

PEC

1. If the primary transformer is 480 volts and the secondary is 240/ 120 v, the wire on the _____ is larger.
a. tertiary b. secondary c. primary d. windings
2. If the voltage is doubled the ampacity of a conductor is.
a. increase b. decrease c. doubles d. remains the same
3. A Bathroom in a dwelling has a counter space of seven feet including the sink. How many receptacles are required to serve this area?
a. 1 b. 3 c. 4 d. none required
4. The minimum size service lateral to a branch circuit limited load is #____ copper.
a. 8 b. 10 c. 12 d. none of these
5. According to standard which of the following does not require a switch outlet.
a. walk through garage door b. walk through porch door
c. attic entrance d. drive through garage door
6. The highest current at rated voltage that a device is intended to interrupt under standard test condition is known as _____.
a. overload b. inverse time rated c. thermal protector d. interrupting rating
7. What is the demand factor for five household clothes dryers?
a. 70% b. 80% c. 50 % d. 100%
8. The minimum ampacity for a 120/240 v service entrance conductors is _____ ampere.
a. 20 b. 30 c. 60 d. 100
9. At least _____ inches free conductors shall be left at each outlet and switch point.
a. 4 b. 6 c. 8 d. 12
10. The code requires a minimum of _____ volt-amperes per square meter for lighting loads of schools.
a. 20 b. 24 c. 28 d. 16
11. For service entrance conductors, the minimum size of aluminum wires the code allows is _____.
a. 3.5 mm² b. 5.5 mm² c. 8.0 mm² d. 14 mm²
12. The maximum number of disconnects the code allows per service grouped in any one location is _____.
a. 4 b. 6 c. 8 d. 10
13. In general, switches shall be so wired that all switching is done in the _____ conductor.
a. grounded b. ungrounded c. both a and b d. neither a nor
14. Overcurrent protective devices shall be so selected and coordinated as to permit the circuit protective devices used to clear a fault without the occurrence of extensive damage to the electrical components of the circuit. This fault shall be assumed to be _____.
l. between any circuit conductor and the grounding conductor or enclosing metal

- raceway
- II. between two or more of the circuit conductors
- a. I only b. II only **c. both I and II** d. neither I nor II
15. Which of the following requires a moisture seal at all points of termination?
- a. underplaster extensions b. bare conductor feeders
c. **liquidtight flexible metal conduit** d. mineral-insulated cable
16. For a feeder supplying household cooking equipment and electric clothes dryers the maximum unbalanced load on the neutral conductor shall be considered as _____ of the load on the ungrounded conductors.
- a. 40% b. 50% **c. 70%** d. 80%
17. Dual-voltage motors that have a different locked-rotor kva per horsepower on the two voltages shall be marked with the code letter for the voltage giving the _____ locked-rotor kva per horsepower.
- a. highest** b. average c. lowest d. normal
18. Messenger supported wiring shall not be used _____.
- I. where subject to severe physical damage
II. in hoistways
- a. I only b. II only **c. both I and II** d. neither I nor II
19. Raceways on the outside of buildings shall be _____.
- a. watertight and arranged to drain **b. weatherproof and covered**
c. raintight and arranged to drain d. rainproof and guarded
20. Which of the following may not be used in damp or wet locations?
- a. AC armored cable b. EMT **c. open wiring** d. rigid steel conduit
21. The ampacity of a 125 mm² IGS cable is _____ amperes.
- a. 119** b. 168 c. 215 d. 255
22. Which of the following is the maximum allowable rating of a permanently connected appliance where the branch overcurrent device is used as the appliance disconnecting means?
- a. 1/8 hp** b. ¼ hp c. ½ hp d. 1 hp
23. Elevator traveling cables for operating _____ circuits shall contain nonmetallic fillers as necessary to maintain concentricity.
- I. signal II. control
- a. I only b. II only **c. both I and II** d. neither I nor II
24. How would you seal unused ko's in panels and boxes?
- a. cardboard b. duct seal c. tape **d. metal plugs and plates**
25. Hoistway is a _____ in which an elevator or dumbwaiter is designed to operate.
- a. shaftway b. hatchway c. well hole **d. all of these**
26. Where devices containing disconnecting means are mounted out of reach, suitable means shall be provided to operate the disconnecting means from the floor. Which of the following is permitted?

- a. devices cannot be mounted out of reach
 b. ladders
 c. sticks (hook)
 d. no method is permitted
27. _____ is defined as properly localizing a fault condition to restrict outages to the equipment affected, accomplishing by choice of selective fault protective devices.
 a. monitoring b. coordination c. choice selection d. fault device
28. Conductors for festoon lighting shall be of the ____ type.
 I. thermoplastic II. rubber covered III. shielded
 a. I only b. I or II only c. II or III only d. I, II, or III
29. _____ switches shall be used for capacitor switching.
 a. Isolation b. Group-operated c. Shunt d. High-voltage
30. The secondary circuits of wound-rotor AC motors, including conductors, controllers, resistors, etc. shall be considered as protected against overload by the _____.
 a. disconnect b. controller c. breaker d. motor-overload device
31. _____ plugs driven into holes in masonry, concrete, plaster, or similar materials shall not be used.
 a. metal b. plastic c. leather d. wooden
32. Where conductors are adjusted to compensate for voltage drop, equipment grounding conductors, where required, shall be adjusted proportionally according to _____.
 a. diameter b. cross section area c. circular mil area d. circumference
33. Service entrance cables, where subject to physical damages, shall be protected in which of the following?
 I. EMT II. IMC III. rigid metal conduit
 a. III only b. II and III c. I, II and III d. I and III
34. Underground cable installed under a building shall be in a _____ that is extended beyond the outside walls of the building.
 a. sleeve b. duct bank c. gutter d. raceway
35. _____ boxes shall not be used where conduits or connectors requiring the use of locknuts or bushings are to be connected to the side of the box.
 a. round b. shallow c. device d. gang
36. Lampholders installed over highly combustible material shall be of the _____ type.
 a. porcelain b. low smoke c. switched d. unswitched
37. When an outlet is removed from a cellular metal floor raceway, the sections of circuit conductors supplying the outlet shall be _____.
 a. taped b. dead-ended

