circuits, the service disconnecting mains shall be rated NOT less than_____.

A. 20 A

B. 40 A

C. 30 A

D. 50 A

95. For installation consisting of not more than 2-wire branch circuits, the service disconnecting mains shall be rated NOT less than_____.

A. 20 A

B. 40 A

C. 30 A

D. 50 A

96. What is the lowest dielectric strength of transformer oil, which is acceptable to the PEC?

A. 20,000 volts

B. 22,000 volts

C. 25,000 volts

D. 17,500 volts

96. What is the lowest dielectric strength of transformer oil, which is acceptable to the PEC?

A. 20,000 volts

B. 22,000 volts

C. 25,000 volts

D. 17,500 volts

97. A conductor encircling a building and interconnecting all ground terminals.

A. Bonding
B. Interlink
C. Air terminal
D. Counterpoise

97. A conductor encircling a building and interconnecting all ground terminals.

A. Bonding
B. Interlink
C. Air terminal
D. Counterpoise

98. Wireways shall be supported at intervals NOT to exceed_____.

A. 1,500 mm
B. 2,000 mm
C. 1,200 mm
D. 1,800 mm

98. Wireways shall be supported at intervals NOT to exceed_____.

A. 1,500 mm
B. 2,000 mm
C. 1,200 mm
D. 1,800 mm

99. Flat conductor cable (FCC) system shall NOT be used in the location enumerated below EXCEPT one. Which one is this?

A. Locations where subject to corrosive vapors
B. Damp locations
C. Residential buildings
D. Outdoors

99. Flat conductor cable (FCC) system shall NOT be used in the location enumerated below EXCEPT one. Which one is this?

A. Locations where subject to corrosive vapors
B. Damp locations
C. Residential buildings
D. Outdoors

100. A dwelling unit having a floor area not more than 50 square meters shall be permitted to have a single 20-A, 2-wire branch circuit provided the total load shall NOT exceed _____.

A. 3,680 volt-amperes
B. 3,860 volt-amperes
C. 3,080 volt-amperes
D. 3,069 volt-amperes

100. A dwelling unit having a floor area not more than 50 square meters shall be permitted to have a single 20-A, 2-wire branch circuit provided the total load shall NOT exceed _____.

A. 3,680 volt-amperes
B. 3,860 volt-amperes
C. 3,080 volt-amperes
D. 3,069 volt-amperes

Question Bank 4

1.How much is the load current for a 100-W incandescent bulb connected to 120 V power line?

A. 1.2 A
B. 0.833 A
C. 8.33 A
D. 0.12 A

1.How much is the load current for a 100-W incandescent bulb connected to 120 V power line?

A. 1.2 A

B. 0.833 A

C. 8.33 A

D. 0.12 A

$P = EI$

$I = P/E$

$I = 100/120$

$I = 0.833\ A$

2. Electromotive force is measured by a____?

A. Voltmeter
B. Megger
C. Clamp ammeter
D. Galvanometer

2. Electromotive force is measured by a____?

A. Voltmeter
B. Megger
C. Clamp ammeter
D. Galvanometer

3. All switches that have been turned off before doing repair work on any electrical equipment, shall be_____.

A. Left as it is
B. Left with its cover open
C. Left with a note stating that the work is being done
D. Left with its cover closed and padlocked

3. All switches that have been turned off before doing repair work on any electrical equipment, shall be_____.

A. Left as it is
B. Left with its cover open
C. Left with a note stating that the work is being done
D. Left with its cover closed and padlocked

4. The power factor of a circuit is approximately 100% if the circuit load consist only of.

A. Motors
B. Incandescent lamp
C. Fluorescent lamp
D. Capacitors

4. The power factor of a circuit is approximately 100% if the circuit load consist only of.

A. Motors
B. Incandescent lamp
C. Fluorescent lamp
D. Capacitors

5. The internal resistance of a milliammeter should be very low in order to have.

A. A negligible effect on the circuit current
B. Maximum voltage drop across the meter
C. A current which will not damage the meter
D. All of these

5. The internal resistance of a milliammeter should be very low in order to have.

A. A negligible effect on the circuit current
B. Maximum voltage drop across the meter
C. A current which will not damage the meter
D. All of these

6. What is the approximate neutral current in a 4-wire system with phase A carrying 68 A, phase B carrying 88 A and phase C carrying 96 A?

A. 20 A
B. 30 A
C. 25 A
D. 15 A

6. What is the approximate neutral current in a 4-wire system with phase A carrying 68 A, phase B carrying 88 A and phase C carrying 96 A?