- c. shorted together d. removed from the raceway
38. Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of _____.
a. hysteresis b. galvanic action c. specific gravity d. resistance
39. Class III locations are those that are hazardous because of _____.
a. the presence of combustible dust
b. over 2500 mm depth of water
c. flammable gases or vapors may be present in the air
d. the presence of easily ignitable fibers or flyings
40. The maximum number of quarter bends in one run of RMC and IMT is _____.
a. two b. four c. five d. none of these
41. Because aluminum is not a magnetic metal, there will be _____ present when aluminum conductors are grouped in a wireway.
a. no heat due to voltage b. no heating due to hysteresis
c. no induced currents d. none of these
42. The tool that is used to align vitrified tile conduit in multiple ducts is a _____.
a. mandrel b. manometer c. growler d. hickey
43. _____ is a system or circuit conductor that is intentionally grounded.
a. grounding conductor b. grounded conductor
c. neutral conductor d. grounding electrode conductor
44. Which of the following is best to fight electrical fires?
a. soda-acid fire extinguisher b. fine spray of water
c. foam fire extinguisher d. CO₂ fire extinguisher
45. Nichrome wire is usually used for _____.
a. heater coils b. motor field windings c. interpole windings d. light bulb filaments
46. The most common cause for a worker to lose balance and fall from a ladder is _____.
a. exerting a heavy pull on an object which gives suddenly
b. using a ladder that is too long
c. to have too much weight in his tool belt
d. slipping on the fiberglass rungs
47. Min headroom of a working space about service equipment, switchboard or motor control shall be _____ mm
a) 1000 b) 1500 c) 1900 d) 1700
48. For optional calculation in dwelling units, the first 10 kw shall be computed at 100% while the remainder is at _____.
a. 65 % b. 60 % c. 50 % d. 40 %
49. What is the maximum number of conductor's permitted in wireway's at any cross section, signal circuit or starter control wires are not included.
a. 25 conductors b. 30 conductors c. 40 conductors d. 50 conductors

50. Gutters shall be supported throughout their entire length at suitable intervals preferably not exceeding _____ mm
- a. 500 mm b. 1000 mm **c. 1500 mm** d. 2000 mm
51. In open wiring on insulators, support shall be installed on conductors within _____ mm from a tap or splices.
- a. 200 mm **b. 150 mm** c. 220 mm d. 180 mm
52. Heating cables in concrete floors shall not exceed _____ watts per linear meter of cable.
- a. 50 b. 44 c. 54 d. 60
53. A 20 amp rated branch circuit with #12 wire supplying a duplex receptacle can be loaded to a maximum of _____ amps.
- a. 12 b. 15 **c. 16** d. 20
54. Which of the following is an over-current device?
- I. circuit breaker II. thermal overload III. time-delay fuse
- a. I only b. I and II only **c. I, II and III**
55. A 20 amp rated branch circuit with a #12 wire supplying a fastened in place wall air conditioner can be loaded to a maximum of _____ amps.
- a. 10** b. 15 c. 16 d. 20
83. What position must a knife switch with fuse be mounted?
- a. horizontal **b. vertical** c. diagonal d. inclined position
84. The disconnecting means for motor circuits rated 600 volts or less shall have rating in terms of the full load current of;
- a. 110 percent **b. 115 percent** c. 125 percent d. 130 percent
85. A building or other structure serve shall be supplied by only one service drop EXCEPT for
- a. multiple occupancy building c. emergency electrical system
b. fire pumps **d. all of these**
86. Which of the following circuits shall NOT be grounded?
- a. 2-wire DC systems c. health care facilities
b. vehicle mounted generators d. all of these
87. There are situations where derivations from the code requirements are necessary. Before such deviations are made, there must be a written permission from one of the following entities. Which one is this?
- a. Board of Electrical engineering c. IIEE Code Committee
b. **Code Enforcing Authority** d. Philippine Regulation Board
88. The following are common splicing rules EXCEPT one. Which one is this?
- a. A splice must provide a path for the current to pass through
b. A joint must be mechanically as strong as the wire itself
c. All splices must be mechanically and electrically secured by means of a solder
d. Wires of the same size should be spliced together in line

89. Hazardous locations in which easily ignitable fibers or material producing combustible flying are handled, manufactured or used
- a. Class III, Division 1
 - b. Class IV, Division 2
 - c. Class I, Division 1
 - d. Class I, Division 2
90. Which of the following statements is NOT true?
- a. Electrical equipment and wiring not mentioned in the code shall require a special permission prior to installation
 - b. Extended use of temporary installation shall not require a new approved electrical permit
 - c. An application of inspection shall be filed with the government agency concerned before preliminary and or final inspection is done
 - d. A copy of the electrical permit shall be posted or kept at the job site at all times, until the approval of the work have been done
91. Below are the factors that affect the ampacity of an electrical conductor EXCEPT one. Which one is this.
- a. Insulation resistance
 - b. Length of the conductor
 - c. Conductor material
 - d. Cross-sectional area of the conductor
92. For circuit over 600 V nominal, conductors shall NOT be bent to a radius less than _____ times the diameter for shielded or lead covered conductors.
- a. 6
 - b. 8
 - c. 10
 - d. 12
93. Which of the following statements 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 in safety box with padlock
 - d. In a multi-dwelling, each occupant shall have ready access to a overcurrent device protecting his occupancy
94. What is the total number of mechanical degrees that a conduit run maybe bent between pull points (pull boxes, junction boxes or utility boxes)?
- a. 360 degrees
 - b. 180 degrees
 - c. 120 degrees
 - d. 270 degrees
95. For barber shop and beauty parlors, the general lighting load per square meter of area shall be
- a. 24 VA
 - b. 28 VA
 - c. 16 VA
 - d. 8 VA
96. An insulating element, generally of elongated form with transverse holes or slots for the purpose of insulating two sections of a guy or provide insulation between structure and anchor.
- a. guy insulator
 - b. pin insulator
 - c. strain insulator
 - d. spool insulator
108. A single receptacle on an individual branch circuit shall have a MINIMUM rating of what percentage of the branch circuit's rating?
- A. 50
 - B. 80
 - C. 100
 - D. 125
109. The branch circuit breaker device shall protect all _____.

A. appliances B. conductors and devices C. branch circuit loads D. fittings

112. What is the MINIMUM feeder load to be used for each 2-wire, small-appliance branch circuit?

A. 180 VA per outlet B. 180 VA per receptacle C. 1,500 VA D. 1.800VA

113. Electrical continuity at service equipment shall be assured by all of the following EXCEPT _____.

- A. threaded metal couplings made up wrench tight
- B. threadless metal couplings for rigid metal conduit using standard locknuts and bushings
- C. threadless metal couplings for electrical metallic tubing using bonding locknuts and bushings
- D. bonding of the service equipment to the grounded service conductor

114. Coatings on which of the following shall be removed at threads, contact points, and contact surfaces or be connected by means of fittings so designed as to make such removal unnecessary in bonding other enclosures for grounding?

A. Copper B. Zinc C. Aluminum D. Enamel

116. A personnel protection device that de-energizes a circuit when the current to ground exceeds a predetermined value less than required to operate the supply circuit overcurrent protective device is called a _____.

A. circuit breaker B. fuse C. ground-fault interrupter D. limit switch

117. Which of the following colors indicates an equipment grounding conductor in a flexible cord?

A. Gray B. White C. Green with a red stripe D. Green with a yellow stripe

118. The effective grounding path to ground from circuits, equipment and metal equipment enclosures shall NOT _____.

- A. be permanent and continuous
- B. have the capacity to conduct safely any fault currents to ground
- C. have sufficiently low impedance to limit the voltage to ground
- D. use the earth as the sole equipment-grounding conductor

119. Use of UF cable is permitted _____.

- A. for interior wiring in wet locations
- B. in service entrance conductors
- C. in theaters
- D. where embedded in poured concrete

122. When combinations of conductors enter a box, which conductor size shall be used when utilizing the volume deductions permitted for fittings and devices?

A. Smallest B. Average C. Largest D. Fixture wire

128. The calculated value for a motor branch-circuit short-circuit protective device does not correspond to a standard size. The rating of the device shall be _____.

- A. decreased to the next lower standard size
- B. custom made to meet the rating
- C. increased to the next higher standard size
- D. increased by installing larger overloads

130. After normal power fails, what is the MAXIMUM delay permitted in a legally required emergency standby system before emergency power is available?
A. 30 seconds B. 60 seconds **C. 2 minutes** D. 6 minutes
131. What is the MAXIMUM permitted rating on branch circuits supplying signs or outline lighting systems?
A. 15 amps **B. 20 amps** C. 25 amps D. 30 amps
132. Which of the following types of power supplies in a fire alarm system should be supervised?
A. The neutral of a three-, four-, or five-wire AC or DC supply source
B. Central-station power supply faults that are easily recognized by the operator
C. The output of an engine-driven generator that is part of the secondary power supply (tested weekly)
D. A power supply that serves as the primary (main) supply source
137. When running low voltage cables in a ceiling that is being used for air handling, what type of cable should be installed?
A. fiber-optic cable B. shielded cable C. PVC-jacketed cable **D. plenum-rated cable**
138. Which of the following colors should NOT be used for current-carrying wires?
A. red B. black **C. green** D. white
139. Which of the following types of conductors may be used as an overhead feeder to a garage?
A. THHN **B. THWN** C. MTW D. UF
142. A ground connection should be made:
a) **before the current carrying wire is connected.**
b) after the current carrying wire is connected.
c) only if power may be accidentally interrupted.
d) only when an extension cord is used.
143. The connection diagram of a control panel being wired by you shows connections you are sure are incorrect. How will you proceed?
a. Report the error to your supervisor and continue with other jobs.
b. Make your corrections for possible notations later on.
c. Hold the connection job until confirmed by Engineering
d. Make the connections in accordance with the diagram for possible change later on.
146. Transformer cores are laminated for the purpose of
a. **reducing eddy-current losses** c. reducing magnetic reluctance
b. reducing hysteresis losses d. reducing flux density
150. A lubricant to make pulling of wires or cables through the conduit easier is
a. grease b. resin **c. talc** d. iron fillings
151. Give an example of an electrical conductor
a. brass b. asbestos c. slate d. latex
157. The service disconnecting means shall be installed _____.
I. outside a building II inside a building III. at the meter
a. I only **b. II only** c. III only d. either I or II

158. All wiring shall be so installed that, when completed, the system will be free of _____.
a. open circuits b. resistance **c. short circuits** d. impedance
165. In a 3Ø Y-Y transformer connection, neutral is fundamental to _____.
a. Suppression of Harmonics
b. Passage of unbalanced current due to unbalanced load
c. Provision of dual electric service
d. Balancing the phase voltage with respect to line voltage
e. Both a & b
166. Circuit measurement is used for which of the following purposes?
a. To find the weight of a circuit b. To increase the power used in a circuit
c. To discover the length and width of a circuit d. **To determine the reason a circuit is not functioning properly**
167. An in-circuit meter is used for which of the following purposes?
a. To reduce circuit losses b. **To monitor circuit operation**
c. To control power to a circuit d. To prevent circuit overload conditions
168. What is meant by the term "meter damping"?
a. Moistening the felt pads b. **Smoothing the oscillations of the pointer**
c. Preventing excessive current through the coil d. Compensating for electromagnetic induced interference
172. A fuse voltage rating has which of the following definitions?
a. **The maximum voltage that can exist in a circuit without causing the circuit to overheat**
b. The maximum voltage that can exist in a circuit if there is a direct short
c. The maximum voltage across a fuse that will not cause the fuse to open
d. The maximum voltage across a fuse that will not jump the open fuse
172. Which of the following is a safety precaution to be observed when a fuse is checked?
a. Turn the power off and discharge the circuit before the fuse is removed
b. When you check a fuse with an ohmmeter, be careful to avoid short circuits
c. When you use a voltmeter to check a low current fuse, be careful to avoid opening the fuse by excessive current from the voltmeter
d. All of the above
173. Which of the following is NOT a type of trip element for a circuit breaker?
a. Thermal b. Magnetic **c. Mechanical** d. Thermal-magnetic
174. A circuit breaker that will trip even if the operating mechanism is held ON is known as what type of circuit breaker?
a. Standard b. Emergency **c. Trip free** d. Nontrip free
179. Designation of switch voltage rating is based on which of the following voltage values?
a. Maximum b. Minimum **c. Nominal** d. Average
180. When you perform preventive maintenance on a switch, which of the following items should be checked?
a. The terminals for corrosion b. The physical condition of the switch

- c. The switch operation for smooth and correct operation
- d. All of the above

181. A solenoid is based upon which of the following principles?

- a. A bimetallic strip bends when it is heated
- b. A thermocouple produces a current when heated
- c. A coil attracts a soft iron core when current flows in the coil
- d. A soft iron core moving in a magnetic field creates a current

182. If a relay is hermetically sealed with an opaque cover, which of the following methods should be used to determine whether the relay is operating?