A. 20 A

B. 30 A

C. 25 A

D. 15 A

I = square root $I_1^2+I_2^2+I_3^2 - I_1I_2 - I_2I_3 - I_1I_3$

I = square root $(68)^2+(88)^2+(96)^2 - (68)(88) – (88)(96) – (68)(96)$

I_n = 24.97 A

7. What motor is best suited to drive small electric fans?

A. Universal motor
B. Shunt motor
C. Capacitor run motor
D. Resistance split-phase motor

7. What motor is best suited to drive small electric fans?

A. Universal motor
B. Shunt motor
C. Capacitor run motor
D. Resistance split-phase motor

8. One foot of a certain size of a nichrome wire has a resistance of 1.63 ohms. To make a heating element for a toaster that will use 5 A at 110 V, the number of feet of wire needed is approximately.

A. 17.9
B. 13.5
C. 8.2
D. 5.5

8. One foot of a certain size of a nichrome wire has a resistance of 1.63 ohms. To make a heating element for a toaster that will use 5 A at 110 V, the number of feet of wire needed is approximately.

A. 17.9

B. 13.5

C. 8.2

D. 5.5

$R = E/I$

$R = 110 / 5$

$R = 22$ ohms

Length = 22 ohms X 1 ft / 1.63 ohms

Length = 13. 5 ft.

9. The power way of measuring an unknown voltage with a multi – tester is to.

A. Start measuring at the lowest range of the meter
B. Start measuring at the mid range of the meter
C. Start measuring at the highest range
D. De-energized the circuit first

9. The power way of measuring an unknown voltage with a multi – tester is to.

A. Start measuring at the lowest range of the meter
B. Start measuring at the mid range of the meter
C. Start measuring at the highest range
D. De-energized the circuit first

10. Temperature coefficient of a conductor is defined as the.

A. Increase in resistance per degree absolute
B. Increase in a resistance per degree centigrade
C. Increase in resistance per ohm per degree absolute
D. None of these

10. Temperature coefficient of a conductor is defined as the.

A. Increase in resistance per degree absolute
B. Increase in a resistance per degree centigrade
C. Increase in resistance per ohm per degree absolute
D. None of these

11. What important data can be gathered by performing an open circuit test on transformers?

A. Rated power output
B. Resistance and reactance of windings
C. Core losses
D. Voltage and current ratios

11. What important data can be gathered by performing an open circuit test on transformers?

A. Rated power output
B. Resistance and reactance of windings
C. Core losses
D. Voltage and current ratios

12. How many kilowatts is equal to 200 joules per/second?

A. 0.2

B. 200

C. 0.02

D. 2

12. How many kilowatts is equal to 200 joules per/second?

A. 0.2

B. 200

C. 0.02

D. 2

P = 200j/s or 200 watts

P = 0.2 kw

13. A junction transistor has three terminals namely.

A. anode, cathode and triode
B. Emitter, base and collector
C. Base, receiver and collector
D. Positive, negative and ground

13. A junction transistor has three terminals namely.

A. anode, cathode and triode

B. Emitter, base and collector

C. Base, receiver and collector

D. Positive, negative and ground

14. Which of the following electric machine is equipped with slip rings?

A. DC motor or DC generator
B. Split-phase motor
C. AC generator
D. Repulsion type motor

14. Which of the following electric machine is equipped with slip rings?

A. DC motor or DC generator
B. Split-phase motor
C. AC generator
D. Repulsion type motor

15. The pointer or needle of an indicating instrument is usually made from.

A. Soft iron
B. Aluminum
C. Silver
D. Manganin

15. The pointer or needle of an indicating instrument is usually made from.

A. Soft iron
B. Aluminum
C. Silver
D. Manganin

16. A resistor when connected across a 24-V battery draws a current of 1 mA. What is the required resistance?

A. 24,000 ohms
B. 2,400 ohms
C. 24 ohms
D. 2.4 ohms

16. A resistor when connected across a 24-V battery draws a current of 1 mA. What is the required resistance?

A. 24,000 ohms
B. 2,400 ohms
C. 24 ohms
D. 2.4 ohms

$R = E / I$

$R = 24 / 0.001$

$R = 24{,}000$ ohms

17. A device use to remove the sharp burrs or rough edges is called_____?

A. Reamer
B. Threader
C. Hickey
D. Bender

17. A device use to remove the sharp burrs or rough edges is called_____?

A. Reamer
B. Threader
C. Hickey
D. Bender

18. A dry cell has internal resistance of 0.02 ohm and a terminal voltage of 1.5 V on open circuit. What will be its terminal voltage if a 0.1-ohm resistance is connected across its terminals?

A. 1.25 V
B. 1.20 V
C. 1.42 V
D. 1.15 V

18. A dry cell has internal resistance of 0.02 ohm and a terminal voltage of 1.5 V on open circuit. What will be its terminal voltage if a 0.1-ohm resistance is connected across its terminals?