- a. Shake the relay and listen for loose parts
- b. Place your finger on the cover and feel the relay contact movement
- c. Remove the cover and visually observe the relay contacts when the relay is activated
- d. Activate the relay and observe whether a metal object is attracted by the magnetic field

183. If a relay is NOT operating properly, which of the following items need NOT be checked?

- a. The armature resistance
- b. The terminal leads
- c. The contact surfaces
- d. The contact spacing

184. Why has a "unit size" for conductors been established?

- a. To compare the size and resistance of one conductor with that of another
- b. To establish a uniform style for conductors
- c. To determine the requirements for conductors
- d. To ensure all conductors are interchangeable

185. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors _____ contained within the same raceway, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord.

- a. shall be
- b. should not be
- c. shall not be
- d. should be

186. The locknut-bushing and double-locknut types of contacts _____ be depended on for bonding purposes, but bonding jumpers with proper fittings or other approved means of bonding shall be used

- a. shall be
- b. should not be
- c. shall not be
- d. should be

187. The surge arresters and capacitors shall be installed in enclosures identified for _____.

- a. Class I, Division 1 locations.
- b. Class II, Division 1 locations.
- c. Class III, Division 1 locations.
- d. Class IV

188. A multiwire branch circuit shall not be permitted in.

- a. Class I, Division 1 locations.
- b. Class II, Division 1 locations.
- c. Class III, Division 1 locations.
- d. Class IV

189. One or more of the following four hazards may be present in a Class II location except for.

- a. An explosive mixture of air and dust in suspension
- b. Accumulation of dust that acts as a thermal blanket and interferes with the safe dissipation of heat from electrical equipment
- c. Accumulation of electrically conductive dust lodged between terminals that have a difference of potential, thereby causing tracking and glowing hot particles, short-circuits, or ground faults that may ignite dust accumulated in the vicinity
- d. Deposits of dust that could be exploded by arcs or sparks.

190. Transformers and capacitors containing a liquid that will burn shall be installed only in_____.
a. Pad **b. vault** c. post d. mast

191. No transformer or capacitor shall be installed in a location where dust from
I. magnesium II. Aluminum III.aluminum bronze powders,
or other metals of similarly hazardous characteristics may be present.
a. I only b. II and III **c. I, II, III** d. III

192. Dry-type transformers shall be installed in vaults or shall have their windings and terminal connections enclosed in tight metal housings without ventilating or other openings and shall operate at not over.
a. **600 volts, nominal** b. 460 volts, nominal
c. 4.16 Kilo volts, nominal d. 13.8 Kilo volts, nominal

193. The size of the supply conductor shall be such as to have an ampacity not less than _____ percent of the full-load current rating of all resistance heating loads plus _____ percent of the full-load current rating of the highest rated motor plus the sum of the full-load current ratings of all other connected motors and apparatus based on their duty cycle that may be in operation at the same time.
a. 125, 100 b. 100, 125 c. 100, 100 **d. 125, 125**

194. According to PEC how many conductors maybe computed for a given raceway containing a conductor of where the load is purely resistive.
2 signal, 3 control conductor, 1 neutral wire and 1 grounding wire
a. 7 b, 5 c. 6 **d. none**

195. The main disconnecting means for the machine shall provide overcurrent protection, shall be at the point of connection of electrical power to the machine or shall be visible and not more than.
a. 10 m **b. 15 m** c. 20 m d. 5 m

196. The following equipment shall be grounded except for.
a. All electrical equipment on the irrigation machine
b. All electrical equipment associated with the irrigation machine
c. **Metal junction fittings and bushings**
d. Control panels or control equipment that supply or control electrical equipment to the irrigation machine

197. According to PEC, the rating of the surge arrester shall be equal to or greater than the _____available at the point of application.
a. **maximum continuous phase-to-ground power frequency voltage**
b. minimum continuous phase-to-ground power frequency voltage
c. maximum continuous phase-to-phase power frequency voltage
d. minimum continuous phase-to-phase power frequency voltage

198. The arrester grounding conductor shall be connected to one of the following except for.

- a. Grounded service conductor
- b. Grounding electrode conductor
- c. Grounding electrode for the service cap
- d. Equipment grounding terminal in the service equipment

199. Conductors of circuits rated over 600 volts, nominal, shall not occupy the same equipment wiring enclosure, cable, or raceway with conductors of circuits rated 600 volts, nominal, or less unless otherwise permitted in any of the following except for.

- a. Secondary wiring to electric-discharge lamps of 1000 volts or more, if insulated for the secondary voltage involved, shall be permitted to occupy the same fixture, sign, or outline lighting enclosure as the branch-circuit conductors.
- b. Primary leads of electric-discharge lamp ballasts, insulated for the primary voltage of the ballast, where contained within the individual wiring enclosure, shall be permitted to occupy the same fixture, sign, or outline lighting enclosure as the branch-circuit conductors.
- c. Excitation, control, relay, and ammeter conductors used in connection with any individual motor or starter shall be permitted to occupy the same enclosure as the motor-circuit conductors.
- d. In motors, switchgear and control assemblies, and similar equipment, conductors of different voltage ratings shall be permitted.

200. Where conductors carrying alternating current are installed in metal enclosures or metal raceways, they shall be arranged so as to avoid heating the surrounding metal by induction. To accomplish this, all _____ shall be grouped together Except for.