A. 1.25 V
B. 1.20 V
C. 1.42 V
D. 1.15 V

$I = E / Rt$

$I = 1.5 / 0.02 + 0.1$

$I = 12.5$ A

$Er = IR$

$Er = 12.5 (0.1)$

$Er = 1.25$ V

19. An Instrument used to measure the speed of a motor or a generator.

A. Hydrometer
B. Thermometer
C. Tachometer
D. oscilloscope

19. An Instrument used to measure the speed of a motor or a generator.

A. Hydrometer
B. Thermometer
C. Tachometer
D. oscilloscope

20. The condition of Ohm’s law is that.

A. The temperature should remain constant
B. The temperature should vary
C. Ratio V / I should be constant
D. Current should be proportional to voltage

20. The condition of Ohm’s law is that.

A. The temperature should remain constant
B. The temperature should vary
C. Ratio V / I should be constant
D. Current should be proportional to voltage

21. A dry cell has an internal resistance of 0.02 ohm and open circuit voltage of 1.5 V. Calculate the power delivered to as resistor of 0.6 ohm resistance.

A. 3.5 watts
B. 2.4 watts
C. 2.0 watts
D. 3.8 watts

21. A dry cell has an internal resistance of 0.02 ohm and open circuit voltage of 1.5 V. Calculate the power delivered to as resistor of 0.6 ohm resistance.

A. 3.5 watts
B. 2.4 watts
C. 2.0 watts
D. 3.8 watts

$I = E / Rt$

$I = 1.5 / 0.02 + 0.6$

$I = 2.42$ A

$Pr = I^2R$

$Pr = (2.42)^2(0.6)$

$Pr = 3.5$ watts

22. Each component is a motor controller must be approved for which of the following.

A. The voltage to which it will be connected
B. The current it must be carry
C. The horsepower that it must control
D. All of these

22. Each component is a motor controller must be approved for which of the following.

A. The voltage to which it will be connected
B. The current it must be carry
C. The horsepower that it must control
D. All of these

23. A frequency of 60 Hz means that the cycle is repeated _____?

A. 60 times a minute
B. 60 times a hour
C. 60 times a second
D. Non of these

23. A frequency of 60 Hz means that the cycle is repeated _____?

A. 60 times a minute
B. 60 times a hour
C. 60 times a second
D. Non of these

24. Power factor is defined as the ratio of

A. Watts to volt-amperes
B. Volt-amperes to reactive
C. Volt-amperes to watts
D. Volt-amperes

24. Power factor is defined as the ratio of

A. Watts to volt-amperes
B. Volt-amperes to reactive
C. Volt-amperes to watts
D. Volt-amperes

25. What is the total KVA rating of 230 V, three-phase circuit supplied by a 20-A circuit.

A. 6.42 KVA
B. 8.55 KVA
C. 7.96 KVA
D. 4.60 KVA

25. What is the total KVA rating of 230 V, three-phase circuit supplied by a 20-A circuit.

A. 6.42 KVA
B. 8.55 KVA
C. 7.96 KVA
D. 4.60 KVA

S = (square root 3) E I
S = (square root 3) (230) (20)
S = 7967.43 VA or 7.96 KVA

26. The presence of current is only made known by the effect it produces. Three important effects are.

A. Heating, electric shock and generation
B. Heating, magnetic and electric shock
C. Generation, chemical and electric shock
D. Heating, magnetic and chemical

26. The presence of current is only made known by the effect it produces. Three important effects are.

A. Heating, electric shock and generation
B. Heating, magnetic and electric shock
C. Generation, chemical and electric shock
D. Heating, magnetic and chemical

27. A toaster takes 10 A from 120-volt line. The power used is.

A. 12 W
B. 1200 W
C. 130 W
D. Non of these

27. A toaster takes 10 A from 120-volt line. The power used is.

A. 12 W
B. 1200 W
C. 130 W
D. Non of these

$P = E\,I$

$P = 120\,(10)$

$P = 1200\ W$

28. Grease is a lubricant that is basically a combination of _____.

A. Oil and soap
B. Water and soap
C. Oil and water
D. Oil, water and soap

28. Grease is a lubricant that is basically a combination of _____.

A. Oil and soap
B. Water and soap
C. Oil and water
D. Oil, water and soap

29. Generally all AC electric motors operate on the principle of induction or_____.

A. Conduction
B. Repulsion
C. Capacitance
D. Magnetism

29. Generally all AC electric motors operate on the principle of induction or_____.

A. Conduction
B. Repulsion
C. Capacitance
D. Magnetism

30. In making a resistance test, remember that the resistance of a short circuit is.

A. Infinite
B. Approximately zero
C. Midway between high and low range
D. Slightly above the midrange

30. In making a resistance test, remember that the resistance of a short circuit is.

A. Infinite
B. Approximately zero
C. Midway between high and low range
D. Slightly above the midrange

31. For prevent from an electric shock, electrical ladders should have.

A. Plastic footings
B. Rubber footings
C. Wood footings
D. Metal footing

31. For prevent from an electric shock, electrical ladders should have.

A. Plastic footings
B. Rubber footings
C. Wood footings
D. Metal footing

32. Which of the following is the best advantage of a DC motor over an AC motor

A. It is easier to reverse its speed
B. It has a higher speed rating
C. It has a better speed control
D. All of these

32. Which of the following is the best advantage of a DC motor over an AC motor

A. It is easier to reverse its speed
B. It has a higher speed rating
C. It has a better speed control
D. All of these

33. Which of the following switches is the same as three-way switch?

A. Single-pole double throw switch
B. Double-pole single throw switch
C. Single-pole single throw switch
D. Double-pole double throw switch