- a. phase conductors
- b. the grounded conductor
- c. equipment grounding conductors
- d. neutral rods

187. When rubber is used as the insulating material over a copper conductor, why is a thin

coating of tin used between the two materials?

- a. To decrease the electrostatic stress
- b. To increase the insulation resistance of the rubber
- c. To prevent a chemical action from taking place between the copper and rubber
- d. To reduce the amount of insulating material required.

188. Plastic insulation is normally used for what levels of voltage?

- a. . Very high to high
- b. High to medium
- c. Medium to low
- d. Low to very low

189. Why is the use of asbestos being discontinued as an insulating material in the system?

- a. It breaks down rapidly with continued use
- b. It is not as effective as other types of insulation
- c. It has not proven suitable for a shipboard environment
- d. It poses a health hazard to personnel

190. When a Western Union splice is used to connect two wires, why should the twisted ends of the wires be pressed down as close as possible to the straight portion of the wire?

- a. To increase the strength of the splice
- b. To prevent the wires from puncturing the tape covering
- c. To minimize the resistance change in the circuit
- d. To increase the dielectric strength of the insulation

191. Why would you use a crimped terminal instead of a soldered terminal?

- a. Connections can be made more rapidly
- b. Less operator skill is required
- c. Connections are more uniform in construction
- d. Each of the above

192. Which of the following is an advantage of using pre insulated splices and terminal lugs?

- a. Heat shrinkable tubing is not required
- b. Spaghetti is not required
- c. They offer extra supporting strength to the wire insulation
- d. Each of the above

193. What is the purpose of the green conductor in a power tool or electric appliance cable?

- a. To complete the circuit
- b. To act as the "hot" lead
- c. To prevent electrical shock to the operator
- d. To prevent the motor of the unit from overloading

194. The neutral conductor shall not be _____.

- A. stranded
- B. solid
- C. insulated
- D. fused

195. 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

197. 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
198. The part of an electrical system that performs a mechanical function rather than an electrical function is called a(n) _____.
 A. receptacle B. device C. fitting D. outlet
199. 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
200. 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
201. 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
202. 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
203. What is meant by traveler 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
204. 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
205. Thermally protected appearing on the nameplate of a motor indicated that the motor is provided with a _____.
 A. fuse B. switch C. breaker D. heat sensing element
206. 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
 B. a short circuit D. an explosion
207. 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
208. When installing raceway systems, it is essential that they be _____.
 A. rigidly supported as required B. exposed
 C. concealed in walls D. readily accessible

209. 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
210. Two metals of different materials shall not be joined together in order to avoid the _____ action.
A. rusting B. galvanic C. reverse D. corrosion
211. A _____ is 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
212. What is the maximum number of over current devices allowed in a lighting and appliance panel board if height is a restriction?
A. 24 B. 30 C. 36 D. 42
213. 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
214. Electricity may be produced by means of _____ forces.
A. mechanical B. thermal C. chemical D. all of these
216. 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
217. Openings around electrical penetrations through fire-resistant rated walls, partitions, floors or ceilings shall be _____.
A. bushed B. sleeved C. fire stopped D. isolated
218. A generator exciter uses _____ current.
A. alternating B. direct
C. neither alternating nor direct D. either alternating or direct
219. 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
220. The advantage of cutting a metal rigid conduit with a hacksaw rather than a pipe cutter is _____.
A. you do not need a vice B. less energy is required in cutting
C. less reaming is required D. threading oil is not required
221. You would use an approved _____ to protect conductors from abrasion where they enter a box.
A. locknut B. bushing C. all thread D. hickey
222. 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**

223. The output rating of one horsepower motor is _____.
A. 1840 watts **B. 746 watts** C. 1500 watts D. 1000 watts
224. Impedance is present in the following type of circuit:
A. resistance B. DC only **C. AC only** D. both AC and DC
225. A load is considered to be continuous if it is expected to continue for _____.
A. ½ hour B. 1 hour C. 2 hours **D. 3 hours**
226. 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
227. 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**
228. 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**
229. 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
230. 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
231. _____ is 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
232. 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
233. Which of the following is not used to fasten equipment to concrete?
A. expansion bolt **B. lead shield** C. rawl plug D. steel bushing
234. 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

235. 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 and III**
236. 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 and II only C. II and III only **D. I, II and III**
237. 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 person is hurt the other person can help**
 - D. it eliminates overtime
238. Conduit should be installed as to prevent the collection of water in it between outlets. The conduit should not have a _____.
- A. low point at an outlet
 - B. high point at an outlet
 - C. high point between successive outlets
 - D. **low point between successive outlets**
239. Brass is an alloy of _____.
- A. **zinc and copper**
 - B. lead and copper
 - C. tin and lead
 - D. lead and tin
240. 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
241. 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
242. A THWN-2 conductor when installed underground in raceway shall be permitted to be derated if necessary by using the ampacity rating from what column of the ampacity tables?
- a. 60 degree
 - b. 75 degree**
 - c. 90 degree
 - d. none of the above
243. A lightning protection system is installed on a dwelling unit. Which of the following best describes code requirements for this installation?
- a. The lightning protection system shall never be connected to the electrical system.
 - b. The lightning protection system shall always be connected to the electrical system.
 - c. The lightning protection system shall not be connected to the electrical system if there is a computer in the dwelling.
 - d. The lightning protection system ground shall be used to ground the electrical system.**