33. Which of the following switches is the same as three-way switch?

A. Single-pole double throw switch
B. Double-pole single throw switch
C. Single-pole single throw switch
D. Double-pole double throw switch

34. A synchronous motor when under-excited acts like _____?

A. A resistor
B. An indicator
C. A capacitor
D. All of these

34. A synchronous motor when under-excited acts like _____?

A. A resistor
B. An indicator
C. A capacitor
D. All of these

35. Which of the following statements describe a synchronous motor?

A. It is not self-starting
B. It requires both AC & DC supplies
C. It is used for power factor improvement
D. All of these

35. Which of the following statements describe a synchronous motor?

A. It is not self-starting
B. It requires both AC & DC supplies
C. It is used for power factor improvement
D. All of these

36. Which of the following motors produce lagging power factor?

A. Induction motor
B. Series motor
C. Compound motors
D. Synchronous motors

36. Which of the following motors produce lagging power factor?

A. Induction motor
B. Series motor
C. Compound motors
D. Synchronous motors

37. Electrical symbol represented by a circle with a plus sign inside it.

A. Push button
B. Bell
C. Riser down
D. Pull box

37. Electrical symbol represented by a circle with a plus sign inside it.

A. Push button
B. Bell
C. Riser down
D. Pull box

38. To control a lamp from five different places, an electrician would install the following.

A. Three 4-way and two 2-way switches
B. Two 3-way and three 4-way switches
C. Four 3-way and 0ne 4-way switches
D. Three 3-way and two 4-way switches

38. To control a lamp from five different places, an electrician would install the following.

A. Three 4-way and two 2-way switches
B. Two 3-way and three 4-way switches
C. Four 3-way and 0ne 4-way switches
D. Three 3-way and two 4-way switches

39. A single-phase motor is taking 20 A from a 400 V supply at 0.75 lagging power factor. What is the power taken?

A. 4,000 W
B. 6,000 W
C. 8,000 W
D. 5,000 W

39. A single-phase motor is taking 20 A from a 400 V supply at 0.75 lagging power factor. What is the power taken?

A. 4,000 W
B. 6,000 W
C. 8,000 W
D. 5,000 W

$P = EI\ pf$

$P = 400\ (20)(0.75)$

$P = 6{,}000\ W$

40. Calculate the current drawn by a 100-W, 110 V incandescent lamp?

A. 0.91 A
B. 1.21 A
C. 1.10 A
D. 0.89 A

40. Calculate the current drawn by a 100-W, 110 V incandescent lamp?

A. 0.91 A
B. 1.21 A
C. 1.10 A
D. 0.89 A

$P = E\ I$

$I = P / E$

$P = 100 / 110$

$P = 0.91\ A$

41. What is in brief, the basis of operation of a 3-pahse induction motor?

A. Motor is started
B. Motor is excited
C. Magnetic field is shorted
D. Revolving magnetic field is produced when a 3-phase stator winding is fed from a 3-phase supply

41. What is in brief, the basis of operation of a 3-pahse induction motor?

A. Motor is started
B. Motor is excited
C. Magnetic field is shorted
D. Revolving magnetic field is produced when a 3-phase stator winding is fed from a 3-phase supply

42. The device used to attenuate specific signals is the.

A. Splitter
B. Drop tap
C. Line tap off
D. Trap

42. The device used to attenuate specific signals is the.

A. Splitter
B. Drop tap
C. Line tap off
D. Trap

43. A small tool with a tapered drill point use to make a pilot hole for wood screw mounting.

A. Screw driver
B. Center punch
C. Puller
D. Gimlet

43. A small tool with a tapered drill point use to make a pilot hole for wood screw mounting.

A. Screw driver
B. Center punch
C. Puller
D. Gimlet

44. How much is the resistance of a 600 W, 120 V toaster?

A. 0.2 ohm
B. 5 ohms
C. 20 ohms
D. 24 ohms

44. How much is the resistance of a 600 W, 120 V toaster?

A. 0.2 ohm
B. 5 ohms
C. 20 ohms
D. 24 ohms

$P = E^2 / R$

$R = E^2 / P$

$R = (120)^2 / 600$

$R = 24$ ohms

45. To protect battery terminals from corroding, they should be covered with _____?

A. Grease
B. Electrical tape
C. Motor oil
D. White lead

45. To protect battery terminals from corroding, they should be covered with _____?

A. Grease
B. Electrical tape
C. Motor oil
D. White lead

46. The insulation resistance of the winding of an electric motor is measured by.

A. Ammeter
B. Galvanometer
C. Megohmmeter
D. voltmeter

46. The insulation resistance of the winding of an electric motor is measured by.

A. Ammeter
B. Galvanometer
C. Megohmmeter
D. voltmeter

47. A synchronous converter is used to change_____.

A. Speed
B. Frequency
C. AC voltage to DC voltage and vice-versa
D. Mechanical energy to electrical energy

47. A synchronous converter is used to change_____.

A. Speed
B. Frequency
C. AC voltage to DC voltage and vice-versa
D. Mechanical energy to electrical energy

48. The direction of rotation a three phase motor can be reversed by.

A. Switch any two of the three leads
B. Dismantling the motor and switching two leads
C. Switching all three leads
D. Non of these

48. The direction of rotation a three phase motor can be reversed by.

A. Switch any two of the three leads
B. Dismantling the motor and switching two leads
C. Switching all three leads
D. Non of these

49. The least efficient lighting source is the.

A. Metal halide
B. Fluorescent
C. Mercury
D. Incandescent

49. The least efficient lighting source is the.

A. Metal halide
B. Fluorescent
C. Mercury
D. Incandescent

50. The rating of storage battery the delivers 15 amps for 12 hours is _____?

A. 180 Ah
B. 270 Ah
C. 150 Ah
D. 360 Ah

50. The rating of storage battery the delivers 15 amps for 12 hours is _____?

A. 180 Ah
B. 270 Ah
C. 150 Ah
D. 360 Ah

Rating = I x time
Rating = (15)(12)
Rating = 180 Ah

51. A short length of a conductor used to make a connection between terminals or around a break in a circuit.

A. Jumper
B. Guy
C. Bonding wire
D. Tie wire

51. A short length of a conductor used to make a connection between terminals or around a break in a circuit.

A. Jumper
B. Guy
C. Bonding wire
D. Tie wire

52. The surface nonmetallic raceway may NOT be used in the following location EXCEPT one. Which one is this.

A. In dry location
B. Where concealed
C. Where subject to severe physical damage
D. In hoistway

52. The surface nonmetallic raceway may NOT be used in the following location EXCEPT one. Which one is this.

A. In dry location
B. Where concealed
C. Where subject to severe physical damage
D. In hoistway

53. A fabricated assembly of insulated conductors in a flexible metallic enclosure.

A. Type MI
B. Type USE
C. Type UF
D. Type AC

53. A fabricated assembly of insulated conductors in a flexible metallic enclosure.

A. Type MI
B. Type USE
C. Type UF
D. Type AC

54. Fixture wires shall NOT be smaller than _____.

A. 0.5 mm^2
B. 1.25 mm^2
C. 2.0 mm^2
D. 0.75 mm^2

54. Fixture wires shall NOT be smaller than _____.

A. 0.5 mm^2
B. 1.25 mm^2
C. 2.0 mm^2
D. 0.75 mm^2

55. Flat cable assemblies shall NOT be installed _____.

A. In hoistway
B. In any hazardous locations
C. Outdoors
D. All of these

55. Flat cable assemblies shall NOT be installed _____.

A. In hoistway
B. In any hazardous locations
C. Outdoors
D. All of these

56. For bare metal parts, busbars, etc of opposite polarity held free in air shall maintain a minimum spacing of _____ for voltages rated not over 250 V.

A. 10 mm
B. 20 mm
C. 16 mm
D. 19 mm

56. For bare metal parts, busbars, etc of opposite polarity held free in air shall maintain a minimum spacing of _____ for voltages rated not over 250 V.

A. 10 mm
B. 20 mm
C. 16 mm
D. 19 mm

57. For grounding electrode to which portable of mobile equipment system neutral impedance is connected, shall be isolated from the ground by at least a certain distance from any other system or equipment grounding electrode. What is this distance?

A. 4,000 mm
B. 6,000 mm
C. 5, 000 mm
D. 3,000 mm

57. For grounding electrode to which portable of mobile equipment system neutral impedance is connected, shall be isolated from the ground by at least a certain distance from any other system or equipment grounding electrode. What is this distance?

A. 4,000 mm
B. 6,000 mm
C. 5, 000 mm
D. 3,000 mm

58. Type IGS cable is using a dry kraft paper tape and an SF_6 gas. What do you mean by SF_6?

A. Sulfur fluoride

B. Sulfur hexafluoride

C. Sulfur ferrite

D. Non of these

58. Type IGS cable is using a dry kraft paper tape and an SF_6 gas. What do you mean by SF_6?

A. Sulfur fluoride

B. Sulfur hexafluoride

C. Sulfur ferrite

D. Non of these

59. Cables operated at over ____ shall be shielded.

A. 2,000 V
B. 1,000 V
C. 3,000 V
D. 2,500 V

59. Cables operated at over ____ shall be shielded.

A. 2,000 V
B. 1,000 V
C. 3,000 V
D. 2,500 V

60. Space heating cables shall be secured at intervals NOT exceeding _____.

A. 300 mm
B. 200 mm
C. 400 mm
D. 500 mm

60. Space heating cables shall be secured at intervals NOT exceeding _____.

A. 300 mm
B. 200 mm
C. 400 mm
D. 500 mm

61. A run conduit between outlets, between fittings, between outlet and fitting shall not contain more than the equivalent of _____ quarter bends.