245. Which of the following is not an approved identification for a grounded conductor?
a. a natural gray color
b. a white color
c. three continuous white stripes on green insulation
d. three continuous white stripes on any color except green insulation
246. Fixed electric space-heating where subject to physical damage, shall be protected in an ____ manner.
a. workman like b. validated c. approved d. listed
247. Signs which contain incandescent lamp holders shall be marked to indicate the maximum allowable ____ of lamps .
a. Type b. Wattage c. Number d. Voltage
248. In places of assemble, portable switchboards and portable power distribution equipment shall be supplied only from ____ power outlets of sufficient voltage and amp rating.
a. Approved b. Labeled c. Listed d. Isolated
249. When removing an outlet from a cellular metal floor raceway, the sections of circuit conductor that supplied the outlet shall be _____?
a. Protected from damage
b. Spliced to continue the circuit
c. Removed completely
250. ____ ____ is the underground service conductors between the street main or from a transformer, and the first point of connection to the service-entrance conductors.
a. underground feeder b. service lateral
c. branch circuit d. service mass
251. Which of the following wiring methods is not approved for use between a fire pump controller and the pump motor?
a. Rigid metal conduit b. Intermediate metal conduit
c. Liquidtight flexible metal conduit d. Electrical metallic tubing
253. Dressing rooms in theaters shall have all lights and receptacles adjacent to mirrors controlled by wall switches located _____ .
a. outside the dressing room door b. in the projection booth
c. in the circuit breaker panel board d. in the dressing room
254. Direct current systems to be grounded and supplied from an off-premises source shall have the grounding connection made _____ .
a. at each building or structure b. at any point on the premises that is convenient
c. at one or more supply stations d. at each service
255. Fire alarm circuits shall be identified at _____ locations, in a manner that will prevent unintentional interference with the signaling circuit during testing and servicing.
a. the panel board where the circuit originates
b. the office on the alarm indicator board

- c. the fire department
- d. terminal and junction

256. Where fluorescent fixtures are installed indoors, the ballasts shall have _____.
- a. thermal protection
 - b. internal fuse protection
 - c. short-circuit protection
 - d. ground-fault protection
257. Fixtures with exposed metal parts shall be provided with a _____ for connecting an equipment grounding conductor for such fixtures.
- a. grounding screw
 - b. grounding pigtail
 - c. bonding screw
 - d. mechanical means
258. Wall brackets used for scenery lighting shall be wired internally, and the _____ shall be carried through to the back of the scenery where a bushing shall be placed on the end.
- a. fixture stem
 - b. insulated conductors
 - c. mounting screws
 - d. equipment grounds
259. The maximum total voltage drop on both feeders and branch circuits to the farthest outlet should not exceed _____ percent of the supply voltage.
- 5
260. Branch-circuit conductors supplying a single motor which operates under continuous duty shall have an ampacity not less than _____ percent of the motor full-load current rating.
- 125
261. The maximum number of overcurrent devices (other than those provided in the mains) in a single cabinet of a lighting and appliance panelboard shall be _____.
- a. 48
262. The total load on any overcurrent device located in a panelboard shall not exceed _____ percent of its rating where in normal operation the load will continue for 3 hours or more.
- 80
263. The total number of quarter bends allowed in one run of rigid nonmetallic conduit shall not exceed _____.
- exceed
264. A device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly _____ applied within its rating.
- a. Circuit breaker
265. The ratio of the maximum demand of a system, or part of a system, to the total connected load of a system or the part of the system under consideration.
- a. Demand factor
266. A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.
- a. Disconnecting Means.
277. The case or housing of apparatus, or the fence or walls surrounding an installation to

prevent personnel from accidentally contacting energized parts or to protect the equipment from physical damage.

a. Enclosure

278. A general term including material, fittings, devices, appliances, luminaires (fixtures), apparatus, and the like used as a part of, or in connection with, an electrical installation.

a. Equipment.

279. An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

a. Fitting.

280. Installations under ground or in concrete slabs or masonry in direct contact with the earth; in locations subject to saturation with water or other liquids, such as vehicle washing areas; and in unprotected locations exposed to weather.

a. Wet Location.

281. A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

a. Dry Location

282. A type of surface, flush, or freestanding raceway designed to hold conductors and receptacles, assembled in the field or at the factory.

a. Multioutlet Assembly.

283. A flammable liquid having a flash point below _____ or a flammable liquid whose temperature is above its flash point, or a Class II combustible liquid that has a vapor pressure not exceeding 276 kPa (40 psia) at 38°C (100°F) and whose temperature is above its flash point.

38°C (100°F)

284. An assembly of a fuse support with either a fuseholder, fuse carrier, or disconnecting blade. The fuseholder or fuse carrier may include a conducting element (fuse link) or may act as the disconnecting blade by the inclusion of a nonfusible member.

a. Cutout.

285. An equipment grounding conductor shall be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. The equipment grounding conductor shall be permitted to be

a. insulated

286. A multiwire branch circuit shall be permitted to be considered as multiple circuits. All conductors _____ from the same panelboard.

a. shall originate b. shall not originate

287. Branch circuits larger than _____ amperes shall supply only nonlighting outlet loads.

50

288. Receptacle outlets in floors shall not be counted as part of the required number of receptacle outlets unless located within _____ of the wall.

450 mm

289. In dwelling units, at least one wall receptacle outlet shall be installed in bathrooms within ____ of the outside edge of each basin. The receptacle outlet shall be located on a wall or partition that is adjacent to the basin or basin countertop.

900 mm

290. For a one-family dwelling and each unit of a two-family dwelling that is at grade level, at least one receptacle outlet accessible at grade level and not more than ____ above grade shall be installed at the front and back of the dwelling

2000 mm

291. At least _____ wall switch controlled lighting outlet or wall switch controlled receptacle shall be installed in guest rooms in hotels, motels, or similar occupancies.

One

292. When the total connected load is operated simultaneously, the demand factor is _____

a. 100

b. 40

c. 50

d. 80

293. Where computations result in a fraction of an ampere that is less than _____, such fractions shall be permitted to be dropped.

a. 0.5

b. 0.25

c. 0.1

d. 0.75

294. Sign and outline lighting outlets shall be computed at a minimum of _____ volt-amperes for each required branch circuit

a. 1200

b. 1440

c. 1500

d. 1800

295. The maximum number of outlets permitted on 15- and 20-ampere branch circuits is _____ and _____ outlets, respectively

a. 10, 13

b. 10, 8

c. 13, 10

d. 8, 10

296. Open conductors shall be supported on the following except for.

a. glass

b. porcelain knobs

c. strain insulators

d. pendant

297. A grounded conductor shall be permitted to be uninsulated as follows except for

a. insulated copper used in a raceway.

b. Bare copper for direct burial where bare copper is judged to be suitable for the soil conditions.

c. Bare copper for direct burial without regard to soil conditions where part of a cable assembly identified for underground use.

d. Aluminum or copper-clad aluminum without individual insulation or covering where part of a cable assembly identified for underground use in a raceway or for direct burial.