A. 2
B. 4
C. 3
D. 5

61. A run conduit between outlets, between fittings, between outlet and fitting shall not contain more than the equivalent of _____ quarter bends.

A. 2

B. 4

C. 3

D. 5

62. The average distance between down conductors in a lighting protection system shall NOT exceed.

A. 30 m
B. 20 m
C. 15 m
D. 25 m

62. The average distance between down conductors in a lighting protection system shall NOT exceed.

A. 30 m
B. 20 m
C. 15 m
D. 25 m

63. A storage battery supplying emergency lighting an DC power shall maintain no less than 87.5% of full voltage at total load for a period of at least.

A. 1.5 hours
B. 2.5 hours
C. 2.0 hours
D. 1.0 hour

63. A storage battery supplying emergency lighting an DC power shall maintain no less than 87.5% of full voltage at total load for a period of at least.

A. 1.5 hours
B. 2.5 hours
C. 2.0 hours
D. 1.0 hour

64. A general term covering an assembly of assemblies of devices for the interruption control and metering of electric power.

A. Control system
B. Power system
C. Switchgear
D. Instrumentation

64. A general term covering an assembly of assemblies of devices for the interruption control and metering of electric power.

A. Control system
B. Power system
C. Switchgear
D. Instrumentation

65. Thermoplastic insulated fixture wires shall be durably marked on the surface at intervals NOT exceeding.

A. 900 mm
B. 500 mm
C. 1,000 mm
D. 600 mm

65. Thermoplastic insulated fixture wires shall be durably marked on the surface at intervals NOT exceeding.

A. 900 mm
B. 500 mm
C. 1,000 mm
D. 600 mm

66. What is the temperature rating of THW insulation?

A. 60° C
B. 85° C
C. 75° C
D. 90° C

66. What is the temperature rating of THW insulation?

A. 60° C
B. 85° C
C. 75° C
D. 90° C

67. The minimum size of type IGS cable shall be _____.

A. 100 mm^2
B. 125 mm^2
C. 150 mm^2
D. 200 mm^2

67. The minimum size of type IGS cable shall be _____.

A. 100 mm^2
B. 125 mm^2
C. 150 mm^2
D. 200 mm^2

68. This is single conductor of multi-conductor assembly provided with or without an overall covering, primary use for services.

A. Tray cable
B. Clad cable
C. Service entrance cable
D. Flat conductor cable

68. This is single conductor of multi-conductor assembly provided with or without an overall covering, primary use for services.

A. Tray cable
B. Clad cable
C. Service entrance cable
D. Flat conductor cable

69. Ground connection shall be made at approximately every other steel column around the perimeter of the building and shall NOT be more than _____ apart.

A. 18 m
B. 20 m
C. 16 m
D. 24 m

69. Ground connection shall be made at approximately every other steel column around the perimeter of the building and shall NOT be more than _____ apart.

A. 18 m
B. 20 m
C. 16 m
D. 24 m

70. Type AC cable shall not be permitted to be used _____.

A. In storage battery
B. On cranes or hoists
C. In motion pictures
D. All of these

70. Type AC cable shall not be permitted to be used _____.

A. In storage battery
B. On cranes or hoists
C. In motion pictures
D. All of these

71. Transformers that contain liquid that will burn shall be installed only in approved vaults and shall also comply with the following conditions EXCEPT one. Which one is this?

A. Ample ventilation shall be provided for the continuous removal of flammable gases
B. Vent openings shall lead to a safe locations outside the buildings
C. All vent ducts and opening shall be of sufficient areas to reliable explosion pressure within the vault.
D. There shall be a robust door between the vault and any non-hazardous location.

71. Transformers that contain liquid that will burn shall be installed only in approved vaults and shall also comply with the following conditions EXCEPT one. Which one is this?

A. Ample ventilation shall be provided for the continuous removal of flammable gases
B. Vent openings shall lead to a safe locations outside the buildings
C. All vent ducts and opening shall be of sufficient areas to reliable explosion pressure within the vault.
D. There shall be a robust door between the vault and any non-hazardous location.

72. An appliance which can easily be moved from one place to another in normal use.

A. Fixed appliance
B. Accessible appliance
C. Stationary appliance
D. Portable appliance

72. An appliance which can easily be moved from one place to another in normal use.

A. Fixed appliance
B. Accessible appliance
C. Stationary appliance
D. Portable appliance

73. Flat cable assemblies shall have conductors of _____ special stranded copper wires.

A. 2.0 mm^2
B. 3.5 mm^2
C. 5.5 mm^2
D. 8.0 mm^2

73. Flat cable assemblies shall have conductors of _____ special stranded copper wires.

A. 2.0 mm^2
B. 3.5 mm^2
C. 5.5 mm^2
D. 8.0 mm^2

74. What location do NOT allow the installation of PVC rigid conduits?

A. Hazardous locations
B. Corrosive locations
C. Wet locations
D. In concealed locations

74. What location do NOT allow the installation of PVC rigid conduits?

A. Hazardous locations
B. Corrosive locations
C. Wet locations
D. In concealed locations

75. Incandescent lamp fixtures shall be marked to indicate the allowable wattage of lamps. The markings shall be permanently installed in letters at least _____ high.

A. 6.0 mm
B. 6.4 mm
C. 6.3 mm
D. 6.5 mm

75. Incandescent lamp fixtures shall be marked to indicate the allowable wattage of lamps. The markings shall be permanently installed in letters at least _____ high.

A. 6.0 mm
B. 6.4 mm
C. 6.3 mm
D. 6.5 mm

76. For school buildings, the general lighting load is _____ VA per square meters.

A. 24
B. 28
C. 16
D. 8

76. For school buildings, the general lighting load is _____ VA per square meters.

A. 24
B. 28
C. 16
D. 8

77. The feeder demand factor for three kitchen equipment other than dwelling kitchen equipment shall be.

A. 100%
B. 90%
C. 70%
D. 80%

77. The feeder demand factor for three kitchen equipment other than dwelling kitchen equipment shall be.

A. 100%
B. 90%
C. 70%
D. 80%

78. No parts of cord connected fixtures, hanging fixtures or a zone measured _____ horizontally from a bathtub rim.

A. 900 mm
B. 1,000 mm
C. 800 mm
D. 700 mm

78. No parts of cord connected fixtures, hanging fixtures or a zone measured _____ horizontally from a bathtub rim.

A. 900 mm
B. 1,000 mm
C. 800 mm
D. 700 mm

79. To provide for small appliance load in a dwelling unit, the feeder should be computed at.

A. 2,400 watts
B. 3,000 watts
C. 1,500 watts
D. 3,600 watts

79. To provide for small appliance load in a dwelling unit, the feeder should be computed at.

A. 2,400 watts
B. 3,000 watts
C. 1,500 watts
D. 3,600 watts

80. Which one is used on conduits and are located inside and outside of the box.

A. Couplings
B. Bushing
C. Locknuts
D. Screws

80. Which one is used on conduits and are located inside and outside of the box.

A. Couplings
B. Bushing
C. Locknuts
D. Screws

81. The circuit conductors between the service entrance equipment or isolated generating plant and the branch circuit overload device or devices.

A. Overcurrent protector
B. Feeder
C. Motor controller
D. Disconnect switch

81. The circuit conductors between the service entrance equipment or isolated generating plant and the branch circuit overload device or devices.

A. Overcurrent protector
B. Feeder
C. Motor controller
D. Disconnect switch

82. Open wiring on insulators shall be permitted only for wiring system of ___ or less.

A. 150 V
B. 240 V
C. 300 V
D. 600 V

82. Open wiring on insulators shall be permitted only for wiring system of ___ or less.

A. 150 V
B. 240 V
C. 300 V
D. 600 V

83. Which of the following metal is the best conductor of electricity?

A. Steel
B. Iron
C. Aluminum
D. Copper

83. Which of the following metal is the best conductor of electricity?

A. Steel
B. Iron
C. Aluminum
D. Copper

84. The nearest ground terminal shall NOT be less than _____ from the foundation wall.

A. 760 mm
B. 800 mm
C. 550 mm
D. 600 mm

84. The nearest ground terminal shall NOT be less than _____ from the foundation wall.

A. 760 mm
B. 800 mm
C. 550 mm
D. 600 mm

85. Conductors shall be securely attached to the building using fasteners. Fasteners shall be spaced NOT more than.

A. 760 mm
B. 600 mm
C. 880 mm
D. 900 mm

85. Conductors shall be securely attached to the building using fasteners. Fasteners shall be spaced NOT more than.

A. 760 mm
B. 600 mm
C. 880 mm
D. 900 mm

86. The minimum diameter of air terminal used at the top of a heavy smoke or vent stacks shall be____, exclusive of the corrosion protection.

A. 10 mm
B. 15 mm
C. 13 mm
D. 20 mm

86. The minimum diameter of air terminal used at the top of a heavy smoke or vent stacks shall be____, exclusive of the corrosion protection.