298. Disconnecting means shall be provided on the _____ side of all fuses in circuits over 150 volts to ground and cartridge fuses in circuits of any voltage where accessible to other than qualified persons so that each individual circuit containing fuses can be independently disconnected from the source of power.

a. supply

b. load side

c. circuit breaker side

d. grounded conductor

299. Where not subject to physical damage, Type MC cables shall be permitted as follows except for :

- a. For services, feeders, and branch circuits
- b. For power, lighting, control, and signal circuits
- c. Indoors or outdoors
- d. where exposed to the destructive corrosive conditions

300. Where not subject to physical damage, Type MC Cables shall be permitted as follows except for

- a. Where exposed or concealed
- b. Direct buried where identified for such use
- c. In cable tray
- d. Where exposed to cinder fills, strong chlorides, caustic alkalis, or vapors of chlorine or of hydrochloric acids

301. A factory assembly of one or more conductors insulated with a highly compressed refractory mineral insulation and enclosed in a liquid tight and gastight continuous copper or alloy steel sheath.

- a. Mineral-Insulated
- b. Metal-Sheathed Cable
- c. Type MI
- d. MS cable

302. Where a conduit enters a box, fitting, or other enclosure, a _____ shall be provided to protect the wire from abrasion unless the design of the box, fitting, or enclosure is such as to afford equivalent protection.

- a. Bushing
- b. conduit
- c. ramset
- d. plump bob

303. The following are permitted as an equipment grounding conductor except for

- a. RMC
- b. IMC
- c. RNC
- d. EMT

304. EMC shall not be used in the following except for

- a. In hoist ways
- b. In storage battery rooms
- c. In any hazardous (classified) location
- d. exposed and concealed locations

305. EMT shall not be used under the following conditions except for

- a. Where, during installation or afterward, it will be subject to severe physical damage
- b. Where protected from corrosion solely by enamel
- c. In any hazardous (classified) location
- d. for both exposed and concealed work.

306. EMT shall be permitted to be used for branch circuits as follows except for :

- a. In dry locations
- b. Where concealed
- c. For system voltages of 1000 volts maximum
- d. In storage battery rooms

307. A grounded metal enclosure containing factory-mounted, bare or insulated conductors, which are usually copper or aluminum bars, rods, or tubes

- a. Bus way
- b. cable tray
- c. cable bus
- d. Bus trench

308. Neutral bus, where required, shall be sized for the following except for

- a. carry neutral load current,
- b. carry harmonic currents

c. shall have adequate momentary and short-circuit rating consistent with system requirements.

d. carry the sub synchronous current

309. The current-carrying conductors in cable bus shall have an insulation rating of _____ or higher

a. 75°C

b. 60

c. 90

d. 110

400. The combined cross-sectional area of all conductors or cables shall not exceed _____ percent of the cross-sectional area of the cell or header.

a. 40

b. 30

c. 21

d. 31

401. Conductors shall not be installed in cellular metal floor raceways as follows except for

- Where subject to corrosive vapor
- In any hazardous (classified) location except as permitted by 504.20, and in Class I, Division 2 locations as permitted in 501.4(B)(3)
- In commercial garages, other than for supplying ceiling outlets or extensions to the area below the floor but not above

d. enclosures for electric conductors.

402. Splices and taps shall be permitted within a wireway provided they are accessible. The conductors, including splices and taps, shall not fill the wireway to more than _____ percent of its area at that point.

a. 75

b. 30

c. 100

d. 80

403. Concealed knob-and-tube wiring shall not be used in the following except for

a. Motion picture studios

b. Hazardous (classified) locations

c. Hollow spaces of walls, ceilings, and attics where such spaces are insulated by loose, rolled, or foamed-in-place insulating material that envelops the conductors

d. exposed or concealed wiring

404. Flexible cords and cables shall be used only for the following except for

a. Pendants

b. Wiring of luminaires (fixtures)

c. Connection of portable lamps, portable and mobile signs, or appliances

d. As a substitute for the fixed wiring of a structure

405. Flexible cords and cables shall be used only for the following except for

a. Elevator cables

b. Wiring of cranes and hoists

c. Prevention of the transmission of noise or vibration

d. Where run through doorways, windows, or similar openings

406. According to PEC, which of the following is not a standard practice?

a. Conductors shall be secured in a manner that does not tend to cut or abrade the insulation.

b. Conductor insulation shall be protected from abrasion where it passes through metal.

c. Splices and taps shall not be located within luminaire (fixture) arms or stems.

d. Splices or taps shall be made within or on a luminaire (fixture).

407. Which of the following is not correct Flexible cord shall be of the hard-service type.
- Having conductors not smaller than the branch-circuit conductors
 - Having ampacity at least equal to the branch-circuit over current device
 - Having an equipment grounding conductor.
 - Having an enough Tension to carry 24 kg weight.
408. Which of the following is the least required by the Code? Flexible cords shall be secured to the undersides of showcases so that
- Wiring is not exposed to mechanical damage.
 - A separation between cases not in excess of 50 mm or more than 300 mm between the first case and the supply receptacle is ensured.
 - The free lead at the end of a group of showcases has a female fitting not extending beyond the case.
 - There is still an allowable 150 non heating conductor for the connection at the junction box
409. Luminaires (fixtures) that require adjusting or aiming after installation shall not be required to be equipped with a/an _____ provided the exposed cord is of the hard-usage or extra-hard-usage type and is not longer than that required for maximum adjustment. The cord shall not be subject to strain or physical damage.
- attachment plug or cord connector
 - additional support
 - grounding
 - Tie wire
410. A bushing or the equivalent shall be provided where flexible cord enters at _____. The bushing shall be of insulating material unless a jacketed type of cord is used.
- the base or stem of a portable lamp
 - the conduit
 - the junction box
 - Service cap at the service point

PEC part 2

- Additional feeders or branch circuits shall be permitted to supply the following except for.
 - Fire pumps
 - Emergency systems
 - Legally required standby systems
 - Motor of the Elevator
- Additional feeders or branch circuits shall be permitted where the capacity requirements are in

excess of _____ amperes at a supply voltage of _____ volts or less.

- a. 2000, 600 b. 200, 600 c. 1000, 460 d. 100, 230

3. The disconnecting means for each supply permitted shall consist of not more than _____ switches or _____ circuit breakers mounted in a single enclosure, in a group of separate enclosures, or in or on a switchboard.

- a. 6, 6 b. 48, 48 c. 42, 42 d. 10,10

4. The vertical clearances of all service-drop conductors shall be based on conductor temperature of _____, no wind, with final unloaded sag in the wire, conductor, or cable.

- a. 15°C c. 5°C c. 60°C d. 75°C

5. A grounded conductor shall be permitted to be uninsulated as follows except for.

- a. Bare copper used in a raceway
- b. Bare copper for direct burial where bare copper is judged to be suitable for the soil conditions
- c. Bare copper for direct burial without regard to soil conditions where part of a cable assembly identified for underground use.

d. Aluminum

6. The ampacity of the service-entrance conductors before the application of any adjustment or correction factors shall not be less than.

- a. The sum of the noncontinuous loads plus 100 percent of continuous loads
- b. The sum of noncontinuous load plus the continuous load if the service-entrance conductors terminate in an overcurrent device where both the overcurrent device and its assembly are listed for operation at 100 percent of their rating
- c. 100 percent of the maximum permissible load
- d. 115 of the rating of the disconnect

7. Service cables, where subject to physical damage, shall be protected by any of the following except for.

- a. Rigid metal conduit b. Intermediate metal conduit
- c. Rigid nonmetallic conduit suitable for the location d. Split knob and tube

8. The standard ampere ratings for fuses and inverse time circuit breakers are any of the following except for.

- a. 35 b. 45 c. 125 d. 185

9. According to PEC restricted access shall be defined as located behind one of the following except for.

- a. Removable and sealable covers over the adjusting means
- b. Bolted equipment enclosure doors
- c. Locked doors accessible only to qualified personnel
- d. MV switch gear

10. Overcurrent devices shall be readily accessible unless one of the following applies.

- a. For busways
- b. For supplementary overcurrent protection
- c. For overcurrent devices in a fuse cut out
- d. For overcurrent devices adjacent to utilization equipment that they supply, access shall be permitted to be by portable means.

11. The allowable ampacity of conductor are rated up to _____ volts.
 a. 600 **b. 2000** c. 1000 d. 220
12. The ampacity of 3.5 sq mm THWN copper conductor is 30 A in free air. What will be its allowable ampacity if it will be directly buried.
 A. 20 b. 35 **c. 25** d. 40
13. In dwelling units and guest rooms of hotels and motels and similar occupancies, the voltage shall not exceed 230 V, nominal between conductors that supply the terminal of the following. Which one is not included in the standard?
 a. Lighting fixture
 b. 1440 VA connected load
 c. Load less than ¼ hp
d. 200 W per receptacle
14. For ranges 8 ¾ kW or more rating, the minimum Branch Circuit shall be.
 a. 35 **b. 40** c. 50 d. 45
15. What shall be the minimum size of conductor for signage?
a. 2.0 sq mm. b. 3.5 sq. mm c. 5.5 sq mm d. 8.0 sq mm
16. An outlet dedicated only to supply four loads of 250 W, 15 W, 100W and 200 W. What will be the minimum size of conductor in the outlet?
a. 2.0 sq mm. b. 3.5 sq. mm c. 5.5 sq mm d. 8.0 sq mm
17. A 100 % demand factor shall only apply for Electric Clothes dryer up _____ units or less.
 a. 5 **b. 4** c. 6 d. 8
18. 15 dwelling units has a demand factor of.
a. 40 % b. 50% c. 30 % d. 100%
19. Overhead conductor for festoon lighting shall not be smaller than.
 a. 2.0 sq mm. **b. 3.5 sq. mm** c. 5.5 sq mm d. 8.0 sq mm
20. In Lighting system, A span exceeding _____m, the conductor shall be supported by_____.
 a. 15, rossete b.10, mast **c. 12, messenger wire** d. 5, plenum
21. What shall be the minimum creepage distance between open conductor.
 a. 1000 mm **b. 100 mm** c. 10 mm d. 1 mm
22. What shall be the minimum separation of conductor on Poles.
 a. 3000 mm **b. 300 mm** c. 30 mm d. 3 mm
23. What shall be the minimum climbing space between power and communication conductor @ nominal voltage of 600 V.
 a. 5500 mm **b. 760 mm** c. 1900 mm d. 1000 mm
24. The size of bonding jumper conductor for a system that supplies Class I III circuit and is derived from the transformer rated not more than 1 kV shall not be smaller than _____ copper and _____ aluminum.
a. 2.0 sq mm, 3.5 sq mm b. 3.5 sq. mm, 5.5 sq mm

c. 5.5 sq mm, 8.0 sq mm

d. 8.0 sq mm, 14.0 sq mm

25. The size of conductor for grounding of instrument transformer shall be.

a. 2.0 sq mm, 3.5 sq mm

b. 3.5 sq. mm, 5.5 sq mm

c. 5.5 sq mm, 3.5 sq mm

d. 8.0 sq mm, # 8 AWG

26. Where installed in raceways, conductors of size _____ and larger shall be stranded.

a. 14.0 sq mm.

b. 3.5 sq. mm

c. 5.5 sq mm

d. 8.0 sq mm

27. According to PEC only conductors _____ or larger are permitted to be connected in parallel to form a single conductor.

a. 50 sq mm

b. 125 sq mm

c. 14.0 sq mm

d. 200 sq mm

28. Which of the following is not an approved corrosion resistant material for conduit?

a. zinc

b. cadmium

c. enamel

d. Nickel

29. This particular size of wire can still be operated from 2 kV up to 8 kV

a. 2.0 sq mm.

b. 3.5 sq. mm

c. 5.5 sq mm

d. 8.0 sq mm

30. Thermoplastic insulation material may stiffen @ temperature of.

a. -10°C

c. 50°C

c. 10°C

d. -40°C