A. 10 mm
B. 15 mm
C. 13 mm
D. 20 mm

87. In damp or wet locations, boxes and fittings should be properly placed or insulated to prevent.

A. Dust from entering the box or fitting
B. Water from entering the box or fitting
C. Wiring exposure
D. Grounding

87. In damp or wet locations, boxes and fittings should be properly placed or insulated to prevent.

A. Dust from entering the box or fitting
B. Water from entering the box or fitting
C. Wiring exposure
D. Grounding

88. Busbars shall be made from copper having a minimum conductivity of how many percent?

A. 100%
B. 96%
C. 98%
D. 97%

88. Busbars shall be made from copper having a minimum conductivity of how many percent?

A. 100%
B. 96%
C. 98%
D. 97%

89. Individual open conductors and cables other than service entrance cables shall NOT be installed within _____ of every grade level.

A. 3,100 mm
B. 2,500 mm
C. 3,700 mm
D. 3,000 mm

89. Individual open conductors and cables other than service entrance cables shall NOT be installed within _____ of every grade level.

A. 3,100 mm
B. 2,500 mm
C. 3,700 mm
D. 3,000 mm

90. Pipelines with impedance heating shall NOT operate at greater than _____.

A. 30 V
B. 24 V
C. 50 V
D. 100 V

90. Pipelines with impedance heating shall NOT operate at greater than _____.

A. 30 V
B. 24 V
C. 50 V
D. 100 V

91. Watercrafts switchboards shall be provided with a clear working space of at least _____ at the front.

A. 1,500 mm
B. 1,200 mm
C. 1,600 mm
D. 1,000 mm

91. Watercrafts switchboards shall be provided with a clear working space of at least _____ at the front.

A. 1,500 mm
B. 1,200 mm
C. 1,600 mm
D. 1,000 mm

92. An insulated grounded conductor of 14 mm^2 or smaller shall be identified by a continuous _____ outer finish along its entire length.

A. Green
B. Black
C. Green with yellow stripes
D. White or natural gray

92. An insulated grounded conductor of 14 mm^2 or smaller shall be identified by a continuous _____ outer finish along its entire length.

A. Green
B. Black
C. Green with yellow stripes
D. White or natural gray

93. Equipment having an open circuit voltage exceeding _____ shall NOT be installed in dwelling occupancies.

A. 500 V
B. 300 V
C. 250 V
D. 230 V

93. Equipment having an open circuit voltage exceeding _____ shall NOT be installed in dwelling occupancies.

A. 500 V
B. 300 V
C. 250 V
D. 230 V

94. Concealed knob and tube wiring conductors shall be rigidly supported on knob not more than a certain minimum distance apart. What is this distance?

A. 2,000 mm
B. 1,500 mm
C. 1,300 mm
D. 2,500 mm

94. Concealed knob and tube wiring conductors shall be rigidly supported on knob not more than a certain minimum distance apart. What is this distance?

A. 2,000 mm
B. 1,500 mm
C. 1,300 mm
D. 2,500 mm

95. The area within _____ horizontally from an aircraft power plant shall be classified hazardous under Class I, Division 2 location.

A. 1,200 mm
B. 1,500 mm
C. 1,800 mm
D. 2,000 mm

95. The area within _____ horizontally from an aircraft power plant shall be classified hazardous under Class I, Division 2 location.

A. 1,200 mm
B. 1,500 mm
C. 1,800 mm
D. 2,000 mm

96. If the duty cycle of a motor-generator arc welder is 100% the supply conductors shall NOT be less than _____ of its rated primary nameplate current.

A. 115%
B. 125%
C. 100%
D. 130%

96. If the duty cycle of a motor-generator arc welder is 100% the supply conductors shall NOT be less than _____ of its rated primary nameplate current.

A. 115%

B. 125%

C. 100%

D. 130%

97. For a motor starter to be in sight of the controlled motor, it must NOT be more than _____ meters away.

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

97. For a motor starter to be in sight of the controlled motor, it must NOT be more than _____ meters away.

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

98. Which of the following materials is used to support the conductor in the open wiring method?

A. Insulated wire stoppers
B. Insulated nails
C. Rosettes
D. Split knobs

98. Which of the following materials is used to support the conductor in the open wiring method?

A. Insulated wire stoppers
B. Insulated nails
C. Rosettes
D. Split knobs

99. Most wires used in residential house wiring are usually insulated by which of the following?

A. Asbestos
B. Cotton
C. Thermoplastic
D. Varnished cambric

99. Most wires used in residential house wiring are usually insulated by which of the following?

A. Asbestos
B. Cotton
C. Thermoplastic
D. Varnished cambric

100. Conductors supplying a heating unit shall be calculated at _____ percent times the heating load plus the blower motor.

A. 125 %
B. 100 %
C. 130 %
D. 115 %

100. Conductors supplying a heating unit shall be calculated at _____ percent times the heating load plus the blower motor.

A. 125 %
B. 100 %
C. 130 %
D. 115 %